

COMP591: Project Specification and Design (presentation and report)

Background

By this stage of the project you should have completed most of the research and analysis required for your project and so have a clear idea of how you will realise your project. The purpose of these two deliverables is to present Project Specification and Design both in a written form and orally.

Learning Outcomes

After completing the project "Specification and Design" documentation and presentation students should be able:

- work effectively and cooperatively within a team, taking on various roles within the team, on a substantial problem that allows to show innovation and/or creativity and allows to make practical use of principles, techniques and methodologies acquired elsewhere in the programme;
- manage their time effectively both individually as well as a team so as to carry out a project plan;
- locate and synthesise general and research information on concepts, ideas, and practices, relevant to a given project;
- undertake research on their own on a substantial Computer Science problem and to devise as a team an efficient solution using an appropriate methodology;
- prepare and deliver formal presentations, including, where appropriate, an overview of the methodology used, the design of a solution;
- collaboratively produce a report describing the conduct of the project.

Description of the Task

Your task is to produce "Project Specification and Design" report and presentation.

1. **The Project Specification and Design report** should comprise your project specification and design, together with description of your progress in implementation. There is no page nor word limit for your "Project Specification and Design" report.

The "Project Specification and Design" report must be written by yourself using your own words (see the University guidance on academic integrity, which can be found at <http://www.liv.ac.uk/student-administration/student-administration-centre/policies-procedures/academic-integrity/>, for additional information).

2. **The "Project Specification and Design" presentation** is intended to give a description of what you have done by way of project specification, design, and implementation so far, rather than a detailed presentation of the specification, design, and implementation itself. The suggested structure of the "Project Specification and Design" presentation, implemented at an appropriate level of detail, is described below.

The use of presentation software is strongly recommended for the presentation. You should give copies of the visual aids that you use for your presentation to the assessors. **15 minutes** will be allocated for the presentation, **plus questions**.

Submission guide for first semester (group projects)

1. Digital pdf files of the
 - o "Project Specification and Design" documentation and
 - o "Project Specification and Design" presentation slidesmust be submitted through the Comp591 E-project system by **31 October, 2022 Monday (noon)**.
2. The "Project Specification and Design" presentation will be given during the same week of **Monday 31 October 2022** (depending on the availability of the markers).

Submission guide for the second semester (individual projects)

1. Digital pdf files of the
 - o "Project Specification and Design" documentation and
 - o "Project Specification and Design" presentation slidesmust be submitted through the Comp592 E-project system by **6 Marsh, 2023, Monday (noon)**.
2. The "Project Specification and Design" presentation will be given during the same week of **Monday 6 Marsh 2023** (depending on the availability of the markers).

Late Submissions

The University's standard lateness penalties will be applied. See Section 6 of the Code of Practice on Assessment for further details. Note that Work received more than five working days after the submission deadline will receive a mark of zero. For assignments that are required to be submitted electronically a working day is defined as the 24 hour period immediately following the submission date and time.

Other Penalties

1. If the electronic submission is not a PDF file, then 5 marks (out of 100 available for this assessment) will be subtracted.

However, the mark will not be reduced below the pass mark for the assessment. Work assessed below the pass mark will not be further penalised for electronic submission in an incorrect format.

Assessment

This assignment, both the "Project Specification and Design" report and the presentation are assessed, will contribute 20% of the total project mark. The mark will reflect both the quality of the document **and** the quality of the presentation.

Failure of this assessment can be compensated by higher marks on other assessments of the project.

The "Project Specification and Design" report and the presentation will be assessed by the supervisor and the co-supervisor.

For your guidance a copy of the feedback form that will be used to assess your Project Specification and Design (presentation and report) is available at the website of the course, more precisely

https://cgi.csc.liv.ac.uk/~comp591/2022-23/comp591SpecAndDesign_AssessForm.pdf

to be taken in conjunction with the University Marking Descriptors. The feedback forms completed by the supervisor and the co-supervisor in the Comp591 E-project system, including the overall grades independently given to this assignment by each of them, will be made available about two weeks after the end of the presentation week.

Presentation: Structure

1. Summary of Proposal

A brief statement of the background, aims and objectives of the project. A summary of the research and analysis carried out so far should also be included.

2. Design Overview

In the report and presentation, an outline of the design should be given (**the details should be put in the final project report**), according to methodology and techniques chosen in the specification. Although designs will vary according to the needs of particular projects a typical design of a software implementation will comprise

- a description of the anticipated components of the system and how they are to be organised;
- a description of data structures to be used by the system;
- algorithms to manipulate these data structures;
- a design of the intended interfaces;
- a description of the evaluation of the system; and
- ethical use of data, in particular, ethical use of human data and human participants.

Remember that the report and presentation should summarise the design work you have carried out: the talk is not intended to present all the details of the design.

The design should include **both the system design and evaluation design**.

If following an object-oriented design methodology one might include:

- Use-case diagrams;
- An interaction chart (sometimes called an event trace);
- The objects to be used in the system;
- Attributes and methods of objects;
- Pseudo-code for the key methods;
- Interface design;
- Evaluation design.
 - what criteria will be used to evaluate whether the system is successful;
 - how to assess these criteria;
 - who will be involved in the evaluation;
 - Where appropriate, 3rd party evaluation of the software/computer system/application developed on the project, and/or customer feedback, be obtained in strict accordance with

ethical use of the project 3rd party evaluation human participants

- explicitly state if human participants be involved for the project 3rd party evaluation;
- if human participants be involved for the project 3rd party evaluation,
 - explicitly confirm that the CS Department ethical procedure for MEng projects 3rd party evaluation to be followed.

- Interface design;
- Some other additional design methods may be included;
 - Data flow diagram;
 - Navigation path diagrams;
 - Storyboards;
 - Functional descriptions or components.
- Evaluation design.
 - what criteria will be used to evaluate whether the system is successful;
 - how to assess these criteria;
 - who will be involved in the evaluation;
 - Where appropriate, 3rd party evaluation of the software/computer system/application developed on the project, and/or customer feedback, be obtained in strict accordance with ethical use of the project 3rd party evaluation human participants
 - explicitly state if human participants be involved for the project 3rd party evaluation;
 - if human participants be involved for the project 3rd party evaluation,
 - explicitly confirm that the CS Department ethical procedure for MEng projects 3rd party evaluation to be followed.
 - Use for your project the MEng project 3rd party evaluator Information Sheet and the MEng project 3rd party evaluator Consent Form templates. Include into your design documentation the required human participants information sheet and consent form to be signed by the human participants on your project.
 - what testing will be carried out;
 - what kind of conclusion do you expect from evaluation.
- Ethical use of data, including use of human data & human participants:
 1. ethical use of data
 - explicitly specify whether you use
 - Synthetic data,
 - or
 - Real Non Human data
 - explicitly confirm an ethical source of the data,
 - If appropriate, confirm the University or a relevant Professional Body Ethical approval has been obtained for the use of the data in your project.
 - or
 - Real Human data:
 - explicitly confirm an ethical source of the data
 - explicitly confirm that the University Policy on ethical use of human data is followed: here is the flow chart for the University Ethical approval.
 - explicitly confirm that the University or a relevant Professional Body Ethical approval has been obtained for the use of the data in your project.
 - be aware that only the following types of data do not require Research ethics approval:
 1. information freely available in the public domain;

2. anonymised records and data sets that exist in the public domain

2. ethical use of human participants (other than project 3rd party evaluation)
explicitly state if human participants will be involved in the project; if human participants are to be involved in the project, explicitly confirm that the University ethical procedure will be followed: here is the flow chart for the University Ethical approval; explicitly confirm that the University or a relevant Professional Body Ethical approval has been obtained for the use of human participants in your project; include into your design documentation the required human participants information sheet and consent form to be signed by the human participants on your project.

For a project involving the empirical investigation of some hypothesis one would normally expect to see in addition things such as:

- A statement of the hypotheses to be tested;
- A description of the test data to be used;
- An experiment design, the experiments to be performed, any control to be used;
- A description of how the results will be analysed, including any statistical techniques that will be used;
- Anticipated conclusions.

For a project attempting to devise new algorithms one would normally expect to see in addition things such as:

- A description of the problem to be solved;
- A description of the existing algorithms of related problem and a critical evaluation of them (e.g., why they are not applicable in your project);
- A description of the approach used to solve the problem;
- A description of how the new algorithms will be analysed, including mathematical and experimental analysis;
- For the mathematical analysis to be carried out
 - A description of the mathematical model to be used;
 - A description of the performance metric the algorithm will be measured, ranging from correctness, running time, optimally or approximability for some objective functions;
 - A description of the control against which your algorithm is compared, e.g., the optimal algorithm;
- For the experimental analysis to be carried out
 - An experiment design, the experiments to be performed, any control to be used;
 - A description of how the results will be analysed, including any statistical techniques that will be used;

The **important** thing is that the Specification and Design documentation and presentation clearly show the methodology which will be followed, and that the design has been carried out with sufficient attention to detail to inspire confidence that it can be realised, tested and evaluated in the time remaining for the project.

3. Review against Plan

This is the plan produced as part of the specification, showing what has been completed, and the progress to date. Any necessary changes to the plan should be indicated also. (You are expected to include the Gantt Chart again.)

