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Southampton Solent University

MARITIME AND TECHNOLOGY FACULTY

Project outline proposal

BSc(hons)Software Engineering

[Project (PRJ601)](http://mycourse.solent.ac.uk/course/view.php?id=14244)

Project title: Timetabling System

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Software Requirements specification

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# 1. Introduction

The purpose of this project is to create a website application which will help to find the people who ran outside their countries because of a war such as the Syrians refugees. There are more than 4 million Syrian left the country and there are a lot of them no one knows where is he or she. For that I came with this idea which will allow the people to register them self in the website and they should type in where are they based and an option will allow them to say what they need such as jacket.

## 1.1 Aim

The aims of this project are to research timetabling and the use of timetables within university and colleges together with the technology for web applications for timetables, appropriate tools and technology for the development of this web application and to implement and evaluate the resulting application.

## 1.2 Objectives

* Analyse the system requirements for the users
* Identify a suitable mechanism for the implementation of timetables
* Design, build and test the website application
* Assign appropriate resources to events such as teachers, students, rooms etc taking into account any given restraints.
* Evaluate the suitability of the website application with the users

## 1.3 Literature Survey

There are a lot of problems in this web application because you should consider How to ensure that teachers are available in the good classrooms with the correct students. Until now to solve the school timetable problems is done manually, or with the help of a spreadsheet program. Typically, when it’s done manually it’s requires an expert person and might take many weeks for large schools.

(11 January 2010).

According to Collins Concise Dictionary (4th Edition)” a timetable is a table of events arranged according to the time when they take place”. The events normally are the meetings between people at some location. The timetable should meet a large number of compulsions. The timing of the events must be that no one has more than one event in the same time.( Willemen, R.)

## 1.4 Methodology

Software development methodology is a framework used to plan and control how the software should be done from the first stage. There are a lot of methodologies you can use so for this project the methodology I will be using is incremental model it is applies the waterfall model incrementally.

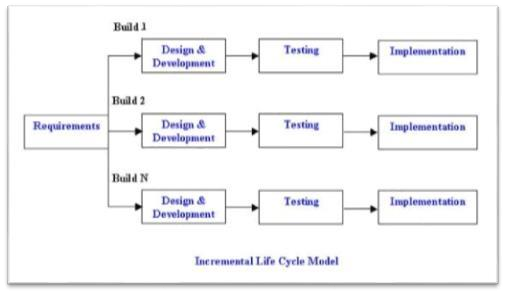
It’s broke the project into small sections, it will be easy to change during the development process

**Advantages of using incremental model in my project:**

1. it is easy to test and debug
2. Relatively small change can be made during each iteration.
3. After each iteration, regression testing should be conducted.

**Disadvantages**

1. using Incremental model needs a good planning and design
2. the cost is more expensive than waterfall model
3. Before I start I need a clear and complete definition of the whole system.



## 1.5 Resources

To do this project it will need a very good level of JAVA and a really good understanding of genetic algorithm. PHP, HTML5, CSS, AJAX, JavaScript and SQL to create the database which will record the teachers name and the classes. The main language will be JAVA and API because all the coding will be using this language and I will be using bootstrap.

## 1.6 Social, legal and ethical issues

In this project there would be no confidentiality issues. There would be few personal details will be stored such as the name of the student and the date of birth and which class does they study in and for the teachers it will store the name of the tutor and what subject does he/she teach so there is no consideration for Data Protection, however for the web accessibility it was considered because the project will be used for all the people. For the copyrights in this project it is clear that you cannot use any thing such as images or videos without taking permission from the creator of them, so you cannot use them in your. For the privacy of the website application you should have a detailed website page called privacy policy which will explain for the user in details what is the personal data you will collect in the website, what these data will be used for.

## 1.7 Risk

For this project there are a lot of risks such as:

* The main risk is how to solve the genetic algorithm

* The application may not be compatible with all schools however I will make sure it will be compatible with all the schools.
* The risk of data protection because there is information about the students and the teachers however the amount of data will be stored about each student will be name, date of birth and which class they will be in.
* The ability to store all necessary data in the database
* An appropriate website interface must render correctly in all the web browsers

## 1.8 Risk Table

##### H: High, M: Medium, L: Low

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **likelihood** | **Impact** | **plan** |
| Solving genetic algorithm | H+ | H+ | Research, reading books and testing |
| Data Protection | H | H | Secure my application and the database |
| The Application may not be compatible with all the schools/colleges/ universities | M | H | Find a logical algorithm |
| Storing all necessary data | H | H |  |
| Website interface | M | M |  |

## 1.9 Project Schedule

### 1.10 References

1. Inderscience Publishers. "Solving the problem of school timetabling." ScienceDaily.

ScienceDaily, 11 January 2010.

<www.sciencedaily.com/releases/2010/01/100106093631.htm>.

1. Willemen, R. (2002). School timetable construction: algorithms and complexity.

[PDF] Universities Eindhoven,pp.1-6. Available at: [http://alexandria.tue.nl/extra2/200211248.pdf [](http://alexandria.tue.nl/extra2/200211248.pdf)Accessed 9 May. 2014].

**2. Appendix**

#### 2.1 purpose

The purpose of this document is to give you functionality and definitions for the project.

#### 2.2 scope

The aims of this project are to research timetabling and the use of timetables within university and colleges together with the technology for web applications for timetables, appropriate tools and technology for the development of this web application and to implement and evaluate the resulting application.

#### 2.3 Definitions, acronyms, and abbreviations

**Genetic Algorithm**Genetic Algorithms (GAs) are adaptive heuristic search algorithm based on the evolutionary ideas of natural selection and genetics

**PHP**

Is a popular general-purpose scripting language that is especially suited to web development.

##### MYSQL

The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements.

##### Lesson

A lesson is a structured period of time where learning is intended to occur It involves one or more students

**Time Slots**   
a time assigned on a schedule or agenda

##### Timetable

A schedule or a timetable, as a basic time-management tool, consists of a list of times at which possible tasks, events, or actions are intended to take place

##### Teachers

A person who provides education for students and will manage the unit’s availability times and the teacher can add a new homework on the homework page. The teachers are the users of the web application.

##### Student

Is a learner, or someone who attends an educational institution. The student will be the other user of web application. The student will log in to his account to check the timetable.

**Location**

It is the location where the students and teacher should go to have the class for example in which room the class will take a place. I have to consider the size of the room if it can fit for the number of the student which they are associated to the class. I can’t put a sport class in a chemistry room for example

**Institution**

Its means the schools or colleges or university, the institution are the main user for the web application because they will register the students and the teacher with the application.

#### 2.4 References

[1]Genetic Algorithm  
  
<http://www.doc.ic.ac.uk/~nd/surprise_96/journal/vol1/hmw/article1.html#introduction>

[2]php

<http://php.net/>

[3]MySql

<http://www.mysql.com>

[4]Lesson   
<http://en.wikipedia.org/wiki/Lesson>

[5]Schedule/Timetable

<http://en.wikipedia.org/wiki/Schedule>

[6]Teacher

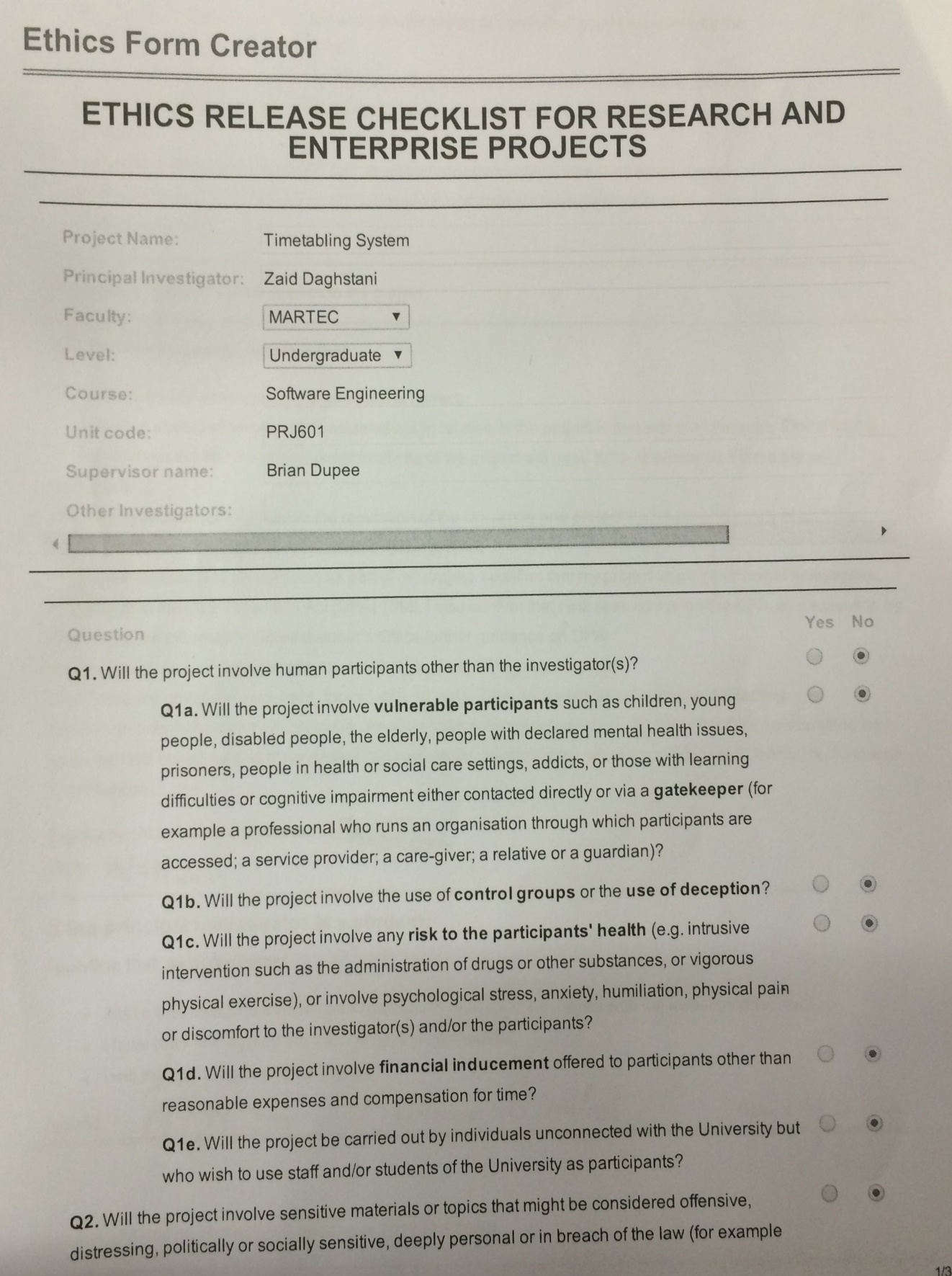
<http://en.wikipedia.org/wiki/Teacher>

[7]Student  
<http://en.wikipedia.org/wiki/Student>

**2.5 User requirements**in every project we have to think about the user requirements otherwise if we did not think about it we will fail the project. In my project I will have 3 kind of users

* **Institution**   
  will be the main user for the web application because the institution will register the teacher and the students. The institution will require from the web application that the application will provide them with the best option for the timetable.
* **Students**will require to have username and password so they can access to check there timetables.
* **Teachers**   
   will require same as the student to have username and password to check when they have classes and the web application will have an option for the teacher to add a new timetable just for the homework which will allow the student to know when the homework should be done.

#### 2.6 Ethics Release form



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