Edge Hill University

CIS3300 – Research and Development Project

BSc Web Design & Development

Project Bazaar Proposal

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1 Introduction

In the last year of an undergraduate degree most students are required to carry out a third year project which can either be a research dissertation or a software project. The aim of both is to encourage students to build upon the skills they have learned during their degree in an area of research they find interesting as well as exploring a research topic in depth. The project also builds students skills in managing a sizeable project from beginning to end. As the project/dissertation needs to be a yearlong, most students need to be able to either develop their own topic or undertake a lecturer set project. This will be the base of the whole project by creating an on line system that allows staff to add suggestions as they think of them with the method of allowing the student to contact them once they have found a topic they which to choice.

The current system which is being used is the lectures will send their ideas to the module leader which will then advertise them within blackboard. Blackboard is the online learning system in which all notification and module content is kept for student to get access from however there is no way at the moment where students can directly contact their lectures through the system on which projects they are interested in. The other problem is the way they advertise the project does not give them any background information on the project, leading to the student to have to contact their lecturer.

2 Project background

In this section we will be exploring two aspects of this project the first is what is an undergraduate dissertation. The final aspect which will be looking at briefly will be the current research into problem student find they have with final year projects.

Before we can look at the problems the project will be trying to solve we need to fist understand the client. The brief was set out by edge hill university computing department. The university has been offering higher education to student since 1885 and focus on making sure they provide student with the chances to expand their knowledge which they were awarded gold in teaching excellence framework.(University, 2017) The computing department themselves aim is to try and produce high calibre graduates ready to go straight into the industry with a success rate of 91.4%.(University, 2016) One way the computing department make sure their students are ready for the industry is making all their undergraduate and master student carry out a final long year project. The department believe that this will benefit them by providing them with the chance to be creative, enhance their practical/ analytical skills, understand the importance of time management and self-evaluation. (Pereira, 2017)

The second aspect of the project is what is a final year project. The computing department has the responsibility to make sure that their course goes along with the guidelines set out by the British Computer Society accreditation. According to the 2015 guidelines the computer society (Society, 2015) expect their student to carry out an individual final year project which should allow the student to apply practical skills and analytical skills which should have been learned over the three years. The should also allow the student to be able to be creative when dealing with a real world problem. The last year project needs to be able to test the student ability to be able to self-manage and self-evaluate themselves.(**shankapal**; Society, 2015) A self-help book for student undertaken a final year project also explains that the use of the final project is also away to train student to become professional is carrying out research or a development project.(Mikael Berndtsson, 2013)

However a final year project can not be confused with a dissertation. Professor Shankapal has all ready stated that a final year project is used to test the knowledge of what student have learned inside a class room. However a dissertation is a chance for student to develop on their knowledge to come to a new discovery in a specific area of research. Another source describe a

dissertation as away to get information on how a topic affects a specific users or even compare two groups of user against each other.

So far in this section there has been explanations into why the client encourages their students to carry out final year project and what they are trying to achieve with the final year project. However, is there an actual problem occurring when student carrying out final year project/dissertation. According Todd* et al., 2004 their independent inquiry into dissertation found that the most challenging aspect of the final year project is a specific research question and make sure that the project has a precise focus. Easterby-Smith M et al., 1991 also tells us that in his opinion that it is very unlikely that you will find a student that is able to clear focus from the start of project and then can impact them starting the project. This shows that there is a need for students to be able to access ideas to make sure that they can see how focused a project needs to be. As well Silen, 2003 explains that creating a new project idea can be come 'chaotic' when coming to terms with what they need to achieve is such a short period of time. From this research we can tell that there is a need to contain a support section within the application.

3 Project aim and objectives

3.1 Project Aim

The aim of this project is to investigate the problems students have with planning and undertaking a third year project with a web based solution.

4 Project Objectives

To meet the aim, the following objectives will need to be achieved:

OB1 : Conduct desk background research

OB2 : To investigate the student cohorts understanding and needs when preparing for third year project/dissertation.

OB4 : Design and build a web based solution to aid students.

5 Scope

The research side will include:

- Questionnaires which will find the common problem which third year student are finding they are happen

- Questionnaires which will find out what student would like to now before they pick their final year project

- carry out research into the layouts of free-lance website and portfolio sites to find out how to layout the system.

The system which will be created will included:

- A login system for staff to access the website

- A form which will allow staff to upload project ideas

- A form which will allow staff to upload previous project for student to get a sense of what a project looks like and how to write one

- A system which allows staff to be able to add advice on key parts of the project and have written advice on each sections of the final year report.

- A student email checker to make sure that only Edge Hill student can access the projects and previous projects.

- A response system to allow student to contact staff once they have decided which project they would like to take part in

- A filtering system to allow student to filter the project by topic and staff members.

The system will not include:

- A way for student to suggest their own projects and get feedback on the project from staff

- A chat section between staff and students

- A student login system for them to save project they are interested in.

6 Deliverables

By the end of this module the following will be submitted:

- A working website application

- A section of the report which will cover all the research into the problem students are having with final year projects

- A section of the report which will cover the research into the layout of the web application

- A section of the report which will cover the usability, functional and behavioural testing of the web application

7 Methods

The main method which will be used to answer objective 1 will be literature review which will be used to explain the overall what is a project, why they are needed with in an undergraduate degree and what edge hill university expect from their student carrying out a final year project. The main reason for using a literature view is because it helps provide the theoretical background and helps to conduct a link between what we currently now about the area of study and what the project going to try to prove(Kumar, 2014). This will be linked to objective 3 to see if edge hill students and other research studies share the same problems when dealing with final year projects.

Another method which will be used to answer objective 2 will be desk research to undertake a comparison to website similar to then one which will be created to come up with design ideas. The type of desk research which will be used is external desk research which is a type of secondary research, the research will not use to collect data but to review how similar system work.(**Travis**)

The aim of objective three is to find out the needs for students the main research tool that will be used to gather the data will be questionnaires. The main structure of a questionnaire is a list of open and closed questions which is used to get specific data for a target audience. According to Kumar Kumar, 2014 the main reason for using the questionnaire as a research tool is it make sure that all the users are kept anonymous from the research. The research is less expensive as it can save time by they can be created

on-line and sent my email and can be carried out quickly with high amount of participants. However, the only problem which could occur would the response rate especial when dealing with the students that have already left university.

The final objective is the build within the build their will be individual methods but there will also be an overarching method which will be one of the agile development method. Hikka Merisalo-Rananen and colleagues state that the practice of agile development will lead to good practice because of the link the method creates between individuals and the team they are working in.**hikka** (93, software management). The type of agile approach which will be carried out in this project will be scrum. One of the key reason for using the scrum method within this project is it helps to promote team heedfulness, which will come across through the way the student and the supervisor will interact with each other to stay on top of the project.(Bob Huges, 2009) The other main reason for the use is the method allows for rapid adjustment and allows the developer to be able to identify and work on problems quickly.(Alexander, 2017)

The next method used within the development process will be focus groups because it allows the researcher to collect qualitative data on their attitudes and opinions to a product.(Agadoni, 2017) The focus group will mainly be used to carry out to compare two designs for the application with the intention of creating a third final design for the website. The type of focus which will be used is mini focus groups because it allows the focus group to get intimate approach to a topic.(Agadoni, 2017)

The other development method which will be using during the development process is behaviour driven development. The main aim of the BDD testing is to be able to test the behaviour of the functionality of the application.(Sale, 2011) BDD testing allows the developer to set out steps they which a user to carry out to either get to a feature or interact with a feature. (Sale, 2011)

Once the website has been built and content has been added to the website there will be usability testing.
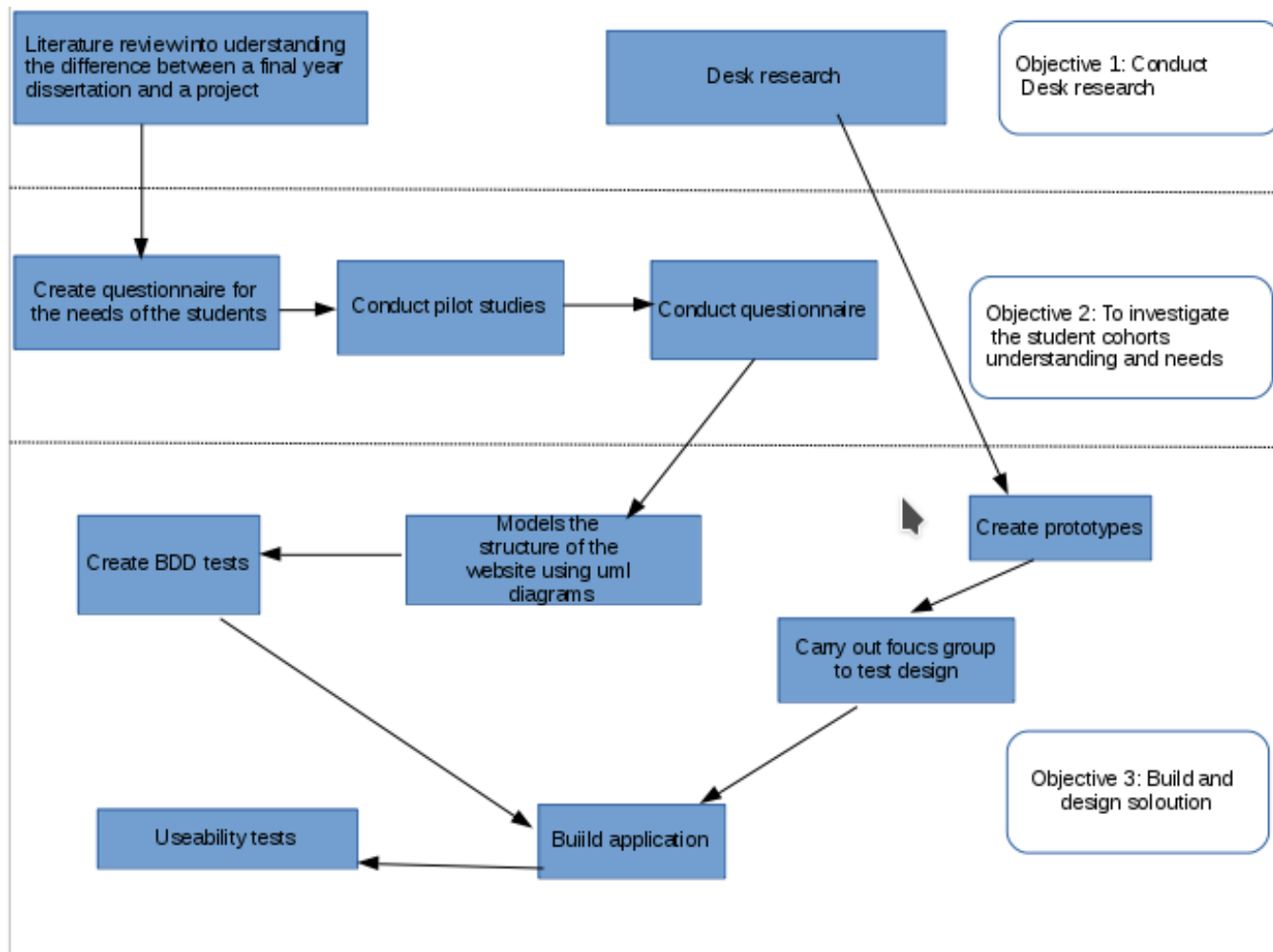
Figure 1: Conceptual Diagram

8 Resource required for the project

8.1 Resource for objective 1:

As this is background research not resource are need just the books for the library and access to free lance website online.

8.2 Resource for objective 2:

- Access to current second year students to understand what they will look for when deciding which project to choice.

- Access to current third years to find out what they would of liked to have had before deciding their final year project.

- Access to past student to determine what they found most difficult about their final year project

8.3 Resource for objective 3

- LA ravel 5.5

- PHP Unit

- MySql sever

- CodeCeption

- Trello

- Version Control

- list of project and previous project example to test the website

- project module handbook and assessment material

- list of staff email and their pathway of interest

- CI testing

9   plan of work

Action back log	Status	Sprint ready
Sprint one		
create proposal	In progress	Yes
create bit bucket account	Not started	Yes
link trellor to bitbucket	Not started	Yes
set up new laravel project	Not started	Yes
link bit bucket to slack	Not started	Yes
Back log needing to be add to a sprint		
create activity diagrams	Not started	No
create ERD	Not started	No
create user case diagrams	Not started	No
Create personas for staff, student, non-edgehill student	Not started	No
develop tables	Not started	No
migrate tables to mysql	Not started	No
seed data for pathways	Not started	No
create bdd test for creating previous project	Not started	No
create bdd test for delete previous project	Not started	No
create bdd test for edit previous project	Not started	No
create bdd test to create new project	Not started	No
create bdd test to delete new projects	Not started	No
create bdd test to edit new project	Not started	No
create bdd tests for adding staff	Not started	No
create bdd test for edit staff	Not started	No
create bdd to test permissions	Not started	No
create bdd to test header options	Not started	No
create the add staff fucntion to website	Not started	No
create new learning material form	Not started	No
create new previous project form	Not started	No
create new project form	Not started	No
extra project data to website	Not started	No
extract previous project from database	Not started	No
extract saved learing material form database	Not started	No
create edit and delete learing material	Not started	No
create edit and delete project	Not started	No
create edit staff	Not started	No
create email checker	Not started	No
create function to allow certain staff to edit content	Not started	No
create the filitering options for the projects	Not started	No
create the response featue ofthe project	Not started	No
add validation to new users	Not started	No
add validation to previous project	Not started	No
add validation to project	Not started	No
develop some accessibility	Not started	No
research content for website through questionnaires	Not started	No
create seed for learning section	Not started	No
gather learning advice	Not started	No
carry out desk resrearch	Not started	No
design high fidielty	Not started	No
design low fidelity	Not started	No
carry out focus group for designs	Not started	No
create front end look	Not started	No
gather project and previous project resource	Not started	No
image optimisation	Not started	No
add content to website	Not started	No
carry out cognitive walkthrough of the website	Not started	No

Figure 2: project backlog

10   Project Risks

One of the possible risks which may occur is not being able to get enough research from the different students to work out which advice they need before choosing and during their projects. The chance of this happening is low as there are lots of opportunities to talk to the relevant student however the impact would be high as this would impact what sort of support it provides on the website. So the overall this would have medium impact but if this does happen the research would need to be turned in to more a literature research from other universities which would mean that the result may not always be relevant to the department.

One problem which may occur that could affect the product is if the hardware the system will be built on stops working and the build cannot be accessed. This will be easily fixed through the use of version control and getting a new hardware set up to carry on with project.

The other problem which needs to be addressed is if there are any issues with the hardware, there is a possibility of this happen and the consequence would be very high as work would be lost. The impact of this on the project would cause the development to be stopped. However, through the use of version control this will keep the impact level down as it will be easy to pull back to an early version of the project.

The last problem will be not getting access to past projects which need to be tested when uploading to the website. The like hood of not getting the previous project is low as the department has many examples that can easily be accessed, the consequence of not getting them is also low as it will not affect the development. The other all impact would mean that the testing would not be completely accurate.

11   Ethical considerations

One of the ethical consideration which is the personal information that will be stored on the database about the staff member that will be using the website. The other ethical consideration when dealing with the database is making sure that the previous project author is kept hidden so they cannot be tracked back to the students.

Another ethical consideration which will need to be considered is that the product will be used within the educational environment, this means

that there will be student with different needs that need to be considered when design the functionality of the website for example students that are visual impaired.

The main ethical consideration is the background research which will involve student so their personal information which will need to be kept hidden at all times. The main research method which will cause ethics problem is questionnaire, focus groups and cognitive walk-through. The questionnaire can be carried with great anonymity as there is no face to face and there is no need to save their names. The other two can be protected though consent forms which allows them to justify the research and what will happen to the data.

12   Conclusions

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