

NEW BLACK BOARD VLE SYSTEM

Iacovos Iacovides
Web Design and Development

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Abstract

The Edge Hill University is currently using an online system, for the students to either guide through their course and their modules, or either submit their assignments or get feedback on their work. This online system is the Black Board (learning edge). During the quarantine students could also use Black Board to watch their lessons online through a tab called collaborative. A Front-End Web Developer has been hired to create a prototype of a new version of Black Board and present it to people hoping that the main problems with the current Black Board have been fixed. One of the main problems needed to be fixed are the submission process which takes too long. The second problem needed to be fixed is to make the general guidance of the system easier and clearer. In this report, a deep explanation from the beginning of the project to the very end will be given, explaining everything in detail.

1.0 Introduction

In order for the professional to be able to improve something, the latter must know what the current problems are. Therefore, a questionnaire has been made and shared among different people who are current users of the university's Black Board system. There are a lot of ways to do a research, but the user decided to use the questionnaire method. First of all, questionnaires give the researcher a cheap way to get a vast amount of data from many people cheap (McLeod, 2018). Adding to that, with the aid of the technological development through the last years, a questionnaire can be shared among many people at the same time through many different platforms. This means that by selecting to use questionnaires for the research, the researcher is saving money and time (Cleave, 2021). Moreover, when using questionnaires, the respondent is guaranteed their anonymity which means that the latter will answer in honesty especially when the subject is based on a sensitive issue (McLeod, 2018). Moving on, through a questionnaire a researcher can use a variety of methods to gather data from the audience. There are three types of questions that the researcher can use. There are the **open-ended** questions where the respondent can give a wide range of responses, where at the same time the researcher will get a taste of the audience's answers without influencing the outcome of the question by pre-determining potential answers (Beiske, 2002). Another type of questions are the **Dichotomous (closed-ended)** questions. These questions are defined as the questions that the respondent will have to answer by choosing a couple of pre-determined, such as **Yes/No** or **True/False**. In a typical scenario, this type of questions will give quantitative data back to the researcher (Anon., 2018). The last type of questions are **Multichotomous (close-ended)** questions. Like Dichotomous questions, Multichotomous questions also give the respondent a set of pre-determined questions in a form of multiple-choice questions. These questions tend to be easier on the respondent to answer, and to the researcher since the process to analyse the data will be easier (Beiske, 2002). Thus, the researcher has chosen to go with using a questionnaire to gather the data and analyse them. The questionnaire has been prepared and given out to a number of people either through social media or shared among them in a public area. The professional has to go through the data and analyse the data in order to conclude whether the Black Board system needs to change or stay the way it is. The data will be analysed in Microsoft Excel. Below is a screenshot of the data that has been gathered into Microsoft Excel (figure 1). In the excel document that the latter used to analyse the data, there are five columns where the data are placed under. The columns are **Questions, User ID, Department, Answers and Ratings from 1-10**. The people that got to fill the questionnaire were told to answer the question as the question is asking them, and then choose a category of numbers from 1 to 10 (1 to 2 for poor and 9 to 10 for excellent), which depicts their confidence levels for the answers they gave.

EHU's Black-Board VLE

Questions	User ID	Department	Answers	Ratings from 1-10
How do you use Black Board?	User 1	Criminology	Phone and laptop	
How would you describe your experience when using BB	User 1	Criminology	Difficult to start with but now used to it	6 to 7
Do you thing Black Board could be any different?	User 1	Criminology	No	7 to 8
Describe how you guide through BB and give some thoughts about it	User 1	Criminology	Find the course and guide through it. Pretty easy	8 to 9
How do you find your courses and give some thoughts about it.	User 1	Criminology	Find the course and then find what you are looking for in the course. Pretty easy	9 to 10
How do submit your work for the modules and give some thoughts about it?	User 1	Criminology	Go to the submission drop box and then submit. Pretty easy.	9 to 10
Would it b better if you could submit in less clicks?	User 1	Criminology	Yes it would be much faster.	
Would you change anything from the current BB?	User 1	Criminology	No, expect submitting faster.	
How do you use Black Board?	User 2	Criminology	I use it for the assessments.	
How would you describe your experience when using BB	User 2	Criminology	Hard at the beginning but now its fairly easy.	8 to 9
Do you thing Black Board could be any different?	User 2	Criminology	No its fairly easy	9 to 10
Describe how you guide through BB and give some thoughts about it	User 2	Criminology	It's easy to find my course and then guide through the modules.	8 to 9
How do you find your courses and give some thoughts about it.	User 2	Criminology	I find the course from the menu on the left and then guide through it. It is very easy.	9 to 10
How do submit your work for the modules and give some thoughts about it?	User 2	Criminology	I click on the courses submissions drop box. Its fairly easy	6 to 7
Would it b better if you could submit in less clicks?	User 2	Criminology	Yes definetley.	
Would you change anything from the current BB?	User 2	Criminology	No, expect submitting faster.	
How do you use Black Board?	User 3	Animation	I use it for the assessments.	
How would you describe your experience when using BB	User 3	Animation	It is a bit confusing when you have many modules to go through.	5 to 6
Do you thing Black Board could be any different?	User 3	Animation	Yes, make everything easier to find.	3 to 4
Describe how you guide through BB and give some thoughts about it	User 3	Animation	Find the course and guide through it. Pretty easy	9 to 10
How do you find your courses and give some thoughts about it.	User 3	Animation	Find the course and then find what you are looking for in the course. Pretty easy	8 to 9
How do submit your work for the modules and give some thoughts about it?	User 3	Animation	Click on the courses submission drop box. Easy	6 to 7
Would it b better if you could submit in less clicks?	User 3	Animation	Yes	
Would you change anything from the current BB?	User 3	Animation	Make submission process easier and faster.	
How do you use Black Board?	User 4	Law	Phone and laptop	
How would you describe your experience when using BB	User 4	Law	It was hard at the beginning but it is a bit easier now.	7 to 8
Do you thing Black Board could be any different?	User 4	Law	it does the job so no	8 to 9
Describe how you guide through BB and give some thoughts about it	User 4	Law	Open BB, log in and find your course and then guide through it	6 to 7
How do you find your courses and give some thoughts about it.	User 4	Law	Find the course button on the left hand side and then guide through the course	8 to 9
How do submit your work for the modules and give some thoughts about it?	User 4	Law	Find the correct module and then submit. The process is easy	7 to 8
Would it b better if you could submit in less clicks?	User 4	Law	Yes definetley.	
Would you change anything from the current BB?	User 4	Law	Make all the processes faster and easier.	
How do you use Black Board?	User 5	Bussiness and management	Phone and laptop	
How would you describe your experience when using BB	User 5	Bussiness and management	Confusing and hard.	1 to 2
Do you thing Black Board could be any different?	User 5	Bussiness and management	Yes, the modules could be easier to find and easier to guide through.	5 to 6
Describe how you guide through BB and give some thoughts about it	User 5	Bussiness and management	I find the correct module in the course and then guide through it. It pretty confusing.	5 to 6
How do you find your courses and give some thoughts about it.	User 5	Bussiness and management	By finding and clicking on the course button on the left hand side.	8 to 9
How do submit your work for the modules and give some thoughts about it?	User 5	Bussiness and management	Go to the correct module and then submit. Easy	7 to 8
Would it b better if you could submit in less clicks?	User 5	Bussiness and management	Yes definetley.	
Would you change anything from the current BB?	User 5	Bussiness and management	Make the system work easier and faster.	
How do you use Black Board?	User 6	Criminology	Phone and laptop	
How would you describe your experience when using BB	User 6	Criminology	Easy	7 to 8
Do you thing Black Board could be any different?	User 6	Criminology	No its fine the way it is.	7 to 8
Describe how you guide through BB and give some thoughts about it	User 6	Criminology	I just find the correct course and guide through the modues to find what I am looking for. Easy	9 to 10
How do you find your courses and give some thoughts about it.	User 6	Criminology	Find the course on the menu and then guide through it.	8 to 9
How do submit your work for the modules and give some thoughts about it?	User 6	Criminology	Find the correct module and then submit. Easdy	7 to 8
Would it b better if you could submit in less clicks?	User 6	Criminology	Its easy to do now but if it was faster it would be better.	
Would you change anything from the current BB?	User 6	Criminology	No.	
How do you use Black Board?	User 7	Psychology	Lessons and assingments.	
How would you describe your experience when using BB	User 7	Psychology	Great	9 to 10
Do you thing Black Board could be any different?	User 7	Psychology	No, it fine the way it is.	7 to 8
Describe how you guide through BB and give some thoughts about it	User 7	Psychology	Log in into BB and then click on the course button and guide through the lessons. Easy	8 to 9
How do you find your courses and give some thoughts about it.	User 7	Psychology	I find the correct module and then I find everything I want.	8 to 9
How do submit your work for the modules and give some thoughts about it?	User 7	Psychology	Find the correct module and then submitmy work. Easy but a bit time consuming	5 to 6
Would it b better if you could submit in less clicks?	User 7	Psychology	I don't really care since it is easy the way it is.	
Would you change anything from the current BB?	User 7	Psychology	No.	
How do you use Black Board?	User 8	Engineering	Assingments	
How would you describe your experience when using BB	User 8	Engineering	Hard and confusing.	2 to 3
Do you thing Black Board could be any different?	User 8	Engineering	Yes, make it easier with less information on the page. Just show me my course and that's it.	3 to 4
Describe how you guide through BB and give some thoughts about it	User 8	Engineering	Log in BB then find the course button and then find the correct module in all of that extra information that i don't need. Its confusing and time consuming	5 to 6
How do you find your courses and give some thoughts about it.	User 8	Engineering	I need to find my course and then find the module and then find the information I need. Its not that hard or too easy. It takes time though.	7 to 8
How do submit your work for the modules and give some thoughts about it?	User 8	Engineering	Find the correct module then click on the submission drop box and then submit my work. Confusing	4 to 5
Would it b better if you could submit in less clicks?	User 8	Engineering	Yes for sure.	
Would you change anything from the current BB?	User 8	Engineering	Yes I would make everything easier and faster to find.	
How do you use Black Board?	User 9	Film and TV productions	For assingments.	
How would you describe your experience when using BB	User 9	Film and TV productions	Its pretty easy to use.	7 to 8
Do you thing Black Board could be any different?	User 9	Film and TV productions	No, it is fine the way it is	7 to 8
Describe how you guide through BB and give some thoughts about it	User 9	Film and TV productions	First you find your course and then you guide through the modules. Easy	7 to 8
How do you find your courses and give some thoughts about it.	User 9	Film and TV productions	I click on courses. Easy stuff.	9 to 10
How do submit your work for the modules and give some thoughts about it?	User 9	Film and TV productions	Find the module I am looking for and then click on submission drop box and then submit. Easy	8 to 9
Would it b better if you could submit in less clicks?	User 9	Film and TV productions	Yes it would be much faster.	
Would you change anything from the current BB?	User 9	Film and TV productions	No except making the submission a bit faster.	
How do you use Black Board?	User 10	Bussiness and management	Phone and laptop	
How would you describe your experience when using BB	User 10	Bussiness and management	Great	9 to 10
Do you thing Black Board could be any different?	User 10	Bussiness and management	No, I would leave it the way it is.	9 to 10
Describe how you guide through BB and give some thoughts about it	User 10	Bussiness and management	I find my course and then guide through the modules. Easy but a bit time consuming	7 to 8
How do you find your courses and give some thoughts about it.	User 10	Bussiness and management	The same way as before. Find the course and that's it.	9 to 10
How do submit your work for the modules and give some thoughts about it?	User 10	Bussiness and management	Find my course and then click on submission dropbox. Easy	9 to 10
Would it b better if you could submit in less clicks?	User 10	Bussiness and management	Yes ofcourse	
Would you change anything from the current BB?	User 10	Bussiness and management	Makesubmission faster.	

Figure 1: Data gathered in Excel to be analysed.

The next step is to analyse the data and create appropriate graphs that will show the information in an understandable way. The data analyst will use the column “E” with the ratings to create appropriate graphs and charts.

2.0 Data Analysis:

There were some questions in the questionnaire that the latter can analyse without the use of graphs and charts. These questions are: **Would it be better if you could submit in less clicks and would you change anything from the current Black Board.**

A filter is used on the first graph so that these two questions will only be shown on the screen, since it is going to be easier for the professional to observe at the questions and reach into a conclusion easier.

Questions	User ID	Department	Answers
Would it be better if you could submit in less clicks?	User 1	Criminology	Yes it would be much faster.
Would it be better if you could submit in less clicks?	User 2	Criminology	Yes definitely.
Would it be better if you could submit in less clicks?	User 3	Animation	Yes
Would it be better if you could submit in less clicks?	User 4	Law	Yes definitely.
Would it be better if you could submit in less clicks?	User 5	Business and management	Yes definitely.
Would it be better if you could submit in less clicks?	User 6	Criminology	Its easy to do now but if it was faster it would be better.
Would it be better if you could submit in less clicks?	User 7	Psychology	I don't really care since it is easy the way it is.
Would it be better if you could submit in less clicks?	User 8	Engineering	Yes for sure.
Would it be better if you could submit in less clicks?	User 9	Film and TV productions	Yes it would be much faster.
Would it be better if you could submit in less clicks?	User 10	Business and management	Yes ofcourse

Figure 2: Question that does not need graph or chart to analyse.

On the figure above (figure 2), the professional can clearly see that almost all people would believe that it would be better if they could submit in less clicks rather than having to go through all the steps to submit their work. Two out of the ten people that answered the questionnaire appropriately thing that it is okay the way it is, where one of those two users (user 6) would like the process to be faster, whereas the other user (user 7) does not care since they find the process of submitting very easy the way it is.

Questions	User ID	Department	Answers
Would you change anything from the current BB?	User 1	Criminology	No, expect submitting faster.
Would you change anything from the current BB?	User 2	Criminology	No, expect submitting faster.
Would you change anything from the current BB?	User 3	Animation	Make submission process easier and faster.
Would you change anything from the current BB?	User 4	Law	Make all the processes faster and easier.
Would you change anything from the current BB?	User 5	Business and management	Make the system work easier and faster.
Would you change anything from the current BB?	User 6	Criminology	No.
Would you change anything from the current BB?	User 7	Psychology	No.
Would you change anything from the current BB?	User 8	Engineering	Yes I would make everything easier and faster to find.
Would you change anything from the current BB?	User 9	Film and TV productions	No except making the submission a bit faster.
Would you change anything from the current BB?	User 10	Business and management	Makesubmission faster.

Figure 3: Second question that does not need a graph or a chart to analyse.

On the figure above (figure 3), the data analyst can clearly see that again almost all users would be happy if the general process to find a course, a module and submitting of work were easier to find and a lot faster. Like the previous question, users 6 and 7 would not change anything because they are happy with the current VLE system.

For the next questions though the researcher was expecting an answer accompanied with a numerical answer which later, he can use to create graphs and charts showing what students feel about the universities VLE system, Black Board.

On the figure below (figure 4), data about the students Guidance through Black Board are depicted.

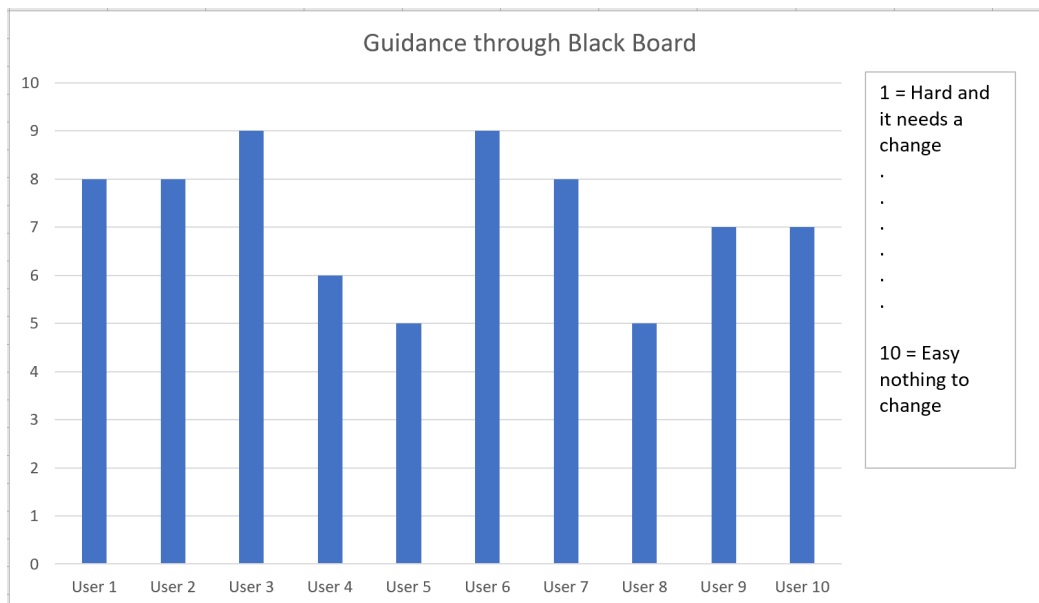


Figure 4: Guidance through Black Board chart.

It is clear that most users (students) are pretty familiar with the system. Most of the students have selected a score of six and above which means that they are in some way confident with guiding through Black Board. However, two students have selected the score of 5 which means that there is something confusing them from guiding easily through Black Board. This means that the guidance through Black Board might need to change a bit in order to make **user 5 and user 8** more confident with Black Board.

On the figure below (figure 5), data about the students guiding through their courses is depicted

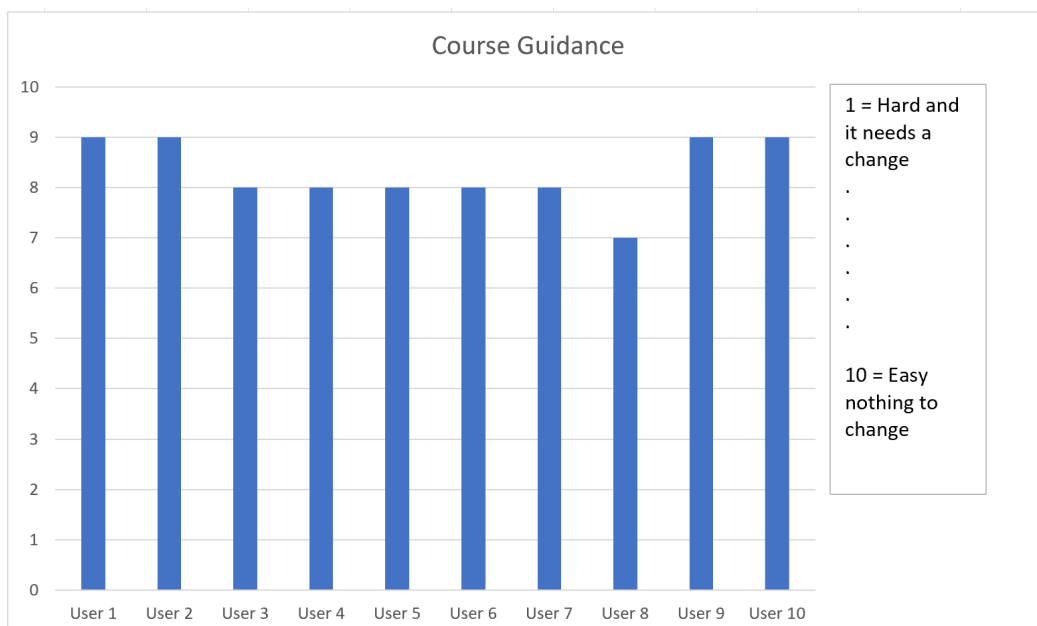


Figure 5: Students' Guidance through course chart.

With the aid of the figure above the researcher can clearly conclude that all users are familiar with finding their course and guiding through it. This means that for this topic,

possibly nothing will need to be changed. Most users have selected a score of eight and above and only one student has user has selected a score of 7.

On the figure below (figure 6), data about the Submission process is depicted

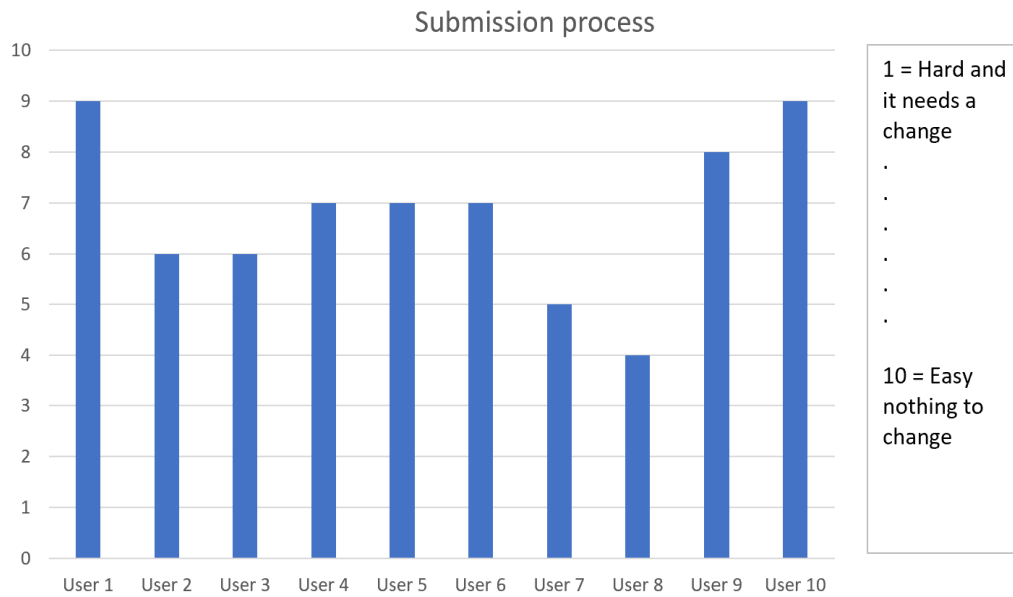


Figure 6: Students' submission process chart.

On the figure above, data about the students Submission process is shown. For this topic, the researcher can see that unlike the previous questions, users are mostly unconfident with the process of Submitting their work. Thus, the researcher knows that the process of submitting work will need to change when a new system is developed.

On the figure below (figure 7), data about the general experience through Black Board is depicted.

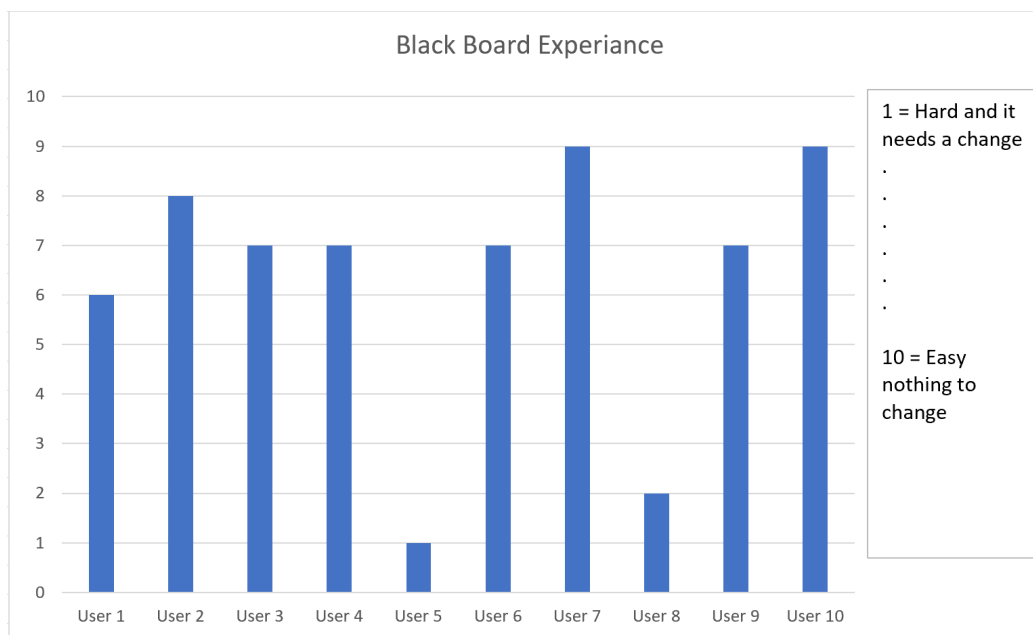


Figure 7: Students' Black Board experience chart.

By observing the students' general experience around Black Board, the researcher can conclude to the fact that the users are not happy or confident when using the Black Board system. Two users have selected scores of two and below which means that they are not happy and very unconfident when using Black Board. Only two users have selected a score of 9 and most of the users have selected scores between 6 and 7 which portrays that almost all users have some troubles when they are asked to used Black Board for any reason. Therefore, the researcher knows that many things will have to change when it comes to create a new system.

On the figure below (figure 8), data showing if users would change anything from Black Board.

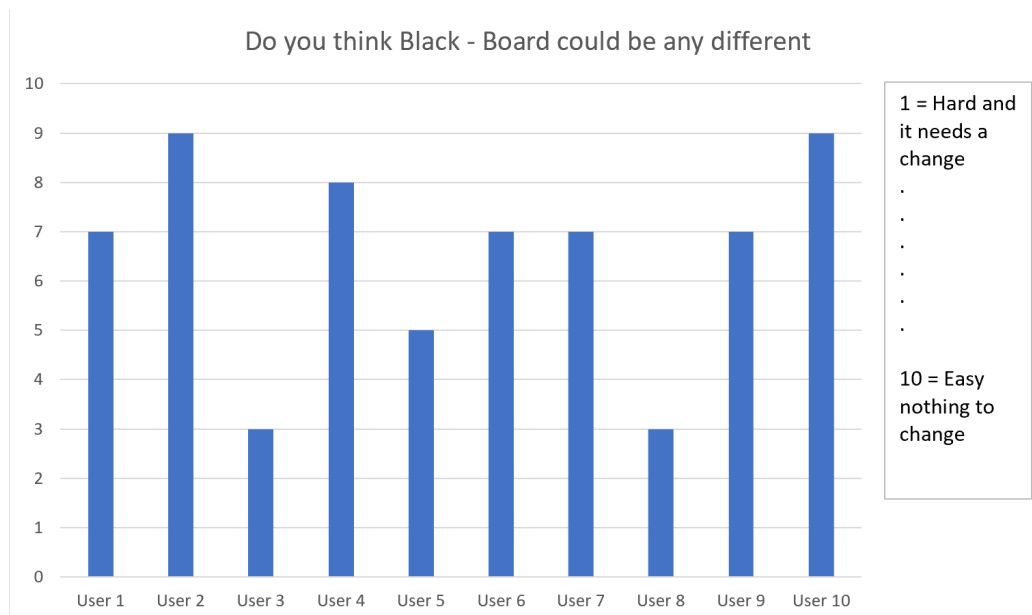


Figure 8: Would students change anything from Black Board chart.

On the chart above, the researcher can conclude that most students would not change anything from the current Black Board system. Most students would be confident and happy when using Black Board system if the processes about submitting work, guiding through modules and courses would be easier and quicker. Thus, the researcher reached to a conclusion that some major changes need to be made for the new Black Board system where those changes will be used form the users in order for the researcher to know if the users are happy about those changes or not.

3.0 Personas

The researcher set up the personas for each user that are represented in the graphs above. The reason that personas are being used when someone is doing analytics of data is to represent realistically and reliably thoughts and feelings. In this case the personas created are to represent how the users (students) are feeling and thinking about their current VLE system, Black Board.

On the figures below, the personas are depicted.

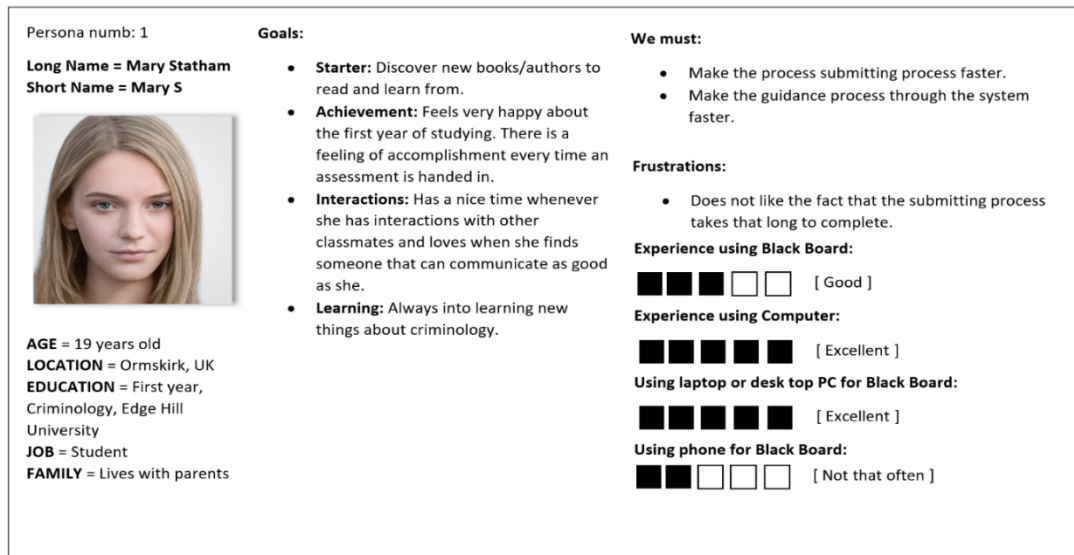


Figure 9: Mary S's persona.

On the figure above (figure 9), the persona of Mary Statham is shown. Mary is as first year student studying **Criminology**. In the persona the goals of Mary are explained. For example, she wants to discover new books and authors daily to learn from. Under the title **“We must:”** in the persona (on the top right), are the things that the user wants to change from the current system. She wants the submission process to become faster and the general process of guidance through the system to become faster. Under the title **“Frustrations”**, what the user does not like is shown. In this case, Mary does not like the fact that the process of submitting work takes so long to complete. Below that title are the overall experiences that the user has with **Black Board and Computers**. Adding to that there are two more pieces of information there, which are how often the user is using a **laptop or desktop PC for Black Board** and how often does the latter uses **phone for Black Board**. The square below each title shows the score of the user accompanied with a word or a phase next to them, which explains what the squares show. When a squared is filled with black colour it means that the user met that score. The more black filled squares, the better.

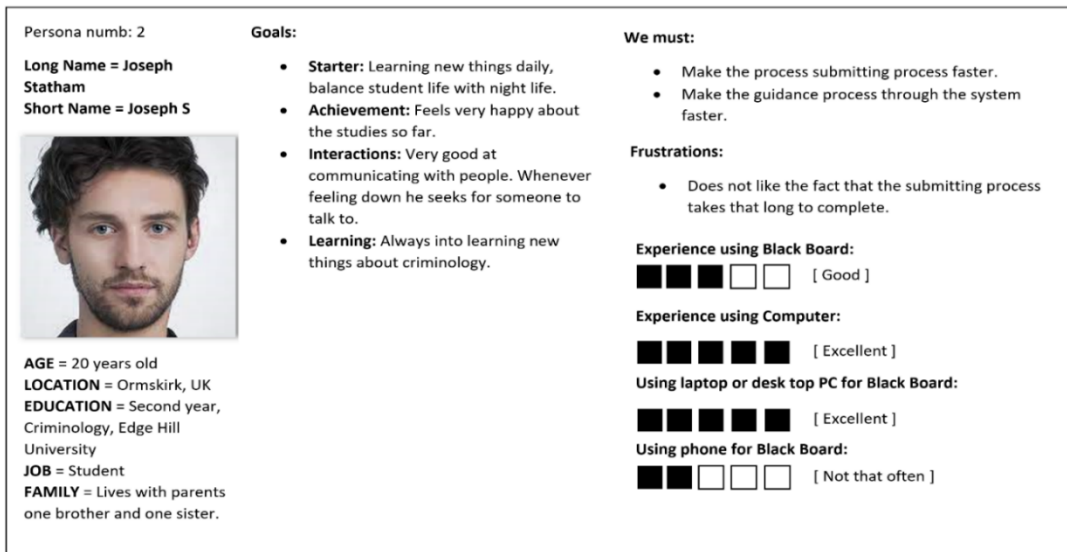


Figure 10: Joseph S's persona.

On the figure above (figure 10), Joseph Statham's persona is presented. Joseph is a second-year student, studying **Criminology**. He likes to learn new things daily and he balances his student life with his nights life. Joseph is happy about his studies so far. The developer – the same as figure 9 – will have to make the submission process faster and the general process of guidance through the system faster. Joseph does not like the fact that the submission process takes long to be completed. His experience with using black board is **good** and his experience using computers is **excellent**. He is **always** using a laptop or a PC for guiding Black Board

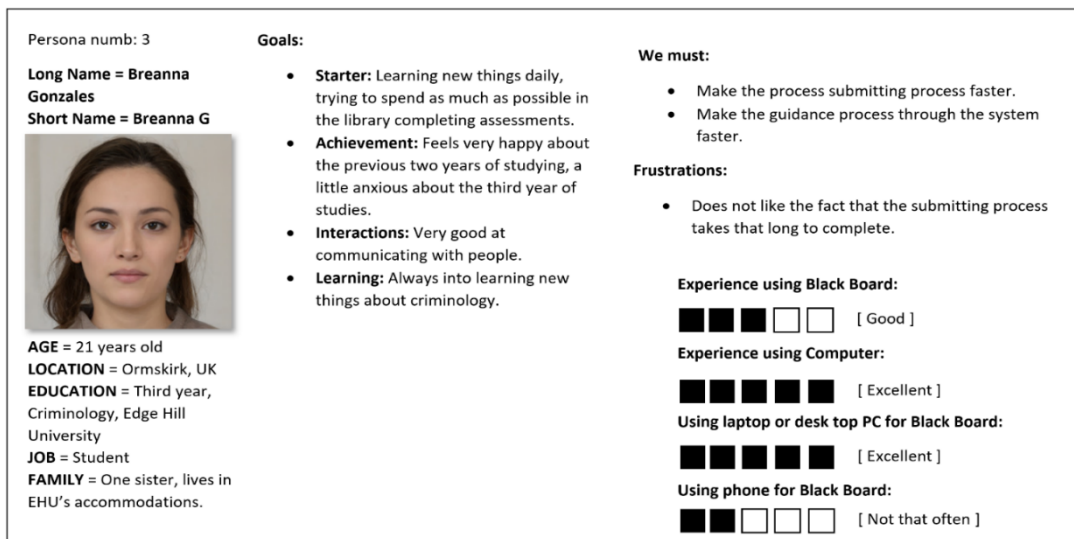


Figure 11: Breanna G's persona.

On the figure above (figure 11), Breanna's persona is depicted. Breanna is a third-year student, studying **Criminology**. She is a hard worker who spends as much time as possible trying to complete the assessments. She, like the previous two users, would like the submitting process to become faster and also the general process of guidance through the system to become faster. She does not like the fact that the submitting process is taking long

to complete. Her experience with using black board is **good** and his experience using computers is **excellent**. She is **always** using a laptop or a PC for guiding Black Board.

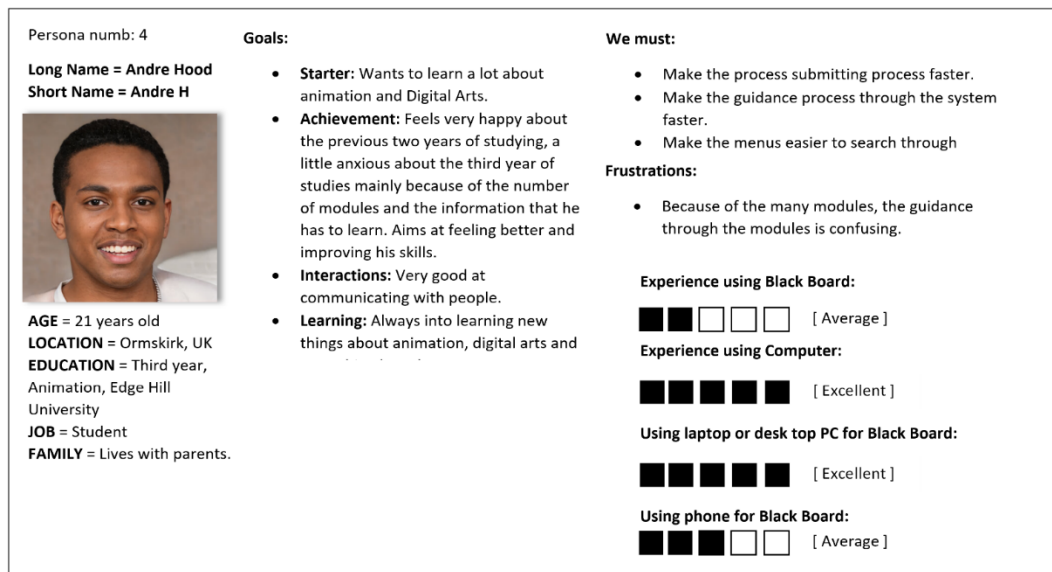


Figure 12: Andre H's persona.

On the figure above (figure 12), Andre H's persona is portrayed. Andre is a third-year student, studying **Animation**. He likes to learn new things daily and he balances his student life with his nights life. Andre is happy about his studies so far. The developer will have to make the submission process faster and the general process of guidance through the system faster. Adding to that, the latter will also have to make the menus easier to search through. Andre does not like the fact that due to his number of modules, the guidance through the modules and the weeks is very confusing for him. His experience with using black board is **average** and his experience using computers is **excellent**. He is **always** using a laptop or a PC for guiding Black Board.

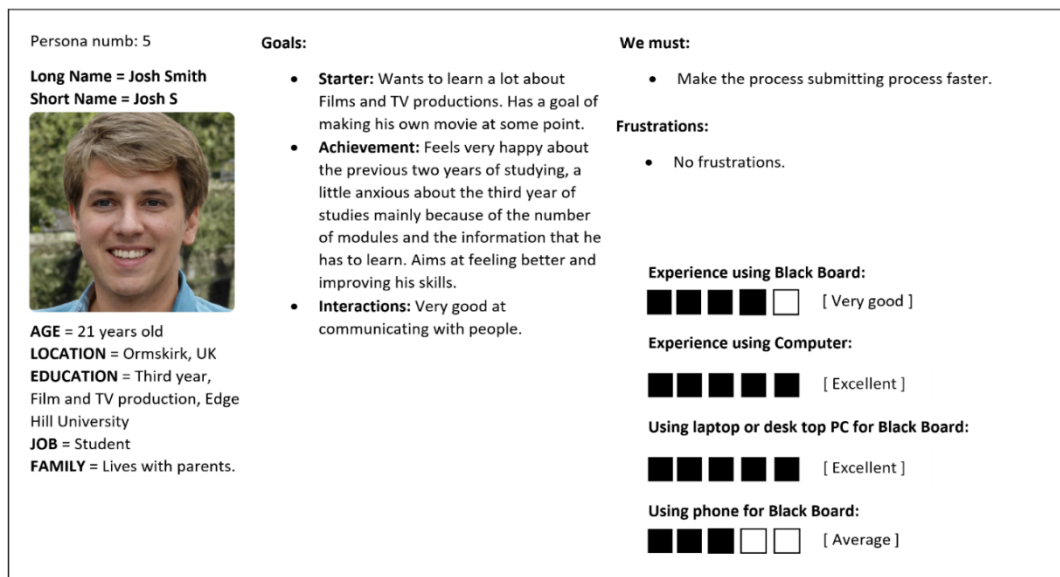


Figure 13: Josh S's persona.

On the figure above (figure 13), Josh's persona is given. Josh is a third-year student, studying **Film and TV production**. Josh's goal is to make his own movie at some point in

his life. Josh just wants the submission process to become faster, but he has no frustrations. His experience with using Black Board is **very good**, and his experience when using computers is **excellent**. He is **always** using a laptop or a PC for Black Board and **usually** from a phone device.

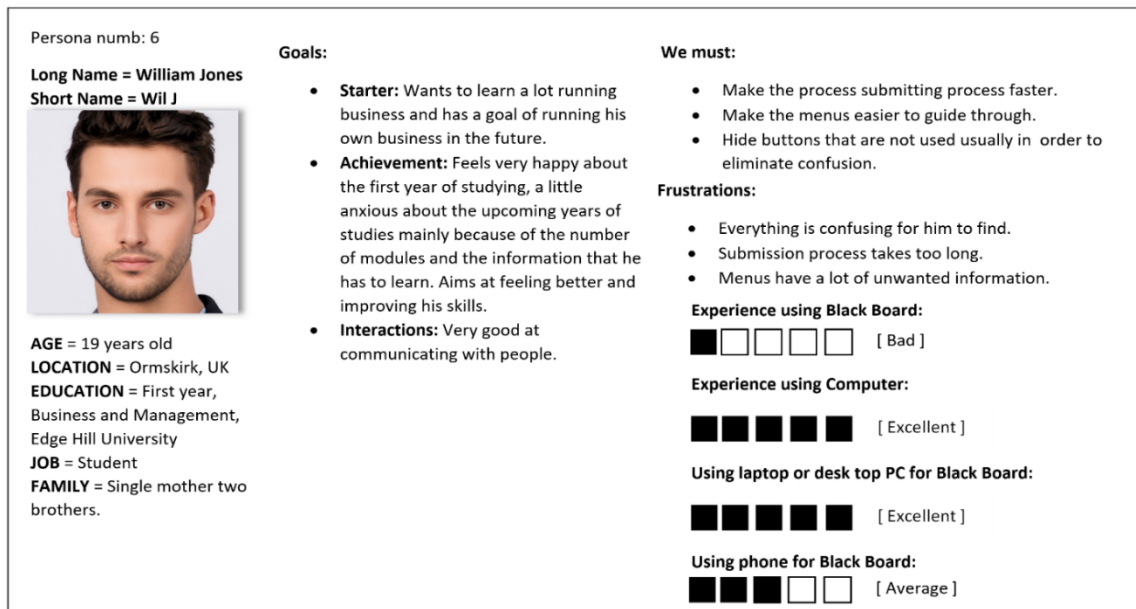


Figure 14: William J's persona.

On the figure above (figure 14), William's persona is portrayed. William is a first-year student, studying **Business and Management**. He is feeling very happy about the first year of studies, but he is anxious as well about the upcoming years mainly because of the number of modules and information that he needs to learn. William wants many things to change. First of all, he wants the submission process to become faster, the menus to become easier to guide through and also hide the buttons that are not used that usually in order to eliminate confusion. William finds everything hard and confusing when it comes to use Black Board. The submission process takes too long for him, and the menus have a lot of unwanted information. His experience with using Black Board is **bad**, but his experience when using computers is **excellent**. He is always using laptop and PC for Black Board and **usually** from a phone.

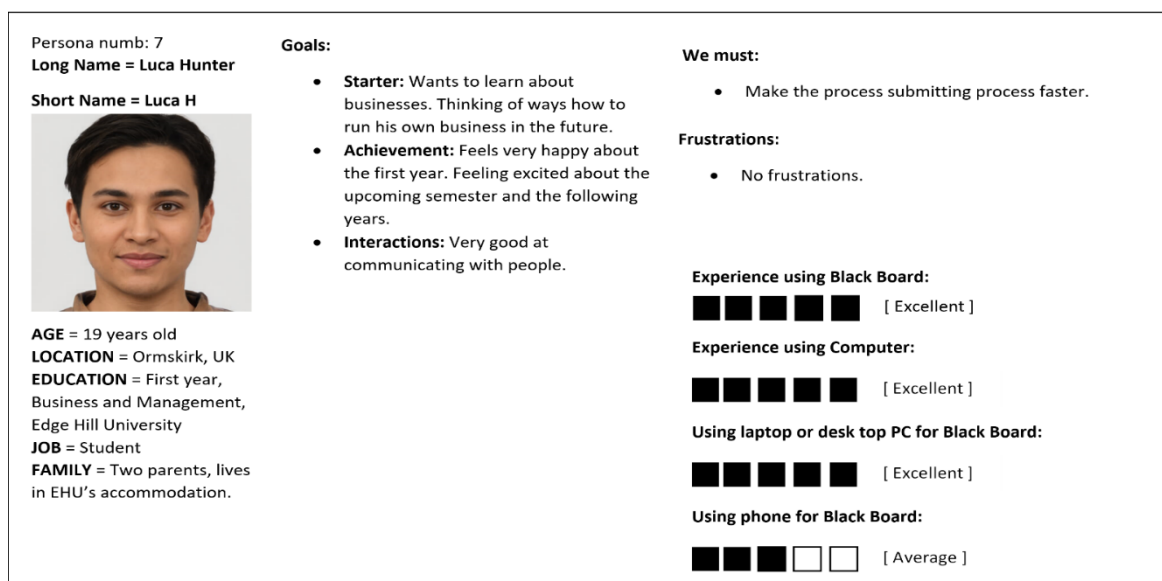


Figure 15: Luca H's persona.

On the figure above (figure 15), Luca's persona is given. Luca is a first-year student, studying **Business and Management**. Luca's goal is to run his own business at some point in his life. Luca just wants the submission process to become faster, but he has no frustrations. His experience with using Black Board is **very good**, and his experience when using computers is **excellent**. He is **always** using a laptop or a PC for Black Board and **usually** from a phone device.


<p>Persona numb: 8</p> <p>Long Name = Cao Hong Short Name = Cao H</p>  <p>AGE = 21 years old LOCATION = Ormskirk, UK EDUCATION = Third year, Engineering, Edge Hill University JOB = Student FAMILY = Two parents, lives in EHU's accommodation.</p>	<p>Goals:</p> <ul style="list-style-type: none"> • Starter: Wants to learn about businesses. Thinking of ways how to run his own business in the future. • Achievement: Feels bad about the third year. The studies are hard. Aims at studying more and building up some confidence. • Interactions: Very good at communicating with people. 	<p>We must:</p> <ul style="list-style-type: none"> • Make the process submitting process faster. • Make the menus easier to guide through. • Hide buttons that are not used usually in order to eliminate confusion. <p>Frustrations:</p> <ul style="list-style-type: none"> • Everything is confusing for him to find. • Submission process takes too long. • Menus have a lot of unwanted information. <p>Experience using Black Board: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> [Not good]</p> <p>Experience using Computer: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> [Excellent]</p> <p>Using laptop or desk top PC for Black Board: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> [Excellent]</p> <p>Using phone for Black Board: <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> [Average]</p>
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Figure 16: Cao H's persona.

On the figure above (figure 16), Cao's persona is portrayed. Cao is a third-year student, studying **Engineering**. He is feeling bad about the third year of studies, but he is anxious as well about the hardness of the modules. Cao wants many things to change. First of all, he wants the submission process to become faster, the menus to become easier to guide through and also hide the buttons that are not used that usually in order to eliminate confusion. Cao finds everything hard and confusing when it comes to use Black Board. The submission process takes too long for him, and the menus have a lot of unwanted information. His experience with using Black Board is **not good**, but his experience when using computers is **excellent**. He is always using laptop and PC for Black Board and **usually** from a phone.

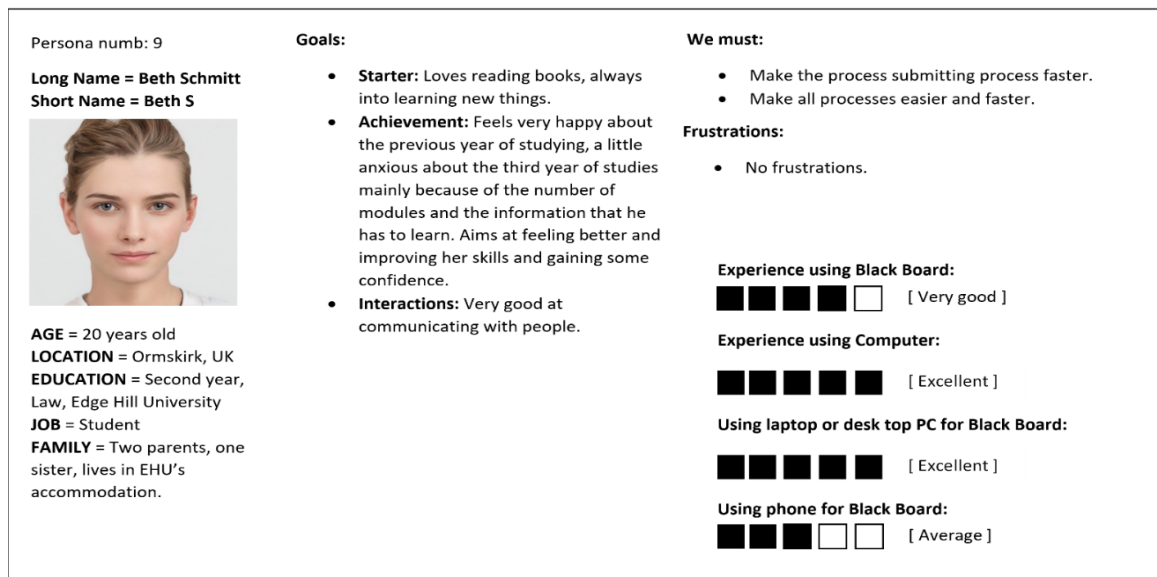


Figure 17: Beth S's persona.

On the figure above (figure 17), Beth's persona is given. Beth is a second-year student, studying **Law**. Beth's loves reading books and always learning new things. She is feeling happy about the previous years of studying but she is anxious about the following years. Beth just wants the submission process to become faster and make the general process of guidance easier, but she has no frustrations. Her experience with using Black Board is **very good**, and her experience when using computers is **excellent**. She is **always** using a laptop or a PC for Black Board and **usually** from a phone device.

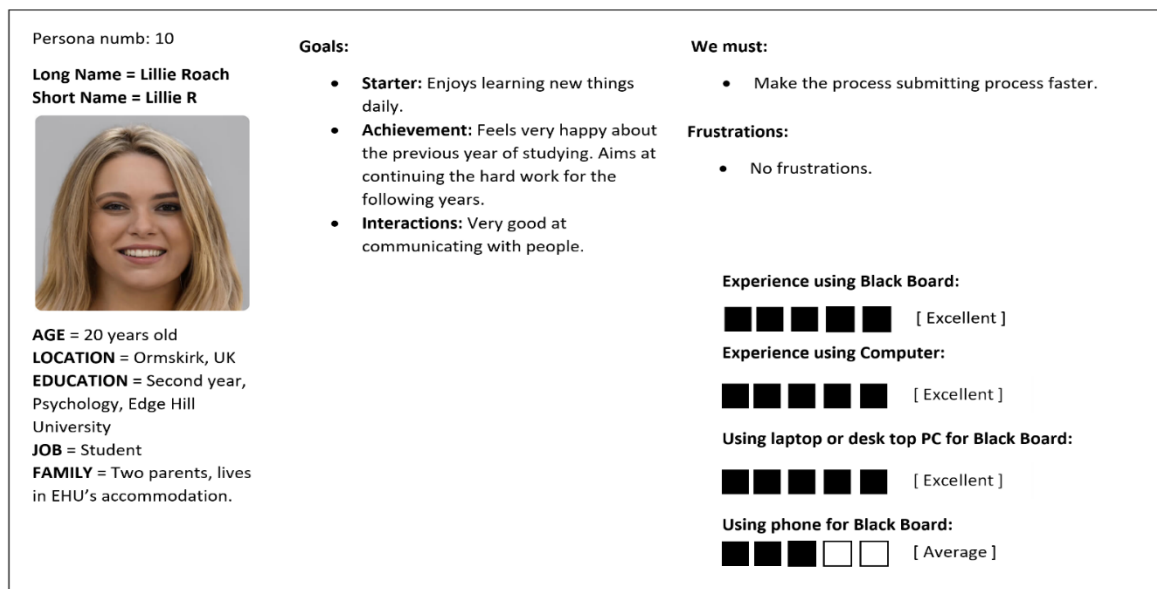


Figure 18: Lillie R's persona.

On the figure above (figure 18), Lillie's persona is given. Lilly is a second-year student, studying **Psychology**. Lillie loves learning new things. She is feeling happy about the previous years of studying. Lille just wants the submission process to become faster, but she has no frustrations. Her experience with using Black Board is **very good**, and her experience when using computers is **excellent**. She is **always** using a laptop or a PC for Black Board and **often** from a phone device.

4.0 Designing the new VLE system

When the personas are done it will be much easier for the designer to **empathise** with the users. It is much easier to observe at the data and understand exactly what the user needs. The designer can get in the shoes of the user and understand what the users frustrations are and try to solve them (Gibbons, 2019). The designer, discovering what the users' problems are, and defining what each user has problems with by analysing the questionnaires and creating personas, is time to go to the phase where he will have to put his ideas down and try to find a way that will please the most users. Then the designer will be able to deliver the new VLE to the audience. These steps belong to the Double Diamond process (Eissa, 2018). The designer is now in the create test and design phase of the double diamond.

Moving into the designing of the new Black Board VLE system, the designer has to brainstorm different ideas of how the new system will have a positive impact on the users (personas). Every persona had something that they wanted to change from the current system. These data should be collected from the designer and taken into consideration when he will be designing the new system.

The personas clearly depicted what they would like to change in the new VLE system. First of all, most personas would like the **general process of guidance through Black Board to become faster and quicker**. Moving on, all of the personas asked for the **submission process to become faster and easier**. Adding to that, the **menus should change as well** since many users asked for the menus to **become easier to guide through**. Finally, the unnecessary **buttons on the menu on the left-hand side of the current VLE system should be removed with the aim of making the process of finding a course and a module far more easier**.

4.1 Ideas for Mobile Screens, Tablets.

The designer decided that the appropriate way to do this is to try and find how the new system will look on a mobile device or a tablet. The reason is that all users use Black Board from a mobile phone usually or not. Adding to that, it will be easier for the designer to create a Desktop sit when he/she has already implemented the new design for a mobile phone or a tablet device.

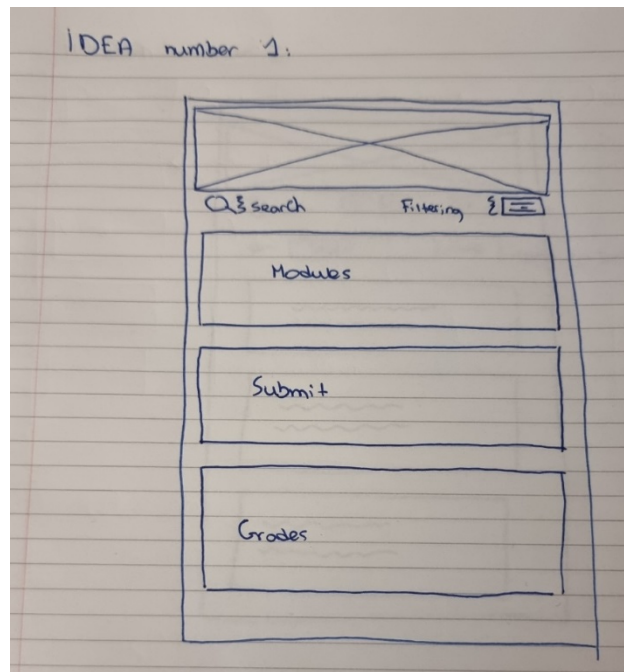


Figure 19: New system idea 1 for phone and tablet.

On the figure above (figure 19), the first mobile version idea for the new VLE system is given. At the top of the page there will be a small banner with the logo of Edge Hill University implemented in it. Under the banner, a **Search** icon is provided, through which the user can search for a module easily and fast. Moving on, next to the search icon, a **Filter** icon is provided, through which the user can filter through the academic years and find the information they want. Below these two icons, some text blocks are provided, that will give the user three options to choose from: **Modules, Submit and Grades**. When the user clicks on the buttons, the appropriate information about the user's modules, submissions or grades will be given to them. The reason behind giving Submit a section in the menu I because all users that have been questionnaire said that they want the submission process to become easier and faster.

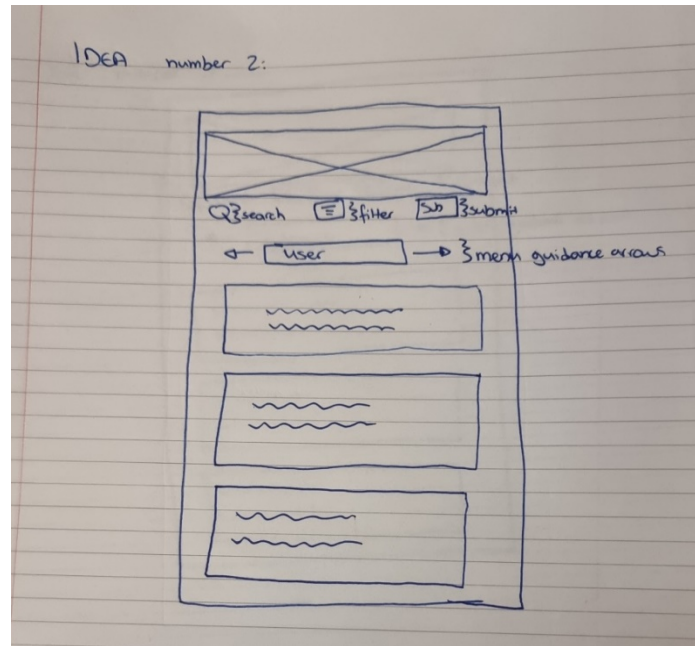


Figure 20: New system idea 2 for phone and tablet.

On the figure above (figure 20), the second, mobile version idea for the new VLE system is given. At the top of the page there will be a small banner with the logo of Edge Hill University implemented in it. Under the banner, a **Search** icon is provided, through which the user can search for a module easily and fast. Moving on, next to the search icon, a **Filter** icon is provided, through which the user can filter through the academic years and find the information they want. Unlike the previous idea, a **Submit** icon has been given as well at the top of the page to ensure that the submission will be faster and easier, as the users have asked for. Below these icons, an alternative for the menu has been introduced. The user can guide through the menu by clicking on the arrows (either left or right), where the title of the section will be provided into the centre block between the two arrows. In the three text blocks below this menu, appropriate information will be provided. The menu will consist of **User, Grades, Course and Calendar**. For example, if the user clicks the right arrow twice (starting from User), they will be guided to the **Course** option, where information about the user's course will be provided.

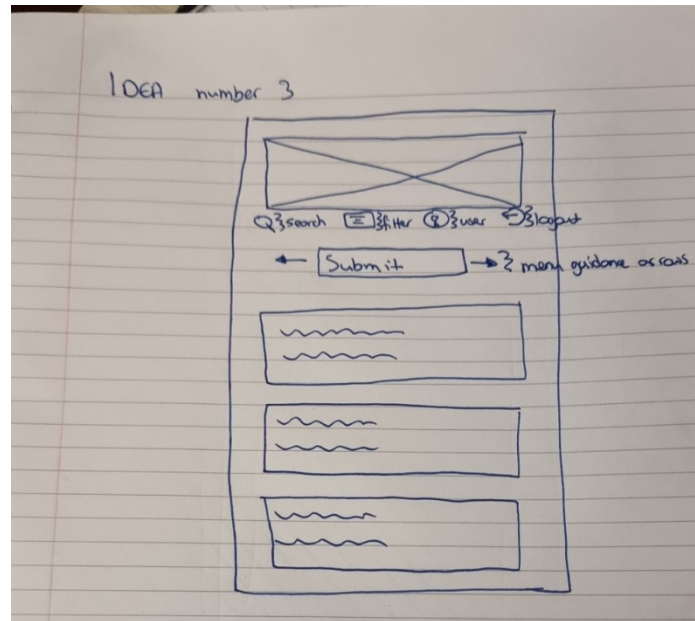


Figure 21: New system idea 3 for phone and tablet.

On the figure above (figure 21), the third, mobile version idea for the new VLE system is given. At the top of the page there will be a small banner with the logo of Edge Hill University implemented in it. Under the banner, a **Search** icon is provided, through which the user can search for a module easily and fast. Moving on, next to the search icon, a **Filter** icon is provided, through which the user can filter through the academic years and find the information they want. Unlike the previous idea, a **User** icon has been given where the user can find important information about their account. In addition, next that a **Log out** icon will be implemented that will let the user log out from the Black Board. Below these icons, an alternative for the menu has been used. The user can guide through the menu by clicking on the arrows (either left or right), where the title of the section will be provided into the centre block between the two arrows. In the three text blocks below this menu, appropriate information will be provided. The menu will consist of **Submit, Grades, Course and Calendar**. For example, if the user clicks the right arrow twice (starting from User), they will be guided to the **Course** option, where information about the user's course will be provided. The submit button is the first option in the menu since all the users who have been asked the questions said that they want the submission process to be faster and easier.

4.2 Ideas for Desktop screens, Laptops.

On the figures below, the different ideas that the developer has come up with are going to be depicted.

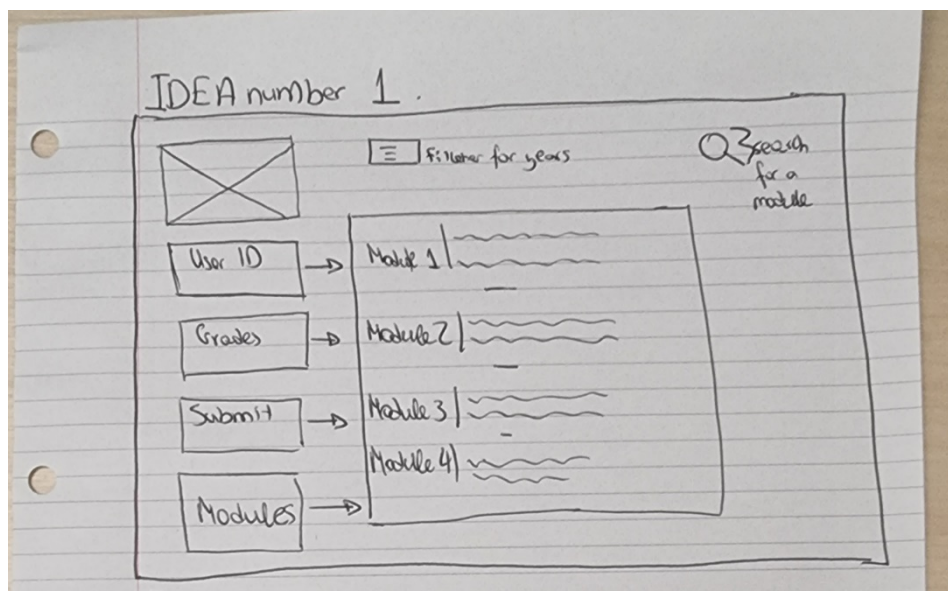


Figure 22: New system idea 1 for desktop and laptop.

On the figure above (figure 22), the first sketch idea about the new VLE system is shown. On the top of the page there will be a **filter** that is going to give the option to the user to choose between the academic years if they want to. Next to it – on the top right corner – there will be search button that will let the user search for a module without having to search for it. Moving on, on the menu below the logo, there will be four options: **User ID**, **Grades**, **Submit** and **Modules**. When a button from this menu is pressed, the appropriate information will be given to the user in the centre text block. As shown in figure 19, if the **Modules** button is pressed, then the text block in the centre will give the user information about the modules. If the **User ID** button was clicked, information about the user would be given. If the **Grades** button was pressed, then in the text block, information about the user's grades will be given. When the button **Submit** is clicked, then the user will be able to submit straight away their work for the appropriate module. Finally, if the **Module** button was to be clicked, then the user will be able to choose a module to guide through, in the text block in the centre of the page.

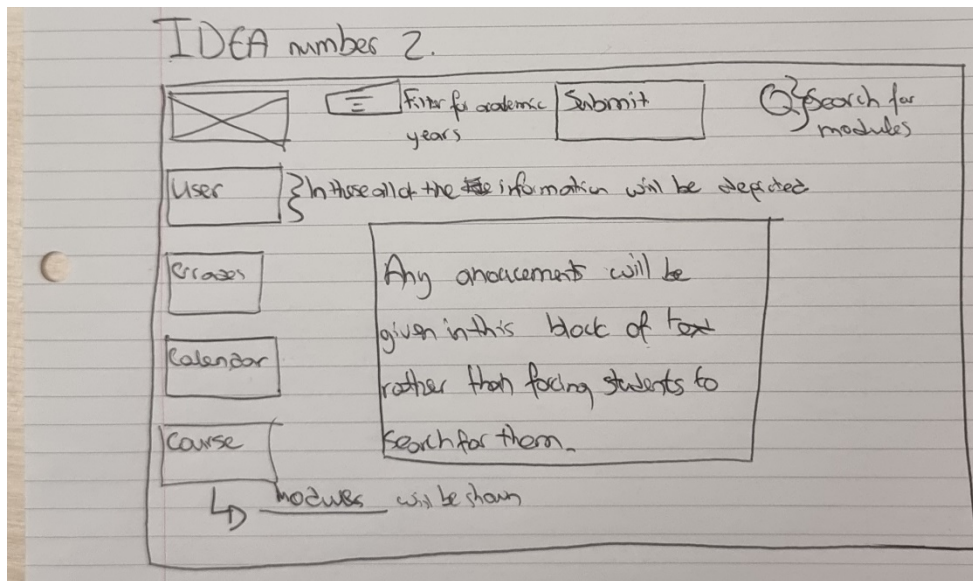


Figure 23: New system idea 2 for desktop and laptop.

On the figure above (figure 23), the second ruff idea about the new VLE system is shown. Like the first idea, the second one has the same **filtering** and **search** buttons at the top of the page. In this case though a **Submit** button is also given at the top of the page. When this button is pressed, the user will be able to submit their work straight away, similar to the first idea. The **User** and the **Grades** buttons on the menu on the left side of the page are also the same as the first idea, however two new buttons have replaced with **Submit and Modules, by Calendar and Course**. When the **Calendar** button is clicked, the calendar for the user will be given. When the **Course** button is pressed, information about the user's course will be given. For each button clicked, the information will be displayed into centre text block of the screen. When none of the buttons in the menu have been pressed, the centre text block will give the user all of the appropriate announcements concerning their course and their modules. These announcements will be what the lecturers and tutors want the student to know before the lesson or if anything changed to the upcoming lesson and how they can prepare.

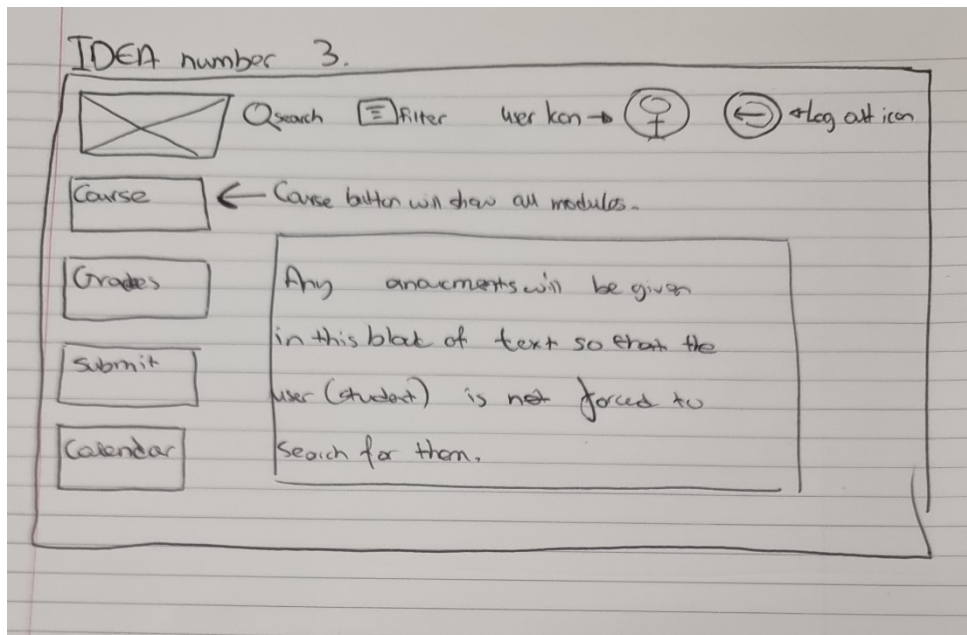


Figure 24: New system idea 3 for desktop and laptop.

On the figure above (figure 24), the third ruff idea is presented. A **search** button is placed on the top of the page where the user can search for all the information, regarding his course, they want. Next to the search button, a **Filter** button is provided where the user can filter through the academic years and find the information that they want. Moving on – at the top of the page – a **User** icon is given, where the user can click and find all the information about themselves and their course. Information about their course, modules and absences will be given. Finally, a **Log Out** icon is placed where the user can click it and then log out of the Black Board. The menu includes four buttons: **Course**, **Grades**, **Submit** and **Calendar**. When the **Course** button is pressed, information about the user is provided into the centre text block. The same stands for every other button in the menu. The **Submit** button is also provided from the menu, to ensure that students can submit their work easily and fast, since all ten users asked for the submission process to become faster and easier. Like the second idea, when none of the buttons have been pressed, the centre block will give provide the users with the appropriate announcements about their course and their modules. These announcements might consist of what the lecturers and tutors want the students to know before their lessons or whether there have been any changes with their upcoming lesson.

5.0 Designing the prototype of the new VLE system

5.1 Colours and Assets

The system designer chose one of the ideas above for the **desk top** version, since all users are always using a computer or a laptop for visiting the Black Board. An online application called “**Figma**” has been used in order to put the idea into a fully working prototype of the new VLE System. As aforementioned, the main problem that needs to be fixed is, to make the guidance process and submitting process easier.

The idea that the latter decided to focus on and create a working prototype based on it is desktop idea number 3 (figure 24). The first step to this process is to create **wireframes** of the original idea. Wireframing the idea is when the designer is swapping the sketch idea with the more realistic digital face. Wireframes should not show any more detail than what is necessary to be shown (Carlson, n.d.). By not showing any more detail than what is necessary, it helps the designer stay more in focused, by showing only what it needs to be fixed. Moreover, it helps the designers to focus on the structure, user flows and the possible solutions to the problem. Finally, it helps designers to create possible and familiar solutions (Carlson, n.d.).

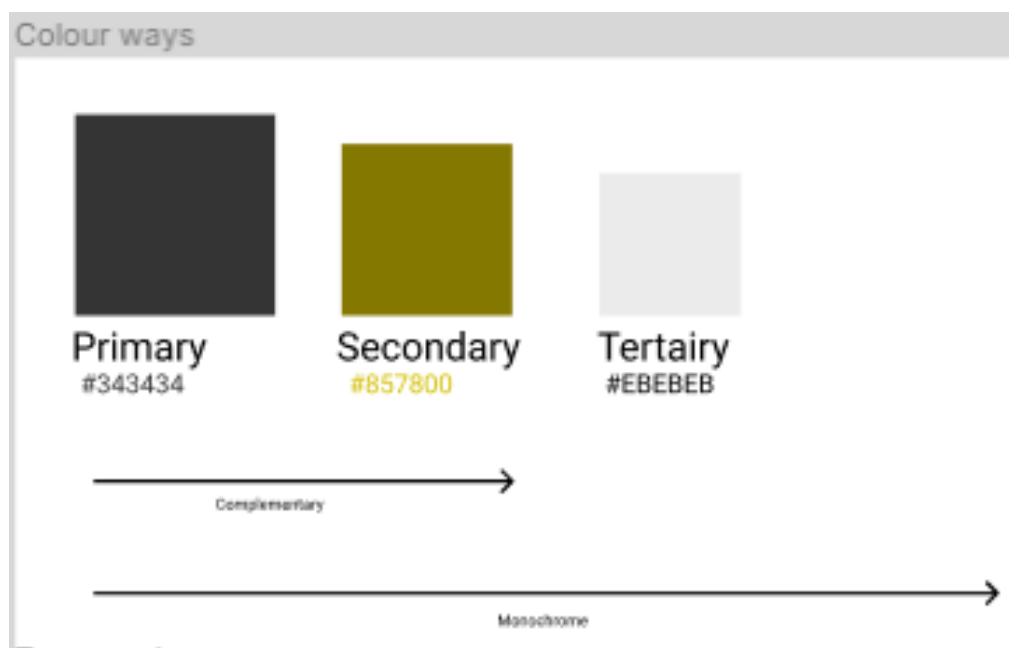


Figure 25: New System's colourways.

On the figure above, the colourways of the new system are portrayed. The primary colour of the system will be , the secondary colour will be very dark grey, the secondary colour will be olive town yellow, and the tertiary colour will be very light grey. These three colours can be seen throughout the new VLE system.

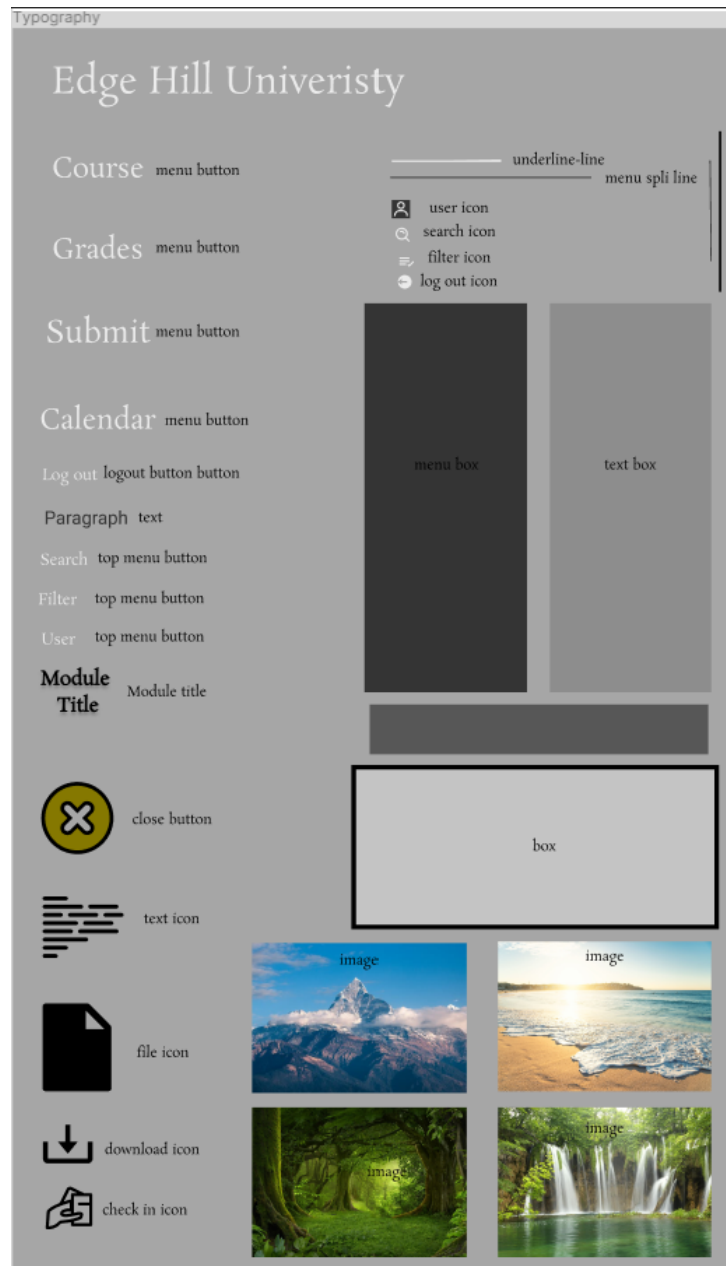


Figure 26: New system's typography.

On the figure above, the new VLE system's typography is presented. Everything that is in the **typography** page has been made into an asset which made the whole process much easier since the designer can then drag and drop them throughout the whole system. The fonts and text colours for **Logos, menu boxes, and the icons** are found in this page. Adding to that the images used for every module have also been made into an asset in order to place them around the page by dragging and dropping. The **boxes** for the menu and the **text boxes** have also been made into an asset through the typography page.

5.2 Wireframes

The figures below are the wireframes for the new VLE system.

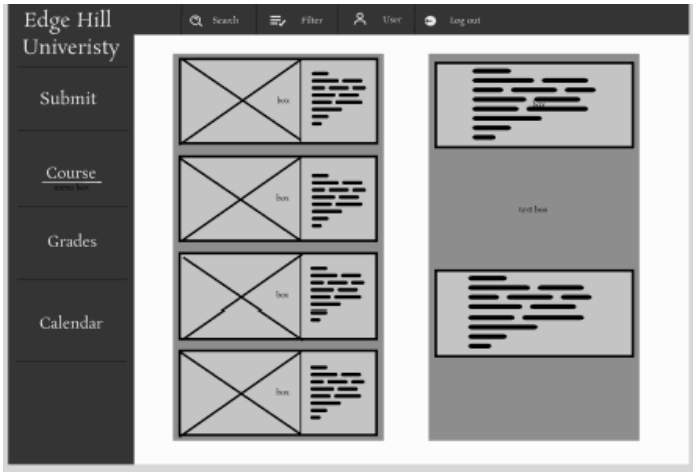


Figure 27: First page wireframe.

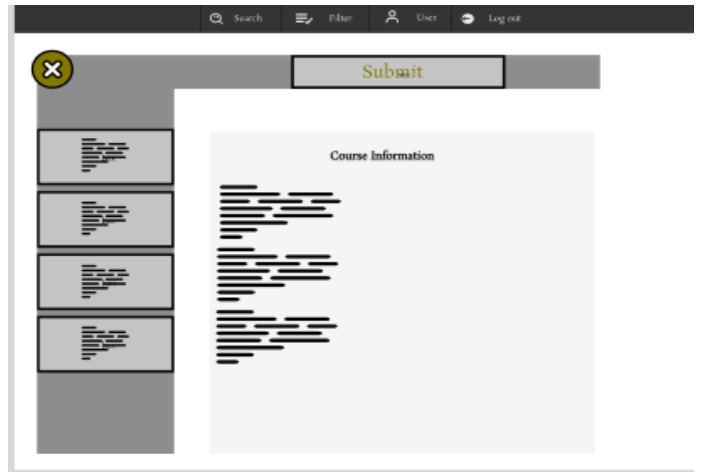


Figure 28: Submit from menu tab wireframe.

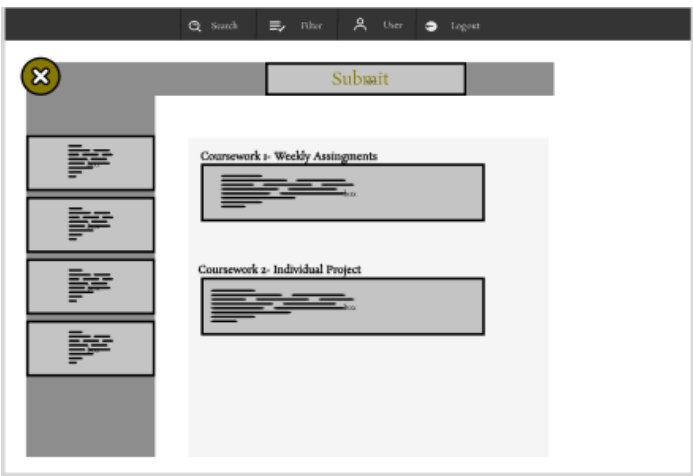


Figure 29: Assessment tab wireframe.

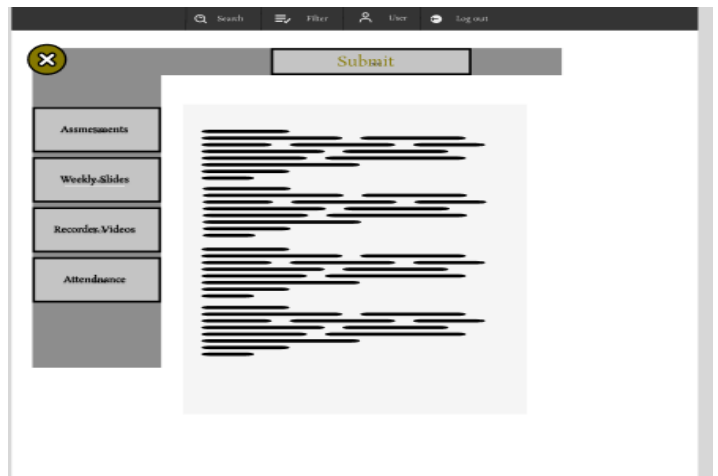


Figure 30: Weekly slides tab wireframe.

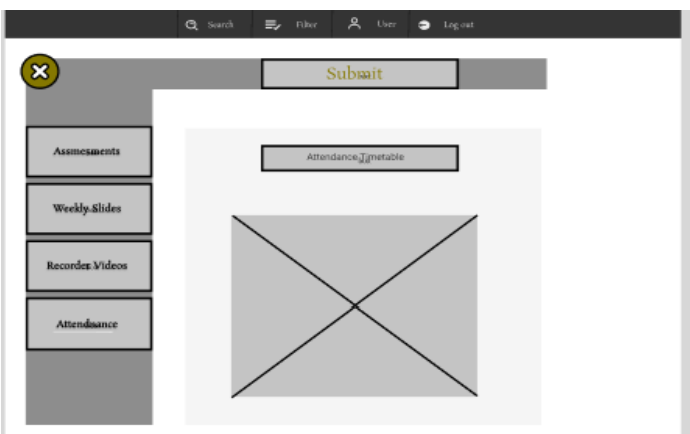


Figure 32: Attendance tab wireframe.

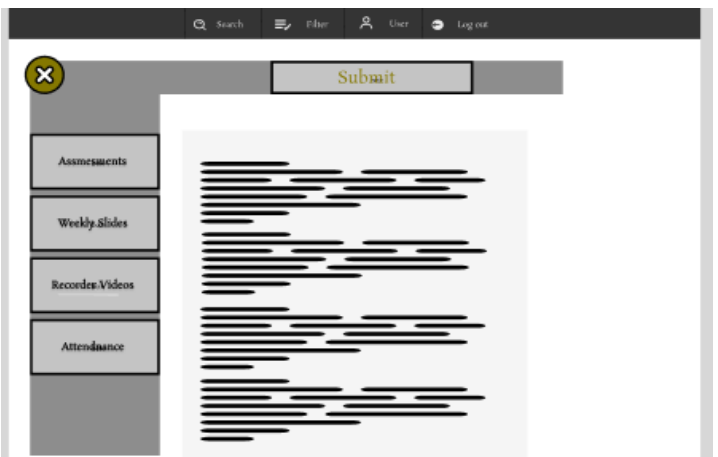


Figure 31: Recorded videos tab wireframe.

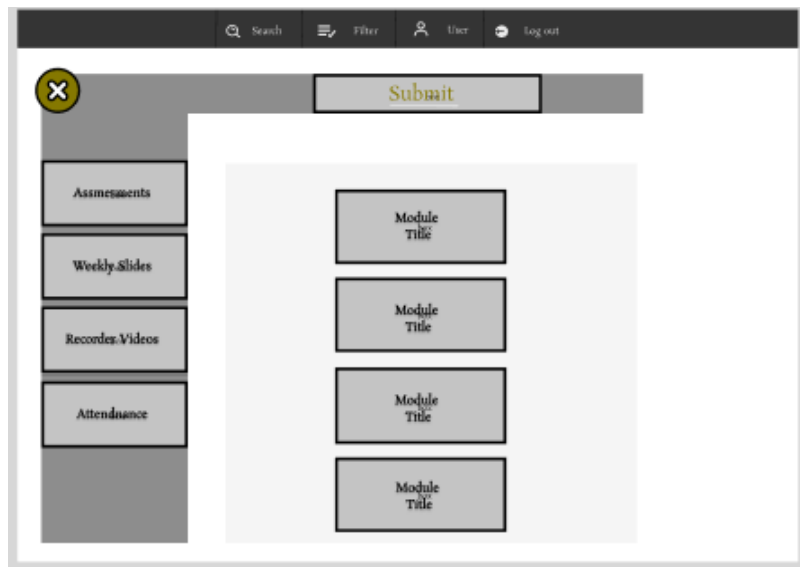


Figure 33: Submit button wireframe.



Figure 34: All tabs wireframes.

All of the figures above are showing the wireframes for all pages in the new VLE system. More detailed pages with actual text and links between them will be now created trying to improve the problems that have been discovered in the current VLE system.

5.3 New VLE system prototype

In this section, the process with which a wireframe is turned into an actual working page with links to other pages and flows will be explained. Moreover, the designers methods of working and tactics will be explained as well. For this prototype the only two menu buttons that have been given links for other pages are the Submit and the Course buttons.

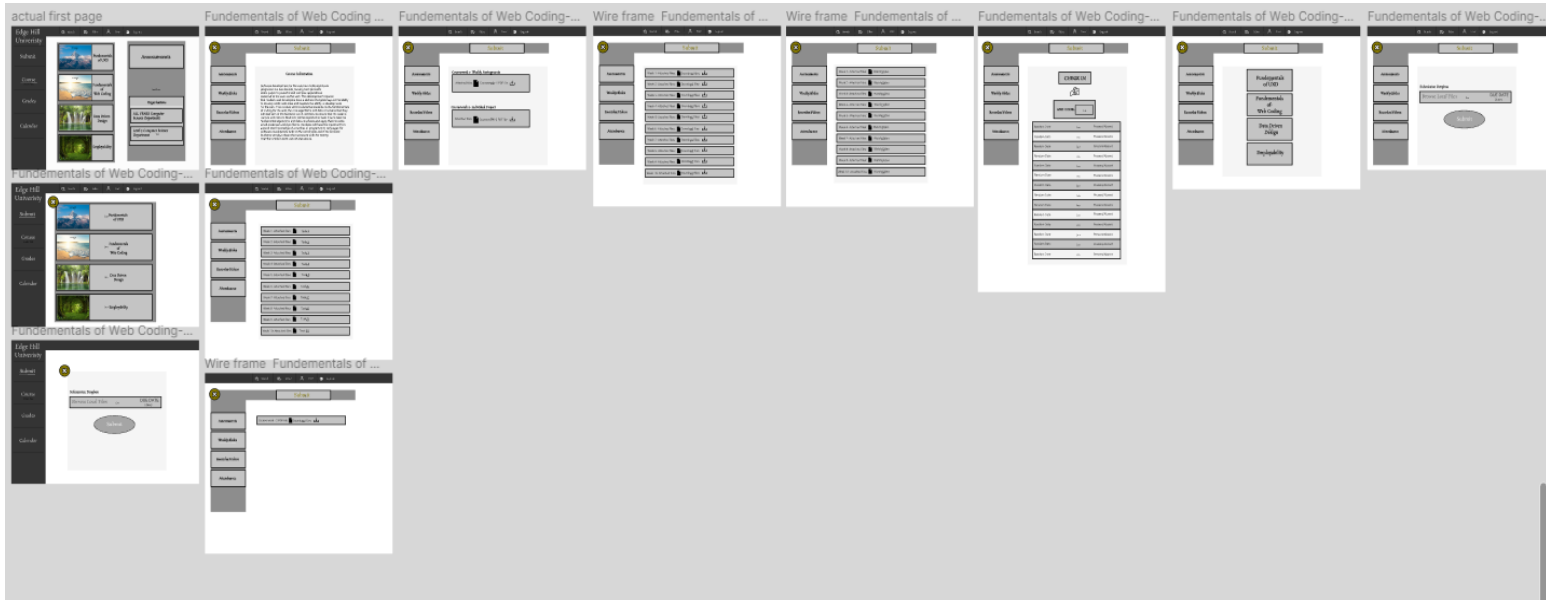


Figure 35: All of systems pages.

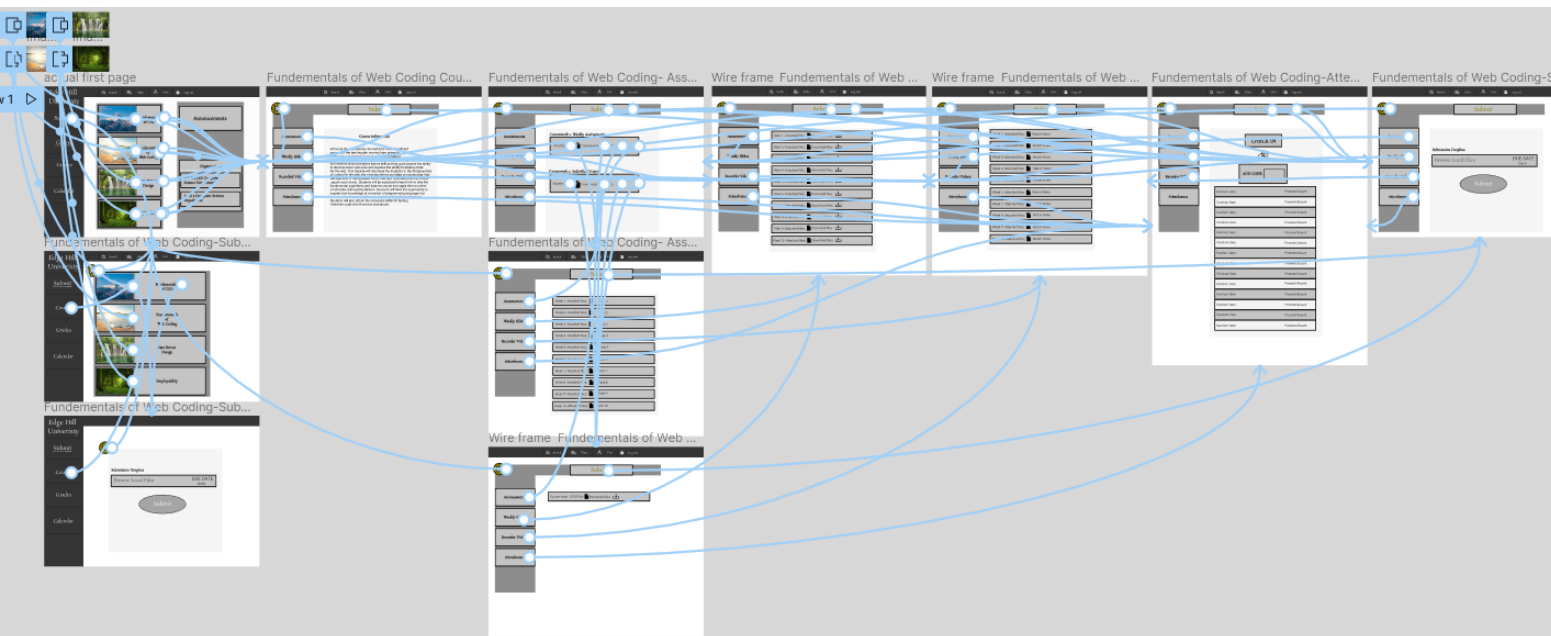


Figure 36: All pages along with the links that connect them.

On the figures above (figures 35 and 36), the overall look of the final pages of the new VLE system along with their links between them are presented.

In the first page of the new VLE system there are four menu buttons. These buttons are the **Submit button, the Course button, the Grades button and the Calendar button**. When the user will open the VLE system page, the first open page will be the course since it is the most used tab in a system like this one.

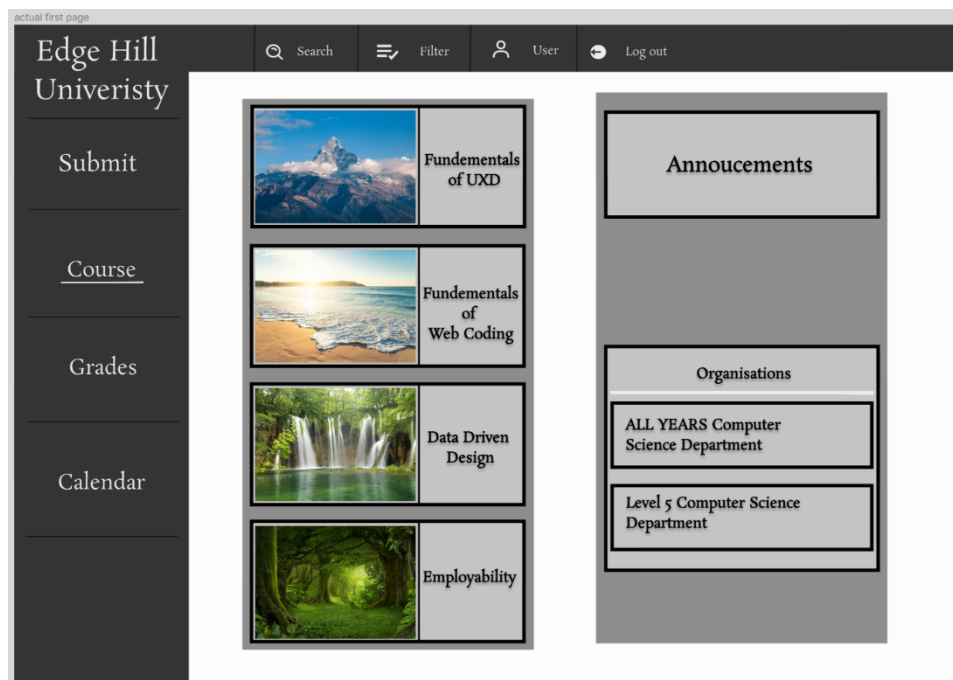


Figure 37: First page.

On the figure above the first page of the new system is shown. As aforementioned the four buttons on the side menu are **Submit, Course, Grades, and Calendar**. When the page is firstly opened it will automatically open in the course tab since it is the most common used between the students. In the two centre text blocks, the user's **modules, announcements and organisations are placed**. The colours that the designer used are not over the top since, the main goal is to keep everything clean and tidy in order for the user to focus easier when guiding through it. When the user clicks on any of the modules, he/she will be automatically taken into the next page. On the menu found at the top of the page, there are four buttons. These buttons are the **search button, the filter button, the user button and the log out button**. When the user clicks on the search button, he/she can search a module. The filter button lets the user filter through the academic years. When the user button is clicked, important information will be given to the user about their grades, modules and assessments.

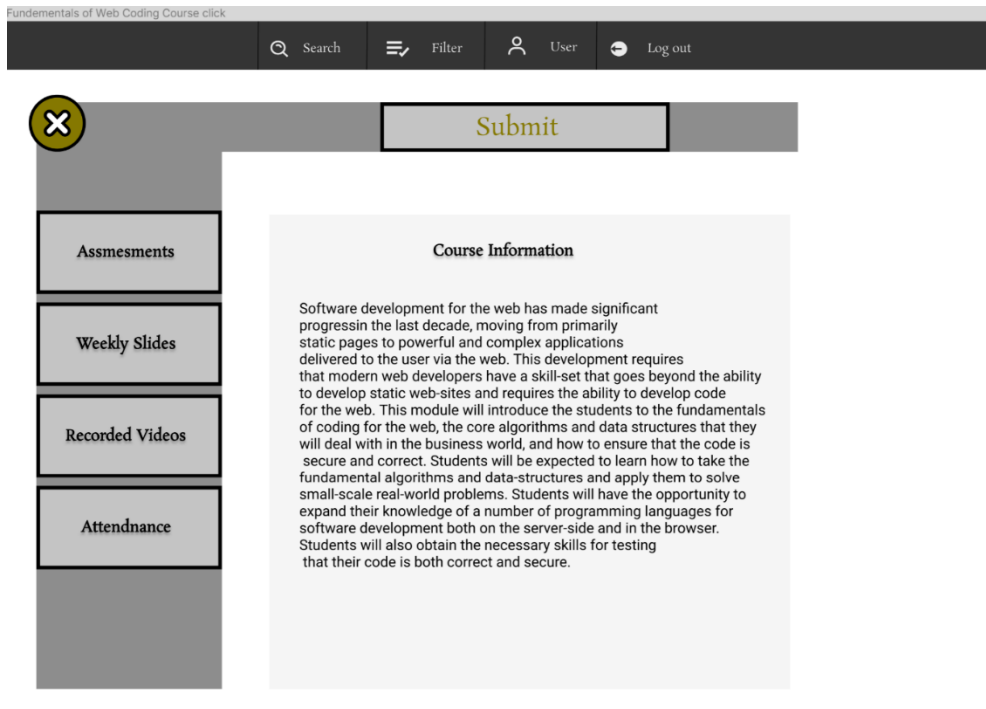


Figure 38: The page when a module is selected.

When the user clicks on any module, he/she will be automatically taken to the page shown on figure 38. This page has a side menu with four buttons. These buttons are **Assesments**, **Weekly Slides**, **Recorded Videos** and **Attendance**. Moreover, there is a huge **Submit** button on the top of this page where the student can submit right away – **which is one of the problems that should be fixed**. When none of the buttons are pressed, the centre text block will show the course information where the user might read something useful. When the “X” icon on the top left is clicked, the user will be automatically taken to the first page.

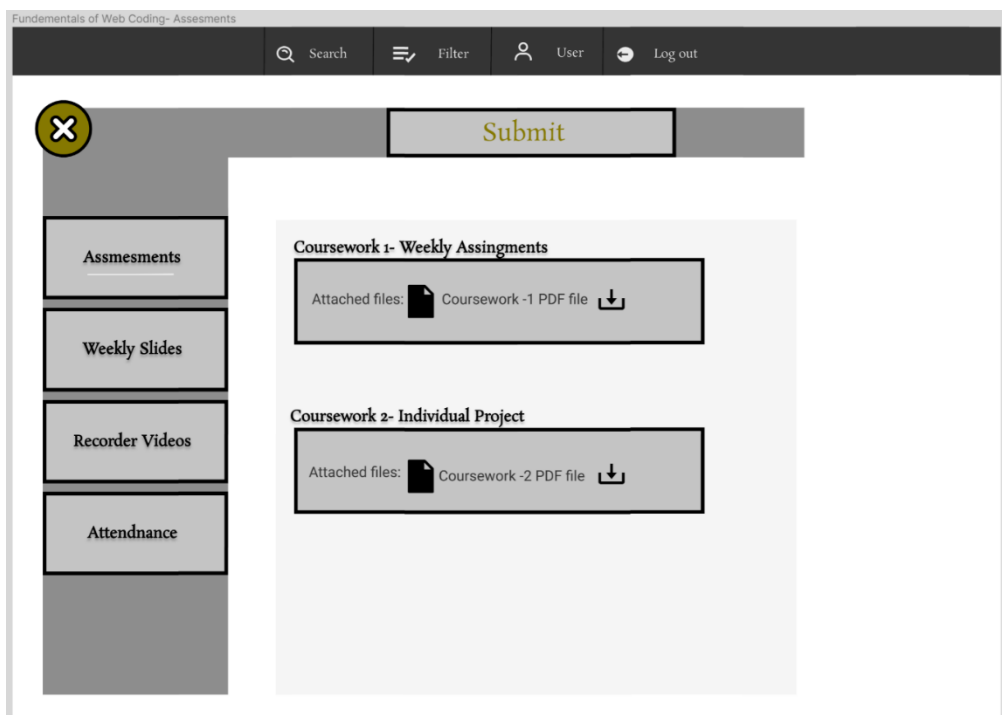


Figure 39: Assessment tab page.

When the user clicks on the Assessment button, they will be automatically taken to the assessment page where they can find their weekly assessments or download the files for their individual project for coursework 2. Additionally, when the assessment button is clicked, it is expected that a white line will underline the box Assessment letting the user know on which tab they are in. Each box in the centre text box has a link to a designated page.

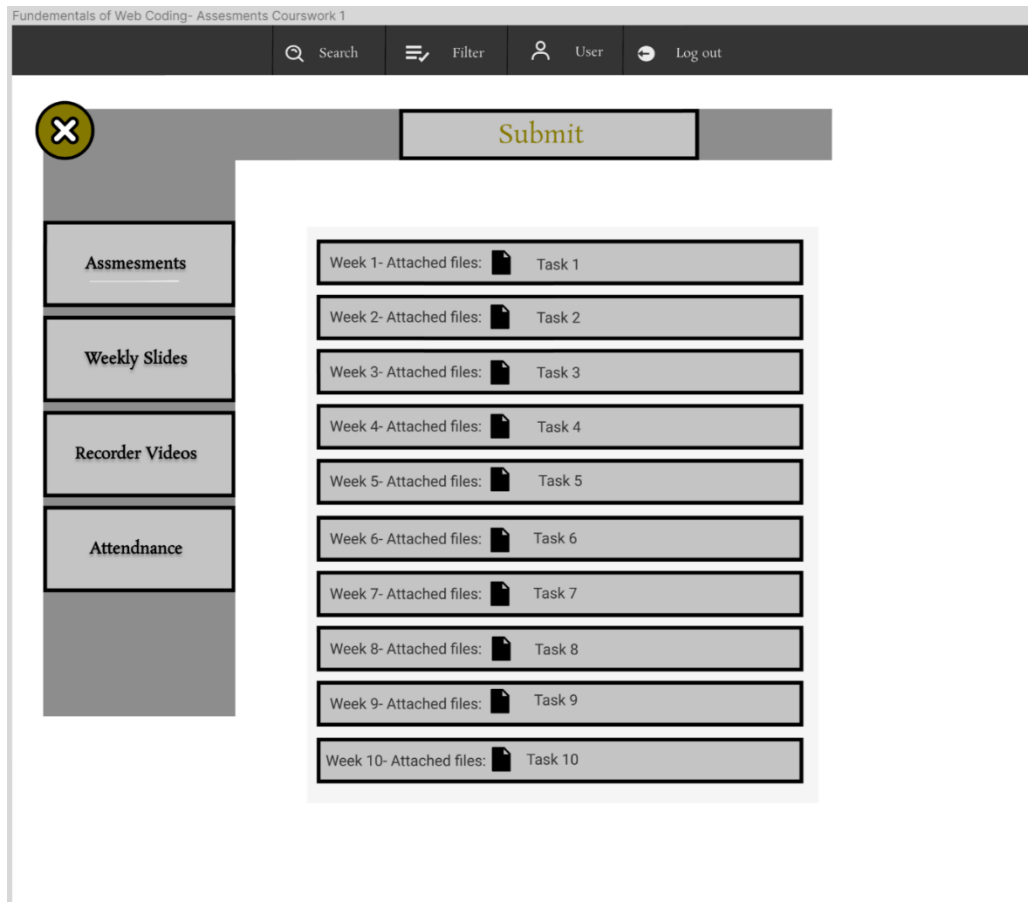


Figure 40: Coursework 1 page.

When the user click on the first box in the centre block of Assessments page, they will be taken to the page shown on figure 40, where they will be able to see their weekly tasks and also download any files that might come along with each weekly assessment.

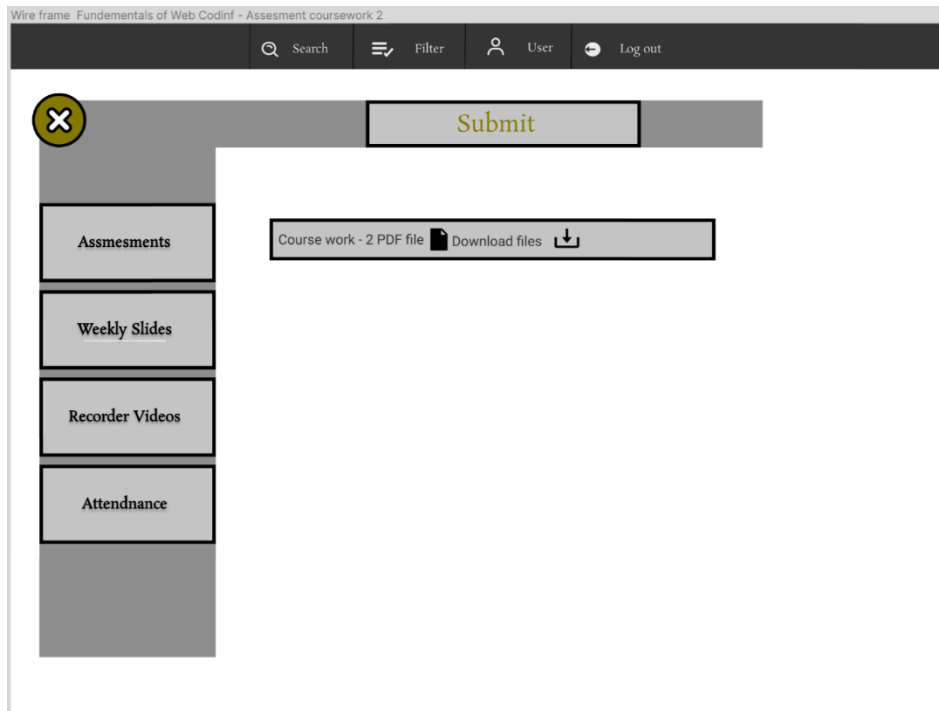


Figure 41: Coursework 2 page.

When the user clicks on the second box of the centre block in the assessments page, they will be taken into the page shown on figure 41. In this page the user can read the coursework's files and also download the files if there are any to be downloaded.

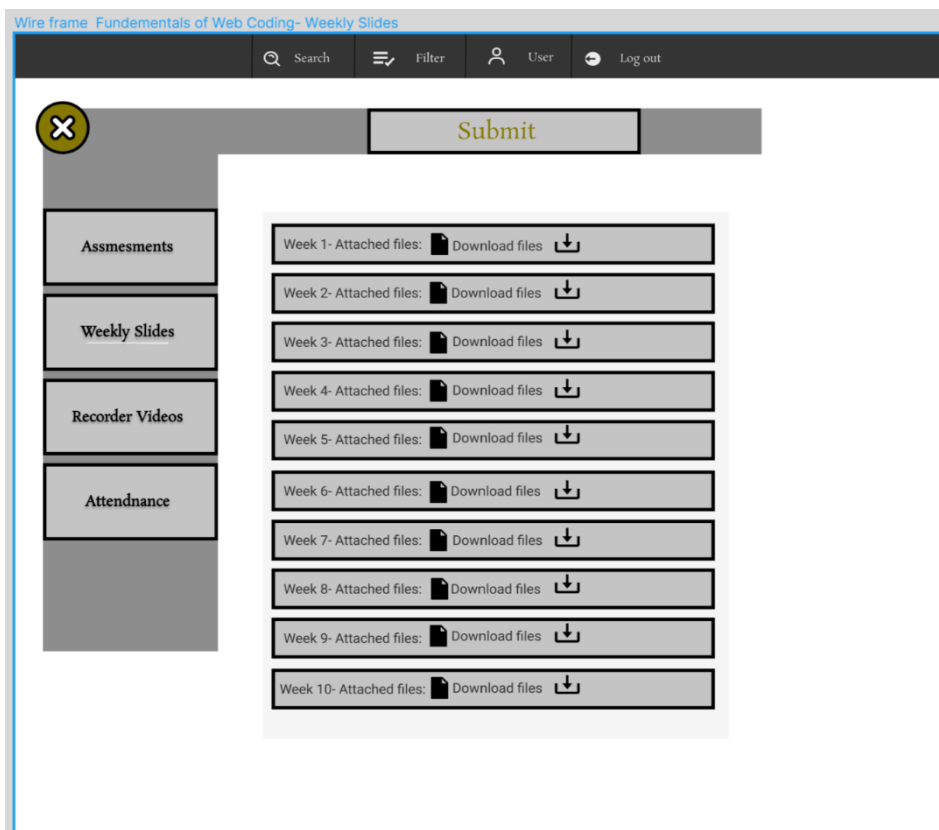


Figure 42: Weekly slides page.

When the user clicks on the Weekly slides button, they will be taken to the weekly slides page as shown on figure 42. From this page, the user can go through the slides that their lecturers have given them. Additionally, the user can download the slides if there are any slides to be downloaded. Again, a white line is expected to underline the weekly slides button, letting the user know in which tab they are in.

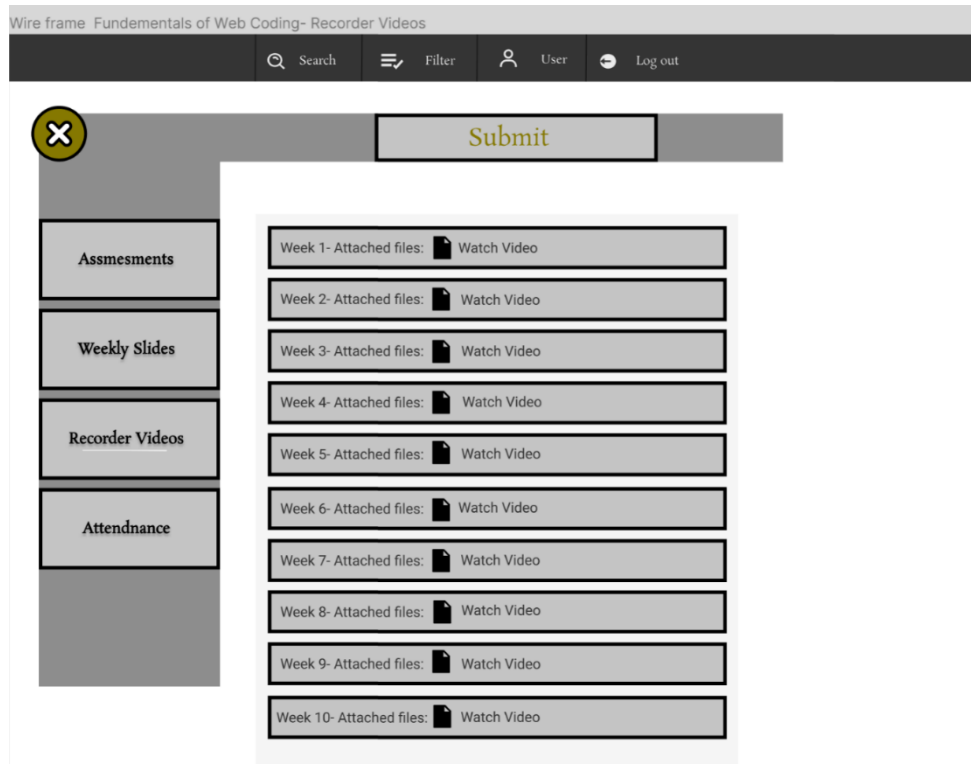


Figure 43: Recorded Videos page.

When the user clicks on the Recorded videos button, they will be taken to the Recorded videos page as shown on figure 43. From this page, the user can go through the videos that their lecturers have given them. Again, a white line is expected to underline the Recorded videos button, letting the user know in which tab they are in.

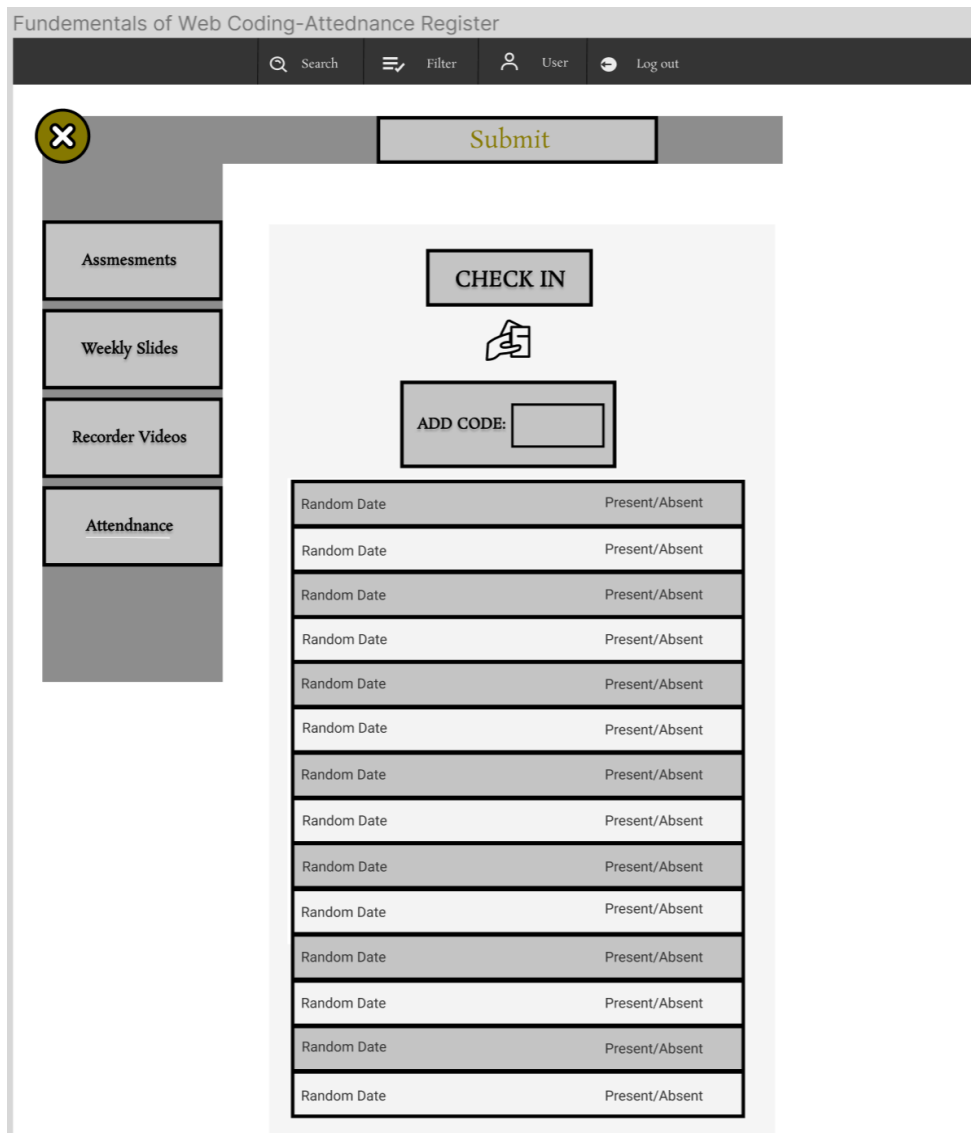


Figure 44: Attendance register page.

When the user clicks on the Attendance button, they will be taken to this page where they can mark their register, as seen on the figure above. Once again, a white line is expected to underline the Attendance button, letting the user know in which tab they are in.

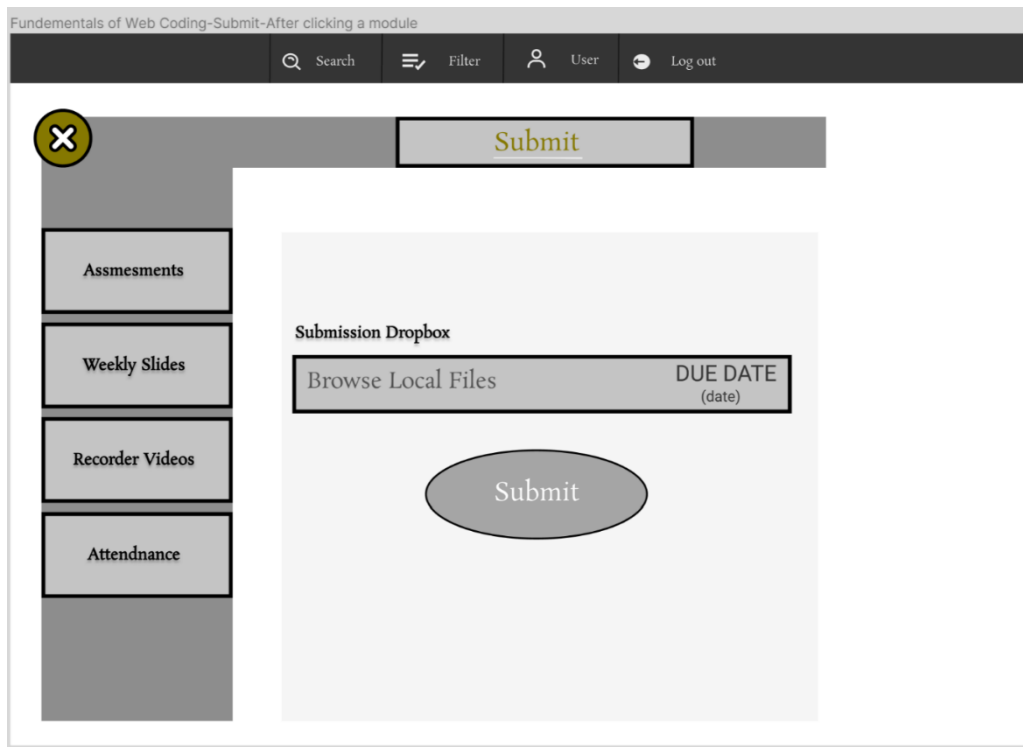


Figure 45: Submit page.

When the user selects a module and then clicks on the big Submit button on the top of the page as seen on figure 45, he/she will be taken into the page portrayed on the figure above. The user will see the upcoming task's due date, and he/she will be able to browse their local files, find the appropriate file and then click on the circular submit button below the box in the centre text block. As aforementioned, this new method of submitting has been altered to this way, hoping that the submission process faster and easier for the students, as many students had a problem with how long the process of submitting took.

In the first page, there is a button on the side menu called Submit. When the user clicks on that button, the latter is taken to a different submit page where the user can select a module and submit straight away from there.

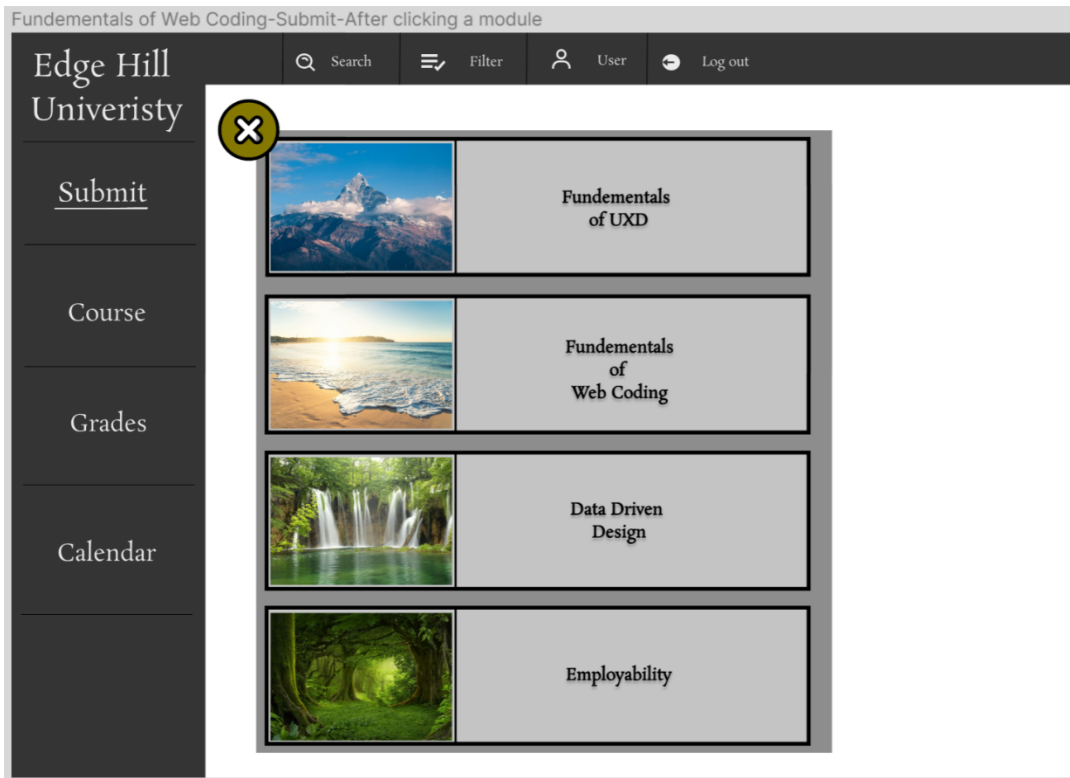


Figure 46: Submit by clicking on the menu.

When the user clicks on that submit button on the left-hand side menu, he/she will be taken into the page shown on figure 46, where the latter can choose a module to submit for. When a module selection has been made, the user will be taken to a submit page similar to the one on the figure 45 where the upcoming due task is given and a big circular button which when it is pressed the submission goes through the system. This page can be seen below on figure 47.

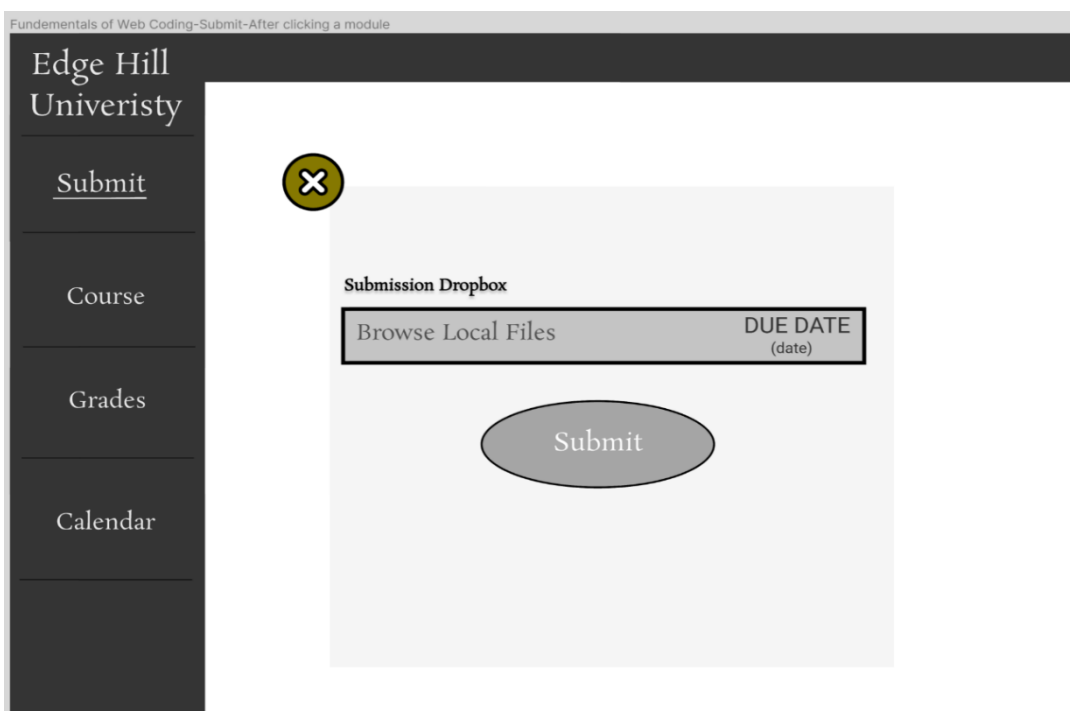


Figure 47: Submit page (last step).

On the figures above, the whole walkthrough of the new VLE's pages has been made. The designer has focused mainly on making the submission process faster for the students. Additionally, the designer made the system look simpler than what the current VLE system looks like, by trying to ensure that the users will stay focused when guiding through it ensuring that the confusion made to the users is eliminated or minimized.

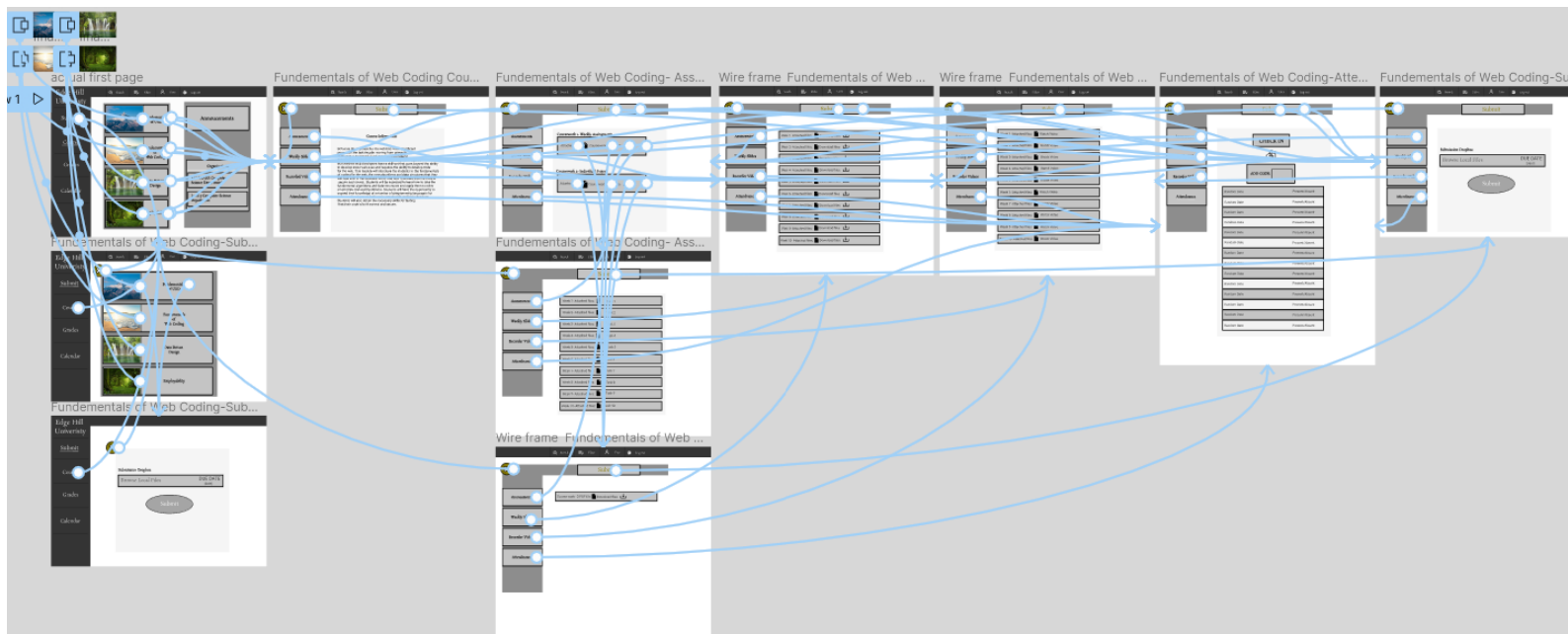


Figure 48: Links between the pages.

On the figure above (figure 48), the way the pages are linked between them is shown. The **Submit** button on the first page is linked with the page on figure 46 where the module boxes are linked to the page on figure 47. The designer's idea is that when the user clicks on the submit menu button, they will be taken to the page where they will select their module, and when the module is selected, the latter will be taken to the final submit stage. The **module** boxes in the centre block of the first page are linked to the page on figure 38 where each button (**Assessments, Weekly Slides, Recorded Videos, Attendance, and Submit**) is linked to its own specific page. The **Assessments** button is linked to the page on figure 39 where the two centre boxes with the assessments of coursework 1 and coursework 2 are linked to the pages 40 and 41 accordingly. The **Weekly slides** button is linked to the page on figure 42 where the user can see and download the weekly slides. The **Recorder videos** button is linked to the page on figure 43 where the user can watch the recorded videos that their lecturers have inputted in the Black Board. The **Attendance** button is linked with the page on figure 44 where the user can mark their attendance. Finally, the **Submit** button on the top of the page (after the user has clicked on courses in the first page) is linked to the page on figure 45 where the user can submit their work.

6.0 Testing

Before showing the prototype of the new VLE system to people and interviewing them, the designer should do some test to ensure that human errors are eliminated. Moreover, when accurate tests have been made to the site's design all of the elements that are not working the way they should be addressed quickly achieving a fully working site with no errors (Cornwall, 2017).

The table below will display the various tests that the designer has done before showing the system to an audience.

Test taken	Affordances	Feedback	Did it work?
Hover over Fundamentals of UXD image.	A drop shadow is expected on the image.	A drop shadow appeared on the image.	Yes.
Hover over Fundamentals of Web Coding image .	A drop shadow is expected on the image.	A drop shadow appeared on the image.	Yes.
Hover over Data driven design image.	A drop shadow is expected on the image.	A drop shadow appeared on the image.	Yes.
Hover over employability image.	A drop shadow is expected on the image.	A drop shadow appeared on the image.	Yes.
Guide through Course page to submit page by clicking the submit button on the left side menu.	A navigation from the course page to the submit page.	A navigation from course page to submit page occurred.	Yes.
Click on Fundamentals of UXD image.	A navigation from course page to module page.	A navigation from course page to module page occurred.	Yes.
Click on Fundamentals of Web Coding image .	A navigation from course page to module page.	A navigation from course page to module page occurred.	Yes.
Click on Data driven design image.	A navigation from course page to module page.	A navigation from course page to module page occurred.	Yes.
Click on employability image.	A navigation from course page to module page.	A navigation from course page to module page occurred.	Yes.
Currently in the Assessment tab and click on Submit on top of page.	A navigation from assessments page to submit page.	A navigation from assessments page to submit page occurred.	Yes.

Currently in the Submit page and click on Weekly slides.	A navigation from submit page to weekly slides page.	A navigation from submit page to weekly slides page occurred.	Yes
Currently in the Weekly Slides page and click on Attendance tab.	A navigation from Weekly Slides page to Attendance page.	A navigation from Weekly Slides page to Attendance page occurred.	Yes.
Currently in the Attendance page and click on Recorded videos tab.	A navigation from Attendance page to Recorded Videos page.	A navigation from Attendance page to Recorded Videos page occurred.	Yes.
Currently on Submit page(from first page) and click on the Courses form the left side menu.	A navigation form Submit page to Courses page.	A navigation form Submit page to Courses page occurred.	Yes.
Currently on Submit page(from first page) and click on the "X" icon.	A navigation form Submit page to Courses page.	A navigation form Submit page to Courses page occurred.	Yes.
Currently in the Weekly Slides page and click on "X" icon.	A navigation from Weekly Slides page to Courses page.	A navigation from Weekly Slides page to Courses page occurred.	Yes.
Currently in the Assessment tab and click on "X" icon.	A navigation from Assessments page to Courses page.	A navigation from Assessments page to Courses page occurred.	Yes.
Currently on the Assessment tab and click on coursework 1 box.	A navigation from Assessments page to coursework 1 page.	A navigation from Assessments page to coursework 1 page occurred.	Yes.

Figure 49: Testing table.

The figure above (figure 49), is showing all the tests that have been done in order to check whether all of the site's elements are working the way it should. The last column of the table shows if the test worked the way it should. Every answer in this column is "Yes" which means that all of the elements are working properly. The next step is to give the site to some people and ask them to go through the site where they will guide through the page thinking out loud, which will show if the new VLE system is **indeed** easier to guide through, **cleared** to guide through and finally to check whether the **submitting process is faster and easier**.

6.1 Useberry testing

Another way to test the prototype is by using an application called **Useberry**. Through this online application someone can send their prototype to various people aiming to get some results back which will show different important information about the application or the website that the latter has designed. Information like heat maps, or the most common paths that the users have used to guide through the website will be automatically generated by the application. Moreover, various charts will be created showing an overall score of the webpage regarding the way the users have used it. In the section below, various screenshots will be given along with an explanation about them.

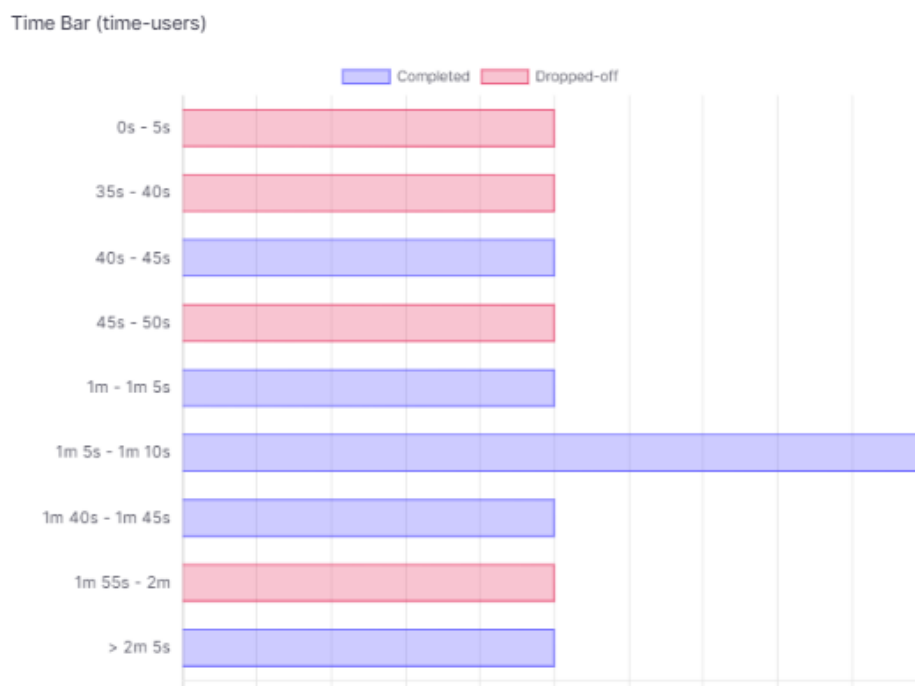


Figure 50: Users bar chart.

On the figure above you can see that the test has been sent out to ten people where everyone spend some time doing the tasks annotated by the tester. All of the tests have been made anonymously. The people who were asked to complete this tasks, were sent a link that when they visited it, the test automatically began. As you can see on the figure above 4 users have dropped off the test, some of those between the first 5 seconds, some between 35 and 40 seconds, some between 45 and 50 seconds and some dropped off at almost 2 minutes. Six users though managed to finish the tasks where the maximum time it took someone to complete the tasks was 2 minutes and 5 seconds.

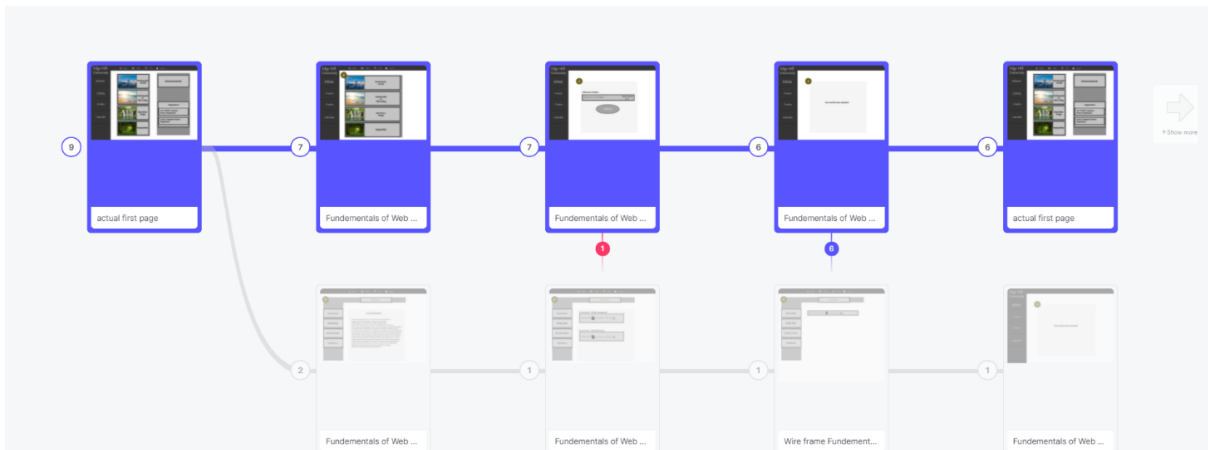


Figure 51: User flow path.

On the figure above, the most common user flow is provided. In other words, it is showing the path that most users chose to follow in order to finish the tasks from **Submitting for any module, to finding the coursework 2 PDF files for any module**. The flow path shown on the figure above is about the first task which was to find a module and submit for it. Most users selected the **Submit** button on the menu on the left-hand side as expected and then chose a module when the new page appeared on their screens and then submitted again as expected. Some other users selected a module first and then submitted which is another accepted way but a bit more time consuming than the expected way.

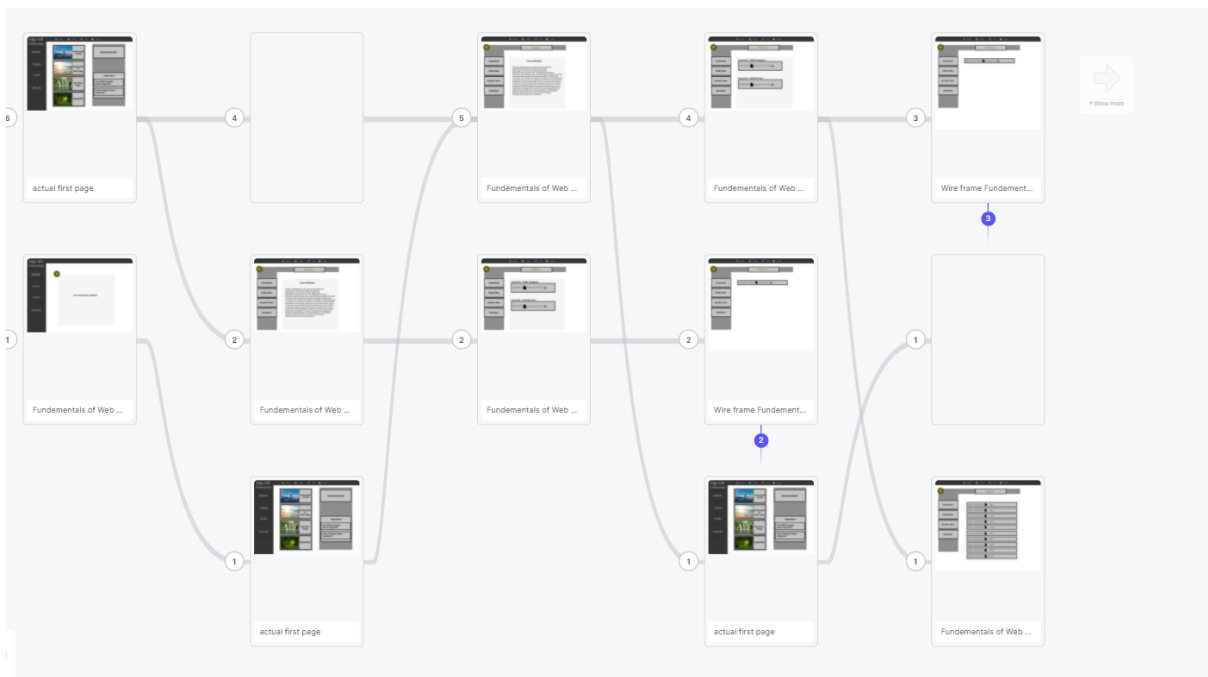


Figure 522: User flow path for task 2.

The flow path shown on the figure above (figure 52) is about the second task which was to the coursework 2 PDF files for any module. Most users selected a module and then clicked on **“Assessments”** and then clicked on the **“coursework 2 Individual Project”** files in order to download the coursework 2 pdf files as expected.

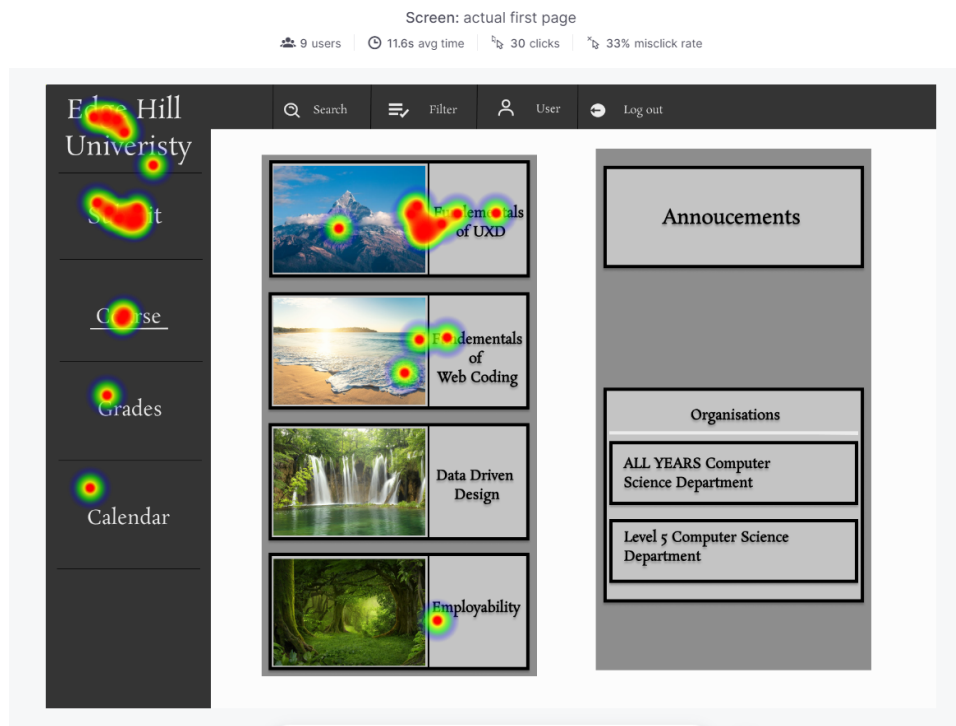


Figure 53: Heat map for first page.

On the figure above, the heat map for the first task is provided. The users were asked to submit for any module they want. There is a 33 percent of miss clicks, where most users clicked on the expected areas which are the “Submit” button on the left-hand side of the menu and also at the modules in the centre box which is again a correct path to submit something. Some users maybe clicked on the calendar or the grades just to see if they could guide through those pages or not.

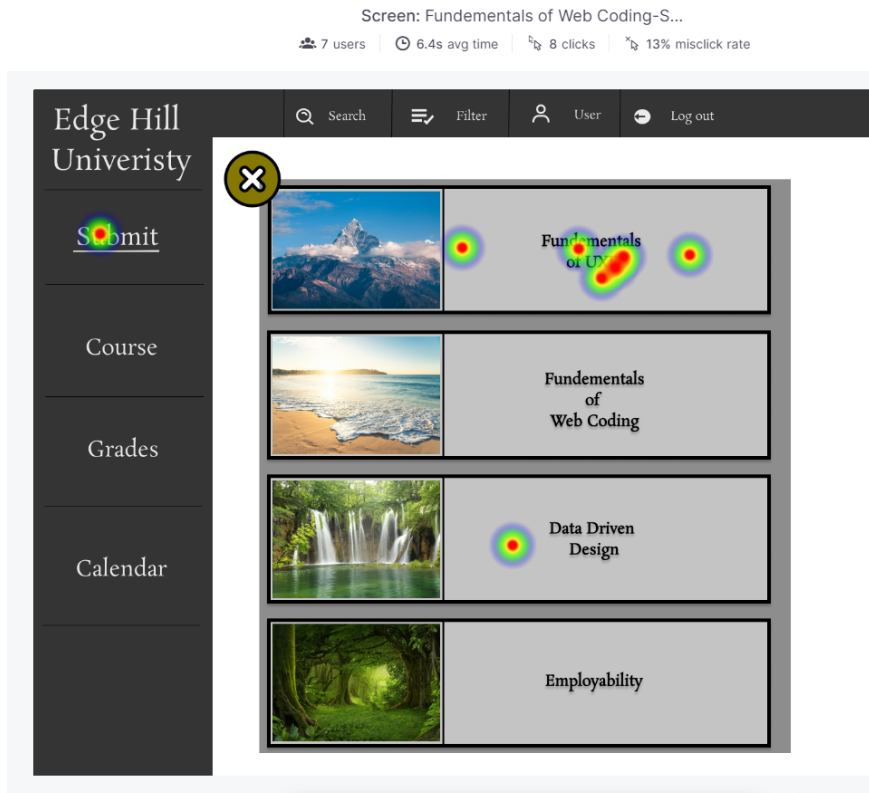


Figure 54: Heat map for submitting page.

On the figure above the heat map for the submission's first page is provided. In this page the users were expected to click on a module and then submit. There is a 13 percent of miss clicks on this page where most users clicked on the expected links which are the boxes containing the modules.

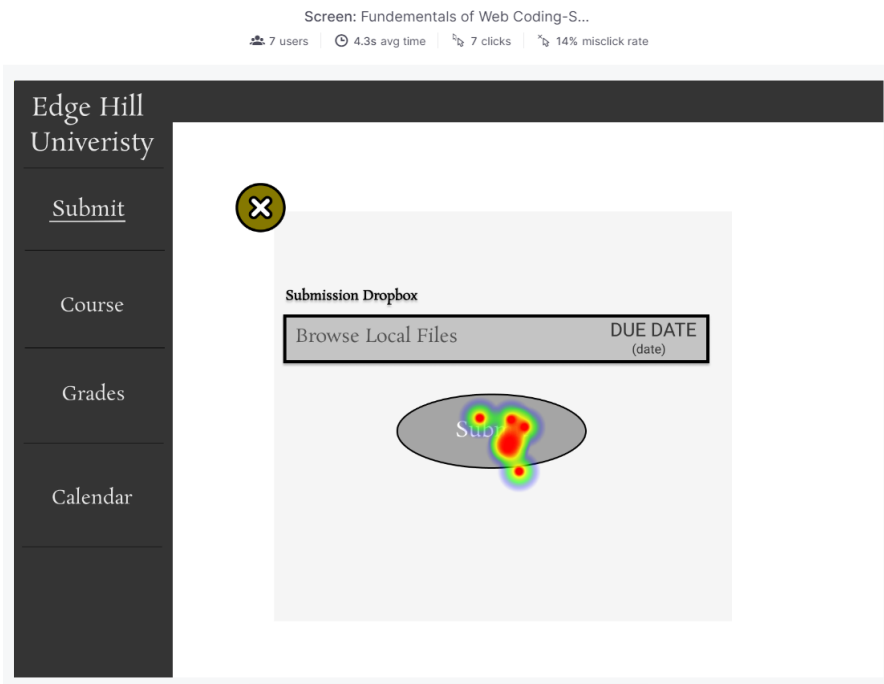


Figure 55: Heat map for submitting page(last step).

On the figure above the heat map for the submission's last page is provided. In this page the users were expected to click on the circular "Submit" button to finish the task. There is a 14 percent of miss clicks on this page where most users clicked on the expected link which is the submit button. The miss clicks might be from some users who clicked just outside the button, because there are no clicks on the screen, that are away from the expected link which is the submit button.

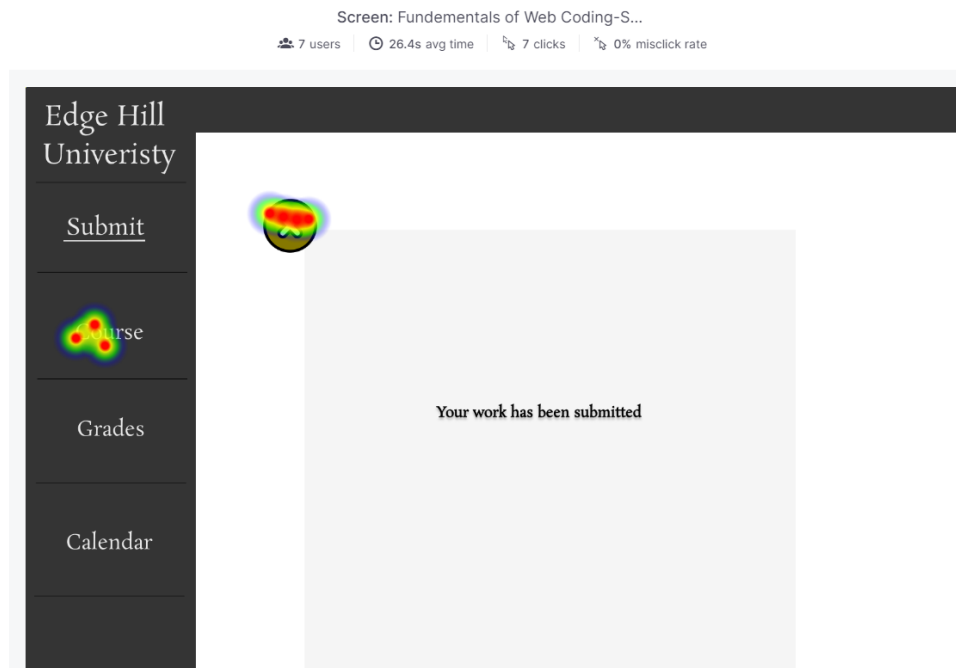


Figure 56: Heat map from submission page to the first step of task 2.

On the figure above the heat map for the first step into the second task is shown. The users were asked to find the coursework 2 PDF files for any module which means that the users had to guide through the main page which is the **Course** page. There is a 0 percent of miss clicks where the users clicked on both expected links which are the **close** icon on the centre block or the **Course** button on the left-hand side of the menu.

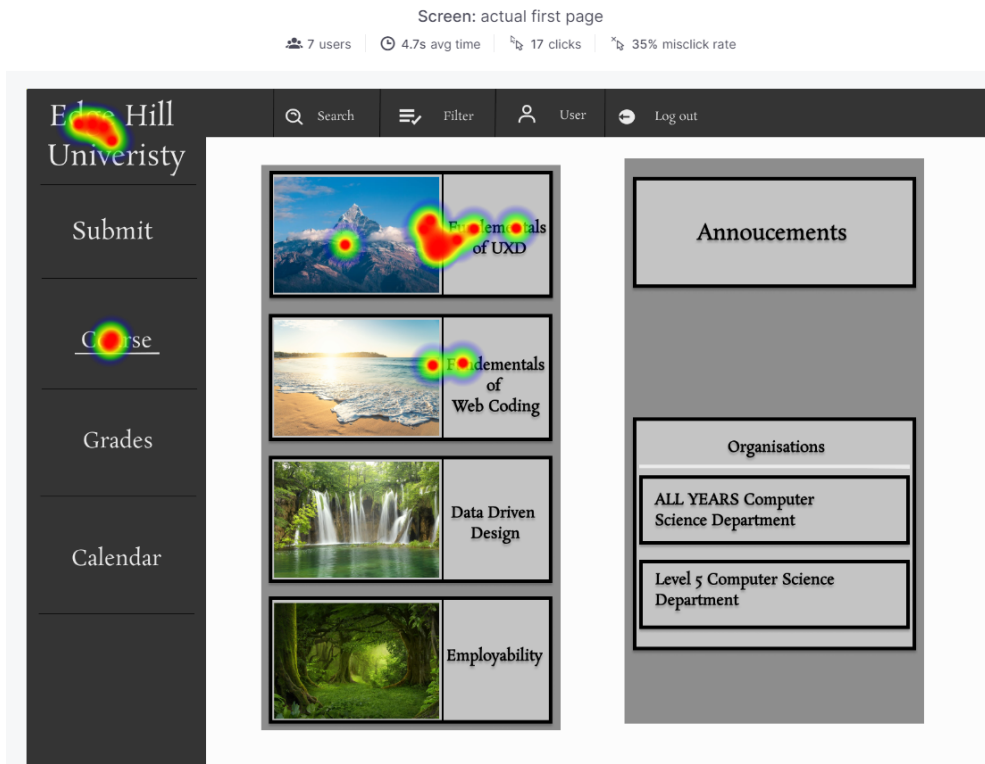


Figure 57: Heat map for the second step of task 2.

The heat map on the figure above is showing where the users clicked for the step of choosing a module. Again, there has been a 35 percent of miss clicks where some users clicked on the logo of the page, and some clicked on the “Course” button even though they were in the “Course” menu tab. The rest of the users clicked on the modules as expected and got to the third step of the completion of this task.

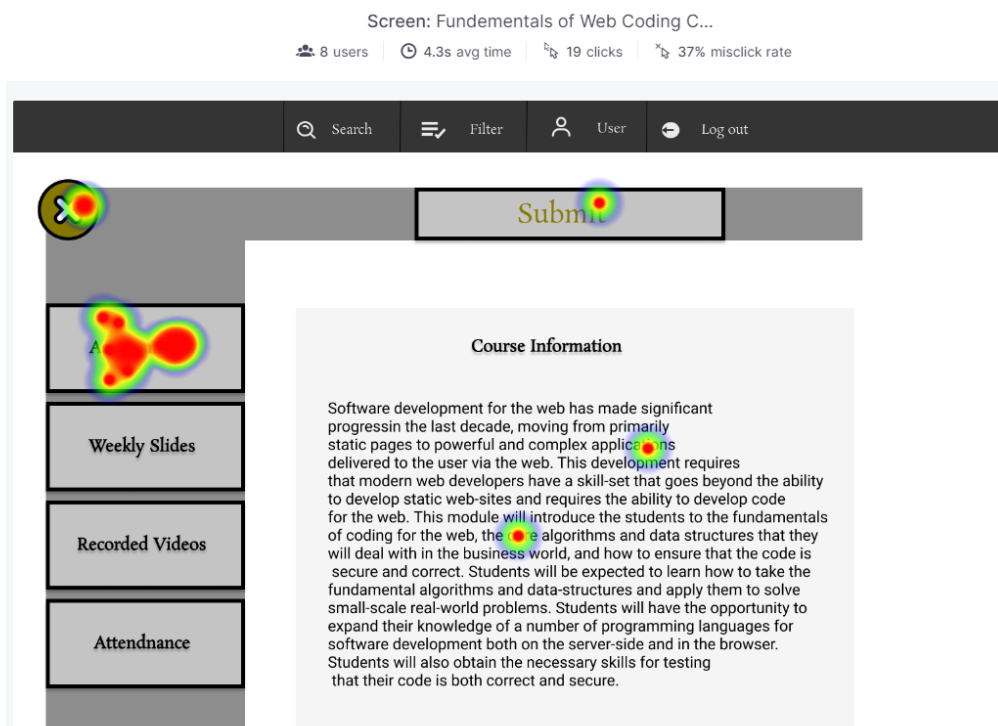


Figure 58: Heat map for the third step of task 2.

The heat map on the figure above is showing where the users clicked for the step of clicking on the “Assessments” tab. There has been a 37 percent of miss clicks where some users clicked on the “close” icon, and some clicked on the text rather than clicking on the expected button. Additionally, some users clicked on the submit button. The rest of the users clicked on the Assessments tab as expected and got to the fourth and final step of the completion of this task.

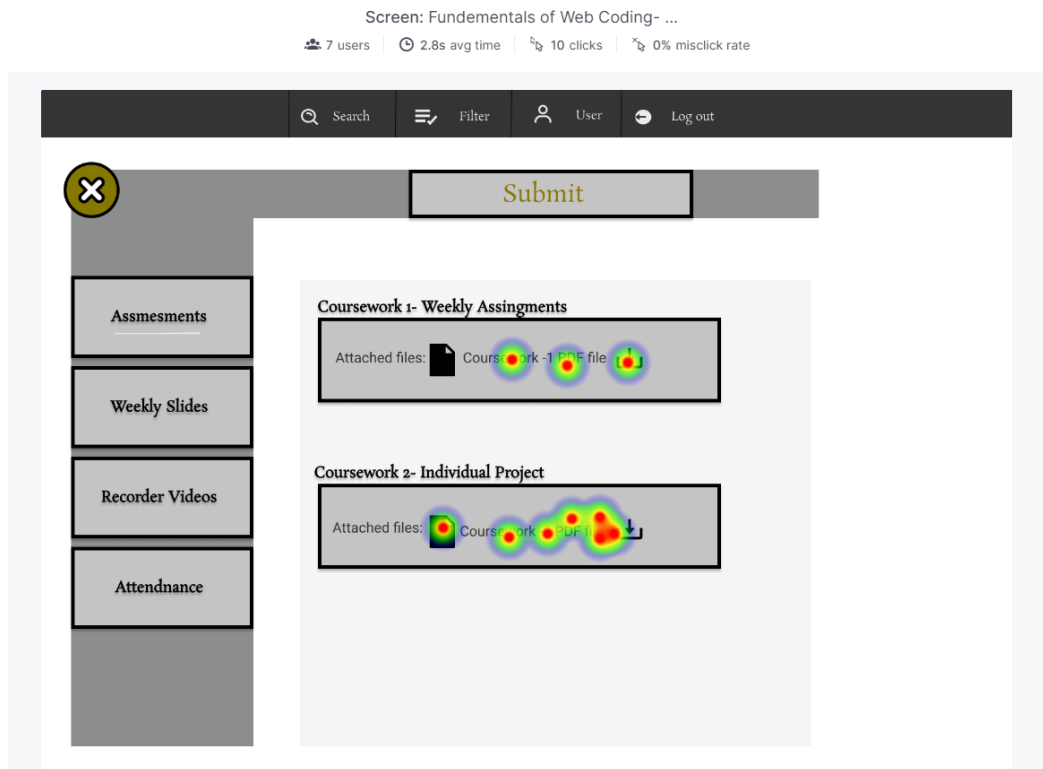


Figure 59: Heat map for final step of task 2.

The heat map on the figure above is showing where the users clicked for the step of clicking on the **Coursework 2 Individual Project** box in order to complete the task. There has been a 0 percent of miss clicks the users clicked on the expected boxes which in a fully working system would download the files and they completed the task.

6.2 Interviews (Think out loud protocol)

The tester decided to also undertake some interviews where he asked different people about the new Black Board system. The tester gave the users 2 simple tasks to do – **the same as the section above** – where people would complete those tasks in front of him, where they will say out loud everything they are thinking as they are going through the system.

Each and every interview has been recorded and then typed into a word document in order to analyse it by picking out key words that might show **confidence, confusion or frustration**. In this section of the report the interviews that took place to ten different users will be given. Various scans of the document with the interviews type in, and the notes taken, will be given below.

User 1

Me: So, the first task is to submit for any module.

Them: okay so I just pass one of this is it?

Me: Yes, is only the first link which works.

Them: is that how it's done? ← This shows some confusion.

Me: yeah, generally you would have to search for your local file but now you cannot.

Them: oh okay.

Me: now your second task is to find the pdf for any assessment.

Them: um...

Me: not the submission you don't need to submit again. I want you to find the pdf file for any module.

Them: oh, okay yeah.

Me: I get the confusion but, is the system confusing or did you not understand what I said.?

Them: I didn't understand. ← The user did not understand my task.

Me: so, did you find the submission process easier?

Them: yeah, I did. ← The user found the submission process easier.

Me: And also, did you find the general guidance easier?

Them: yeah, it was ok. ← The user found the general guidance easier.

Figure 60: User 1 interview.

Above, the interview of the first user is given. In most interviews the tester told the users their tasks and then asked them a question. The highlighted parts are key words or phrases that show how the user feels when completing the tasks. For example, when the user asked the tester if **"this is how it's done?"**, it shows confusion since the user did not know if they did the task the correct way. Additionally, the user did not understand the task that he/she was given since they tried to redo the first task rather than doing the second task which was to find the coursework pdf files for any assessment. However, when the tester asked him/her **if they found the submission and guidance process easier, harder or the same**, the user answered that both submission and process was faster and easier.

User 2

Me: your first task is to submit for any module:

Them: -----

Me: on the next task please say what you are thinking.

Them: okay.

Me: until now do you find the submission process easier, harder or the same from the current system?

Them: Probably easier to find, like because you just find the course and submit. Yeah, definitely easier. ← This user found the submission process easier. → Structure is better.

Me: Alright, for the second task I want you to go back to the main page and find the coursework for an assessment. The pdf files.

Them: So, I click on modules and then click on assessments. ← This shows that the user is confident.

Me: Yes.

Them: alright, then I click on the coursework pdf, and it that it? ← User found it really easy.

Me: Yes ideally, the pdf file would now be downloaded. Do you find this part, which is kind of the general process easier, harder or the same?

Them: I would say easier just because of the titles where it is obvious what you need to click. It is easier to find what you are looking for in this one. ← General process easier.

Everything is easier. ← is easier to find. The user found it

→ Structure is much better and straight forward

Figure 61: User 2 interview.

On the figure above, the interview for the second user is given. The questions are structured the same way with which the first interview is. The tester gave the same tasks which are to submit for any module and to find the coursework 2 PDF files for any assessment. The user found the submission process faster and easier by saying “**definitely easier**”. Additionally, the user said, “**you just find the course and submit**”, which show that the new system is structured correctly. Moving on, the user was confident when completing the second task since he/she knew exactly were to click and they said everything out loud without being shy. Adding to that, the user said, “**is that it?**”, which means that they found the system to be really easy to use. Finally, through the last thing that the user said, we can see that the structure of the new system is much easier, the general process is easier and straight forward.

User 3

Me: So, the first task is to submit for any module.

Them: (the user was thinking out loud where she read the tabs looking for the submit button)- assessment weekly slides, recorder videos, oh submit yeah, normally I would find the submission tab here.

Me: yeah, I get that you are confused, you could either click on this button or the submit button on the menu at the home page.

Them: oh okay, makes sense. ← user is confident about what to do

Me: if I showed you how to submit like our tutors did, would you find it faster or the same as the current black board system?

Them: probably easier. ← user has found the submission process easier if they used the system correctly.

Me: your second task is that I want you to go back to the home page and then find the pdf file from assessments for any module.

Them: its not clickable there, oh alright. I click on assessments and then download the pdf file.

Me: do you find the guidance easier faster or the same?

Them: that was fast, yeah less links to click on. ← this shows that the process is easier.
general process easier

Figure 62: User 3 interview.

On the figure above the third user's interview is shown. The user at the beginning was trying to find the submit button to complete the first task. However, they were very confused or shy, which lead to them not finding the button. The tester after some time showed the user where the two submission buttons are, and the user understood what they had to do when they said, "**oh okay, makes sense**". This shows that the user gained some confidence about what to do. Adding to that, the user said that the submission process would probably be easier if they used the system correctly. When the tester gave the second task to the user, the user was much more confident about what to do. This can be seen form the penultimate thing they said. Finally, the user said that the general process is faster than the current system.

User 4

Me: this is the new black board system, the first task I want you to do is to submit for any module.

Them: So, I will go on to course

Me: You are already in the courser

Them: Oh yeah, I would go on the assessments, oh submit at the top yeah. Then I would click on browse and then on submit. *This shows confidence.* *Submission is easier.* *The user knows what he is doing.*

Me: Alright and the second task I want you to do is to go back to the main page that we ere before and find the pdf file for any coursework in the module.

Them: I will select a module, I will go on to weekly slides, and then I would download it from here.

Me: No, you will have to find the pdf files. Imagine you are going into the coursework for any of the modules, and you will have to go to a module and find guidelines for a coursework.

Them: So, I will go into assessments and click on coursework and then it will download.

Me: Okay do you find it easier or harder than the current system.

Them: Same layout, quite easier. *General guidance is easier.*

Me: The submission process, do you find it easier, harder or the same?

Them: Yeah, I would say that the submission is easier. *Submission process is easier.*

Figure 63: User 4 interview.

Above, the fourth user's interview is shown. The user showed confidence at the beginning where they said that the submission process was easier. Adding to that, the user knew what they were doing, since all of the steps that they said out loud were correct. However, the user was confused when the tester gave them the second task. The user was searching for the coursework 2 PDF files in the wrong tab. When the user figured out what to do, they said that the general process is **quite easier**, and that the system has the same layout as the current VLE Black Board system. Finally, the user said that the submission process is easier.

User 5

Me: So, your first task is to submit for any module and if you please say everything you think.

Them: Okay so clicked submit, go into this one, do I need to submit or download first.

Me: Generally, you would browse a local file but now you can't since it is a prototype, but what would be your next step if you found your local file.

Them: Check that it is there and then click submit, and I click submit now. ← User is confident

Me: Now you have done your first task and your second task is to guide from his page to the pdf file for coursework 2 for any module

Them: I will go to course and then, you mean this is the second one?

Me: No, the pdf for coursework 2 of any module, not the second module.

Them:

Me: No, the weekly slides, the coursework pdf for the assessment of a module.

Them: Oh, there it is, in assessments, coursework two, click on coursework 2 and then it will download.

Me: Alright except the confusion do you find the submission process faster easier or the same?

Them: It was quite easy the way it was labeled, and the system was good and very quick since I could just click into it and then click on submit. ← Labels make process easier
← process of Submission is easier.

Me: Alright, and about the general guidance?

Them: The general guidance was good and easy as well. ← submission process is very much quicker.
← general guidance is easier

Figure 64: User 5 interview.

On the figure above, the interview for the fifth user is given. At the beginning of the interview the user was showing signs of confidence since they said everything out loud clearly. The user completed the first task with no problem however they got confused on the second task as he/she was searching for the files in the wrong tab. The user said that the submission process is easier with the user of labels by saying, “quite easy the way it was labelled”. Adding to that the user said, “very quick since I could just click into it and then click on submit”, which means that the submission process is definitely made easier. Finally, the user said that the general guidance was easy by saying “the general guidance was good and easy as well”.

User 6

Me: Your first task is to submit for a module, until now the only link that is working is the first one, and please say everything you think.

Them: Okay so I click on submit, and I click on the first module. And then I would fill that in and when I was done, I would click on submit. *Confidence*

Me: Now for the second task I want you to go and find the pdf file for coursework 2 for any module.

Them: Okay, so I click on course I will click on the first module and then I will go down to weekly slides and it would say week 2.

Me: No, I told you the pdf files for coursework 2.

Them: O yeah sorry, I will click on assessment, and it says coursework 2 files I will click on that one and then it will download.

Me: The main goal was for me to make the guidance easier and the submission process faster. I want you to tell me if the submission is easier, harder or the same as before.

Them: *It does seem faster and easier at the same time, because it's grouped up.*

Me: Alright and the general guidance?

Them: It easier and everything is labelled correctly.

Figure 65: User 6 interview.

Above, the sixth user's interview is given. The user showed confidence at the beginning when the first task was given to them. The user finished the first task easily. This can be seen through the first thing the user said. When the second task was given to the user, he/she got confused and did not understand what to do. When the tester explained again what to do, the user finished the task with no problem by saying, "**Oh yeah sorry... and then it will download**". As before, this shows confidence. The user has found the submission process faster because everything is grouped up clearly. Finally, the user said that the general guidance of the system is easier, and everything is labelled correctly.

User 7

Me: hello my name is Iacovos Iacovides and today I will show my black board system for the university.

Them: okay

Me: I will give you two simple tasks. The first task is to submit for any module you choose.

Them: Okay, for the submission of any coursework of any module, I will click on the submit button I will choose the module, I will click on it and then click on the submit button and submit my work.

Me: So, did you find this easier, harder or the same as the current system?

Them: I found it much easier and quicker.

Me: The second task is to find and download the coursework file for any module you want.

Them: I will click on course and then I will choose fundamentals of UXD and then click on the assessments, and I will choose coursework 2 individual file and download the file.

Me: Alright, did you find this the same, easier, or harder than before.

Them: Again, I found this much easier and quicker, and much straighter forward.

↑
general guidance
is easy-

↑
general guidance is straight forward

← confident

← submission process is easier

↑ This shows confidence since the process of guidance is easier

Figure 66: User 7 interview.

On the figure above, the interview of the seventh user is given. First of all, the user shows confidence at the beginning, when the tester gave the first task. The user knew exactly what to do, and they said everything clearly out loud. When the user was asked if the submission process is easier, he/she responded with “I found it much easier and quicker”, which means that one of the main goals of the new system is met. Additionally, when the second task was given to the user, the latter again showed to be really confident where the steps he/she followed were correct. When the user was asked if the guidance was easier, harder or the same they said that the guidance is easier, quicker and straight forward.

User 8

Me: Hello, my name is Iacovos Iacovides, and today I will show you the new Black Board system for the university, I am going to give you two tasks to do and the first one is to submit for any module and the second one is to download the pdf file for any module.

Them: Firstly, I will click on submit and then on the fundamentals of UXD oh and then just click on submit

Me: So, did you find this easier than before, the same or harder?

Them: Yes, much easier. ← Submission process is much easier

Me: Now for the second task, again I want you to download the pdf file for coursework two for any module.

Them: I click on course, and then again on fundamentals of UXD, and then go to assignments and then click on coursework two files and download them.

Me: Do you find it easier or harder than before or the same?

Them: It is easier and quicker ← general guidance is easier

Figure 67: User 8 interview.

Above is the eight user's interview. When the user used excessively the word "and", when he/she was doing the steps for the first task, it shows that the user was confident. The latter said that the submission process to be much easier than the current VLE Black Board system. As aforementioned, when the users was asked to complete the second task, they used the word "and" a lot which shows that the user was confident ones more. Finally, the user said that the general guidance is easier and quicker than the current university's system.

User 9

Me: I would like you to submit from the menu button and then I would like you to also find the coursework 2 pdf by clicking on the courses button. Start

Them: Okay, so I will click on the submit button on the top left of the page and then I need choose the fundamentals of UXD and then I will submit after choosing my file and then I would submit my coursework.

use of "and"
Shows confidence

Me: Okay thank you, and now guide through the new system and I want you to find the coursework 2 pdf files.

Them: I will choose a module form going back to course, I will choose fundamentals of UXD and then I will click on the assessments tab and download the coursework 2 pdf files and I would download it.

Me: Did you find this easier the same or harder than before?

Them: Easier and quicker.

Submission process and general guidance is much easier.

Figure 69: User 9 interview.

On the figure above, the interview that the ninth user had gone through is given. As the previous interview, when the user was completing the first task, they used the word “and” many times which shows confidence, and that the latter knows what to do. When the user completed the second task, he/she was asked if the submission and guidance process is easier, harder or the same, he/she responded with “easier and quicker”.

User 10

Me: So, I would like you to submit from the menu button and then I want you to find the coursework 2 pdf file form any module you want.

Them: Okay so, I see the submit button on the left-hand side and just take me to submit page, and select the first module I see, and takes me straight to the submission drop box, and yeah it lets be browse and oh I can submit straight away. Very easy.

Submission process is easier and quicker.

the user shows levels of confidence

Me: Okay and now I would like you to go to the coursework 2 pdf from the course button on the menu.

Them: So yeah, just click on course, and I go to any course, what do you want me to do sorry?

Me: Find the coursework 2 pdf from the assessment tab.

Them: I go to assessment page and click on coursework 2 individual project very easy and download it.

general guidance is much easier and quicker.

Figure 68: User 10 interview.

On the figure above the last user’s interview is given. As in most interviews, the user showed signs of confidence and they found the submission process to be easier and quicker by saying “oh I can submit straight away. Very easy”. The user completed the second task very easily and said, “very easy and download it”. This shows that the general guidance is easier and quicker than the current system.

If you want to have access to the interviews showed in this section, send an email to the following address requesting the desired interviews – 24128341@edgehill.ac.uk

7.0 Conclusion

As mentioned at the beginning of the report the two main goals of the new Black Board VLE system is to make the submission and guidance process easier and faster. Many things were taken into consideration before starting the projects until the point where the project is ready to be published to the audience. When all of the important data was gathered from the questionnaires and it got analysed, new ideas of the system were designed. The developer then chose the most appropriate idea and turned it into a working prototype. That prototype was then tested in various ways to check if the main problems were faced and improved. In order to reach into a conclusion, all of the responses should be taking into consideration. The interviews that the tester did to the people are a perfect way to understand if the main problems were improved. All users said that both the submission process and the general guidance process of the new Black Board VLE system are easier and quicker than the current system that the university is using. However, there have been some users who got confused when they were asked to complete the second task, which was to **find the coursework 2 PDF files for any assessment**. This means that some users were confused when they were asked to guide through the system. This means that the general guidance of the system could be somehow easier and even more cleared than the way the developers did it. On the other hand, if someone explained the users how to use the new system before completing the tasks (the way lecturers and tutors do to students when they first come to the university), their opinion might had been different. Adding to that, every users' opinions about the submission process is that the process in the new system is faster and quicker which mean that one of the main problems of the current system has been fixed. Moving on, when the tester shared the prototype along the audience through the **useberry** application, most users managed to finish both tasks, which shows that the system is easy to use even if the tester is not in the same room as the user to provide any help, in case it is needed. Taking all of the above into consideration, the new Black Board VLE system that has been designed faced the two main problems that the current system has, and it has improved them. The submission process is better in the new system, since the submission process is easier and quicker. The general guidance could be easier and clearer, even though all users managed to guide through the system and find the coursework 2 PDF files. The developer also tested the prototype, where he checked that all links are working the way they should, and that everything is flowing as smoothly as it should. The way with which the data has been gathered, analysed and the different ways with which the prototype has been tested shows a well understanding of the concept that the project has and, in the end, a **fully, properly working** Black Board system has been developed.

8.0 References

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