Web Application Development

CIS2169

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# 1.0 Introduction

An application developer has been asked to further develop and extend an already existing web-based academic management and tracking application, which at this point it tracks all academics research activities. The developer must enhance this application by improving several things that the application is lacking. For any type of work, possible and accurate planning should be followed to ensure that everything will be accurate and correct at the end. In this case, a correct plan includes, designing the system using appropriate UML diagrams and ensuring that the links between the builds are made possible. Understanding the way that something links to another are one of the most important aspects when it comes to developing such an application. When the diagrams are made, the implementation face will come, where the developer will use the diagram to build an application with the same links that he has designed. When the code is finished, various tests should be made, which will eliminate the chances of errors when the application is published. All of the steps made will be explained in this report.

# 2.0 Diagrams

In this section, the UML diagrams that have been designed will be explained.

Diagram

Description automatically generated

The diagram above is an Activity Diagram. It shows the way with which the developer will begin the process of understanding the case study, all the way to the very end which is deploying the application. The very first activity that the developer had to do is to observe the existing application, see what it is lacking, and then read and try to understand what the case study is asking, along with the aims and the objectives. If the developer understood what needs to be done, he would then create the diagrams and then continue to implement the code. After the appropriate tests have been done, he would deploy the application.

Diagram

Description automatically generated

The diagram above is a Class diagram. In this diagram, some classes have been developed with the aid of the given case study. The developer had read the case study over and over again until he managed to come up with these classes. The code will be built around these classes trying to connect every bit of code together. Six classes have been made and each one has a primary key and a foreign key assigned to make the relationships between the classes possible and accurate.

# 3.0 Sketches

When a developer is asked to develop an application, one important thing to do before starting to code is to sketch some basic ways that the page might look like. Thus, the developer has created some sketches about what the home page of the website will look like along with the other pages. In this section, the sketches will be provided along with an explanation about each one.

A piece of paper with writing on it

Description automatically generated

In the sketch above the home page is presented. There will be a bar on the top with which the user will be able to do various things, like adding a new module, creating a degree, or an assessment. There will be a quick way to add a module on the left-hand side of the page where the user can enter the name of the new module, the hours that it takes, the academic, etc. At the bottom of the page, there will be a table where all the modules will be displayed.

Text, letter

Description automatically generated

In the sketch above, another way in which the home page might look is presented. There will be a top navigation bar where the user can navigate to the rest adding pages, which include adding modules, creating degrees, and creating assessments. There will be a button called lessons which will be another gateway to the adding lessons page. At the bottom of the page, there will be a table showing the modules along with the rest of the important information about each module.

Letter

Description automatically generated with medium confidence

In the sketch above, the third way with which the home page might look like. As in the other sketches, there is a navigation bar on the top along with a logo. Below that there are some boxes with which the user can add a module. At the bottom of the page, there is a table where the modules will be presented along with important information about each module.