Technological University Dublin (Tallaght Campus)

School of Enterprise Computing & Digital Transformation

Project Guidelines for Second Year Computing Project

B.Sc. in Computing/Higher Certificate in Computing

Academic Year 2022 - 2023

Contents

1. Introduction

All students are required to complete and submit a software development project as part-fulfilment of their course leading to the award of Bachelor of Science/Higher Certificate in Computing. Students are required to read this project document carefully before project commencement. The project will run in Semester 4 of the academic year and will be of 12 weeks' duration.

2. Project Goal

The aim of the project is for students to develop the skills necessary to undertake the analysis, design, development, testing and management of a project from conception to execution using agile methods and technologies.

Project ideas should focus on the development of a business information system/e-commerce website based on research carried out into real world applications. Students will undertake the project in teams of 3 students to help develop team skills.

3. Project Scope

3.1. The project selected must be capable of being completed within one semester (Semester 4).
3.2. A project schedule will be published specifying the deadlines of the project deliverables.
3.3. All projects must include each of the components defined in the marking scheme.

- Projects must contain sufficient technical content to meet the standard expected of a 2ⁿᵈ year project.
- The project should be based on the knowledge and skills developed throughout the course in a range of modules, in particular, Analysis & Design modules, Software Quality & Testing, Database, Web Design & Development and Software Development modules.
- Each team member must contribute to each phase of the project.
- The expected student effort per week of the project: 10 hours

4. Project Ideas

A list of sample project ideas will be provided on Moodle, however teams are encouraged to come up with their own project topics based on their work experience and interests. Project ideas must be approved by the project co-ordinator.

5. Support Workshops

A set of workshops will be provided to support teams in setting up and configuring the necessary agile project management software and relevant tools. These workshops will assist teams in planning, communicating and tracking progress and managing the build, test and release process. Attendance at these workshops is mandatory.

6. Supervisors and Project Groups

In Semester 4, a project supervisor will be assigned to each project group.

- It is the team's responsibility to make initial contact with their project supervisor and set up an agreed time for weekly meetings to discuss progress in their project.
- The supervisor will agree the scope of the project.
- The supervisor will supervise, guide, encourage and make suggestions to the project group throughout the project lifecycle.
- It is not the supervisor's role to select implementation technologies or solve specific development problems
- During these meetings students should make notes of topics discussed, recommendations made and any feedback given. A copy of the minutes should be emailed to the relevant supervisor before the end of each week.
- If a student is unable to attend the project meeting on a particular week, they should email the supervisor in advance.

7. Project Schedule and Deliverables

A detailed project schedule will be published on Moodle identifying dates for project milestones and deliverables.

Students should initialise all work components indicating who did what as this will be used to allocate individual grades where there is an uneven distribution of the workload.

Table 1 below shows the breakdown marking scheme for project deliverables.

Table 1 - Project Deliverables

Project Deliverables	Value
Project Planning & Requirements	20%
Iteration 1 Prototype	15%
Iteration 2 Prototype	15%
Iteration 3 Final Prototype	40%
Project Management and Project Presentation	10%

8. Project Methodology

You will follow an iterative and incremental development process, delivering a series of prototypes along the way. Each prototype will build and improve on the previous one until you reach your project goals. Within each iteration the team will build, test, examine results and report, then repeat this process for the next iteration.

8.1.   Project Planning & Requirements

- Set up project management software and relevant tools
- Plan project, setting out overall goals, assessing feasibility, etc.
- Analyse and prioritise requirements, create use case model and create class diagram.
- Identify tasks, set iteration goals, etc.
- Submit Project Plan & requirements document by required deadline and review with supervisor.

8.2.   Iteration 1 – Initial Prototype

- Develop a working system with core functionality, e.g. Add, Update & Delete, etc.
- Design a series of tests to verify that that the system works as expected
- Document any issues or problems encountered.
- Produce a short report (700 words) detailing the approach taken (methodology) to design & development, test cases used and results obtained.
- Submit report by required deadline and demo prototype to supervisor.

8.3.   Iteration 2 – Revised Prototype

- Eliminate any residual bugs/limitations identified in previous test report
- Add extra functionality, e.g. shopping cart, booking transaction, etc.
- Test and report as specified in previous iteration.
- Submit report (700 words) by required deadline and demo prototype to supervisor.

8.4.   Final Iteration – Final Prototype

- No major functionality should be applied to prototype at this stage.
- Efforts should be concentrated on fine-tuning the prototype and rigorously testing the final system.

9. Final Project Deliverable

A zipped folder containing the final project documentation (as one file, see contents below) as well as the final software prototype should be uploaded via Moodle.

A hard-copy of the overall project documentation should be presented to the team supervisor at the project presentation.

9.1. Final Project Document should contain:
- A table of contents, numbered headings, page numbers and references
- An outline of each member's responsibility and participation within the project.
- An introduction to the project, including project plan and requirements document.
- Reports for each iteration (Iteration 1, Iteration 2 & Iteration 3).
- Concluding paragraph highlighting the achievements of the project, any shortcomings and what could be improved by future enhancements.
- The document should be bound with a cover page indicating:
  - Title of project
  - Names & Student IDs of students
  - Name of Supervisor

9.2. Project Presentation

The project presentation will give you an opportunity to present the final prototype to a panel of supervisors. It is the responsibility of the team to ensure the software runs as expected on the machines in the labs on the day of the demo.

N.B. It is essential for each member of the team to participate in this presentation in order to obtain a pass in the project. Each member will be required to demonstrate the sections of the project they were responsibility for developing.