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## BSc Final Year Project Form (2015/2016)

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### 1. Proposal

The student should complete parts 1(a), 1(b) and 1(c) below, and then agree the maximum pocket values with the supervisor and put these in part 2(a) below. An electronic version of this form should be uploaded to the Final Year Project page on Moodle no later than **Monday 2<sup>nd</sup> November 2015**.

#### (a) Student details

<b>Name:</b>	<b>Project Type 3 (BUCI026S6)</b>
<b>Email:</b>	

#### (b) Project details

<b>Title: Web store</b>
<b>Objectives:</b> Design and development of an E-Commerce platform which uses cloud technologies to enable growth flexibility.  Learning and development - Learn how to use new technologies as well as gaining more experience with already known technologies. Dealing with the integration of multiple components and the use of software design patterns.  The reason I have decided to develop a web store, which is not the most original subject, is the fact that I want to pursue a software development career and want to use .NET as the primary software framework.  The web store project offers the opportunity to work with several of the main technologies that are widely used in the market and, as the ubiquitous nature of E-business sites, it also offers an easy way to compare my work with what is currently being used by all sorts of companies.  It will also represent a good addition to my portfolio as potential employers can derive a good sense for my abilities from a project of this kind.

**Title: Web store****Description:**

The application will have all the main functionality of a fully automated online store. It will allow users to search through the product catalogue, add products to the cart and if the user has an account and is logged-in, proceed to checkout, where PayPal facilities will allow the payment to be processed.

Other functionality will be added depending on the available time, for example, some desirable features from a commercial point of view would be a catalogue management system and a customer relationship management system.

An interesting side of the project, is the use of Microsoft's cloud service Azure, which will host the application. Azure provides server infrastructure management services, and other cloud services that make the applications more powerful.

Main components of the prototype system: product catalogue, shopping cart, user authentication and payment facilities.

Optional features: metrics reports, user management, order management, catalogue management, social media integration.

It is planned the use of the following technologies: Microsoft .NET framework, Microsoft Azure, Microsoft SQL database, Java script (jQuery, Bootstrap, knockoutJs), web services (json or xml), Github (source control), Microsoft Visual Studio IDE

**Method:**

For the development of this project I will follow the Agile Methodology, the idea is to build the application incrementally so that each milestone will deliver a working piece of software.

Although the proposed functionality is presented above (description), it is not yet clear how exactly the pieces will fit together at this point, and this is one of the reasons to choose Agile development, as this methodology makes it more flexible to adjust to changes.

Unit testing and Functional testing will be the main testing methods, a test plan will be devised to ensure that the application meets the specifications. The plan will identify test scenarios and define a clear strategy to execute the tests.

In terms of the functional testing (black-box), test cases will be created based on the defined use cases. The result of these test will then be compared against the documentation to ensure correct implementation of the functional requirements.

Each iteration of the development process will consist of a cycle where a prototype will be developed, tested (according to the defined testing strategy), reviewed, and refined accordingly. The project will be broken down into milestones, on the end of which, a portion of the work will be evaluated by the project supervisor for feedback.

GitHub will be used for version control.

The IDE used will be Microsoft's Visual Studio Community 2015, and the code will be in accordance with the .NET convention.

MVC (model view controller) will be main architectural design pattern, as it promotes separation of concerns and it is widely used in the industry.

**Title: Web store****Work plan:**

Initial Requirements, functional specifications and design:

November 2015:

- Establish the detailed technical requirements;
- Create wireframes for each page of the application and a site map;
- Define use cases and workflows;
- Create a model of the system (UML diagrams);

December 2015:

- Create the data model;
- Define testing scenarios and devise testing strategy;
- Build the main components of the website, this includes the elements that are common to all of the pages (e.g. common page structure, top navigation bar, etc.);

Development milestones:

January 2016:

- Database implementation;
- Build the product catalogue (have a landing page displaying products at the end of this stage);
- Implement user authentication and account management;

February 2016:

- Build shopping basket;
- Implement checkout facilities (integrated with PayPal);
- Implementation of administration facilities (product and user account management);

March 2016:

- Design and Implementation of other extra functionality (report generation, etc.);
- Report writing;

April 2016:

- Report writing;

**College equipment required:**

Microsoft azure licence