COMP591: Final Project Report (and Individual Reports)

Background
The purpose of this project report is to provide a complete record of all the work carried out by you.

Learning Outcomes
After completing the Final Project Report and Individual Reports students should be able to:

- work effectively and cooperatively within a team, taking on various roles 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;
- evaluate in a critical fashion the work the group has done, and to place it in the context of related work;
- collaboratively produce a report describing the conduct of the project, the solution produced and giving a critical evaluation of process and solution.

Description of the Task
Each group is asked to produce a Joint Final Report and Individual project reports for their project.

For semesters 1 and a two. Student must write a (joint) Final Report. It must be self contained, and contain a complete record of the work carried out. A target of 10,000 words is recommended, with a maximum of 15,000 words. Appendices will not be included in the maximum word limit, but examiners will not normally expect to read appendices in detail. A zip file containing the project archive material (including source codes, pictures used, etc.) should be submitted through the E-project system, please see submission details below.

It is recommended that you follow the template available at the website of the course for the cover of your dissertation.

The content of the dissertation is at your discretion, and will depend on the nature of the project, but for a typical project involving the development of a piece of software, the suggested structure of the Joint Final Report is described below.

The Joint Final 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).

For semester 1: In addition to the joint final project report, each student will produce an **Individual Project Reports** up to two A4 pages, outlining their individual contribution to the project, their learning experiences and an assessment of their own contribution and that of the other team members to the project, by using the form available at https://cgi.csc.liv.ac.uk/~comp591/2021-22/comp591-peer-assessment.pdf

Submission and Deadlines for semester 1:

1. Digital pdf file of the joint final report must be submitted through the Comp591 E-project system by **Friday 16 December 2022 (noon)**.
2. Digital archive zip file containing source codes, and other project archive material must be submitted through the Comp591 E-project system by **Friday 16 December 2022 (noon)**.
3. Digital pdf file of each student's individual report must be submitted through the Comp591 E-project system by **Friday 16 December 2022 (noon)**.

Submission and Deadlines for semester 2:

1. Digital pdf file of the joint final report must be submitted through the Comp592 E-project system by **Friday 12 May 2023 (noon)**.
2. Digital archive zip file containing source codes, and other project archive material must be submitted through the Comp592 E-project system by **Friday 12 May 2023 (noon)**.

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 no stand alone pdf file with the joint final report is submitted, then 5 marks (out of 100 available for this assessment) will be subtracted for not submitting a stand alone pdf file with the project report.
2. If no stand alone pdf file with an individual report is submitted, then 5 marks (out of 100 available for this assessment) will be subtracted for not submitting a stand alone pdf file with the individual report.
3. If, apart from the zip file with the source code and other project material, the electronic submission contains files in other than PDF formats, then 5 marks (out of 100 available for this assessment) will be subtracted for each non PDF file submission.
4. For the individual reports, for every page (even if the page contains a single character or if the page serves as a title page with your personal information) over the limit of 2 pages, 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 exceeding the page limit.

Assessment

This assignment will contribute 60% of the overall mark for the project. Failure of this assessment can NOT be compensated by higher marks on other assessments of the project.

The Joint Final Report will be marked by the supervisor and the co-supervisor. Individual report and peer assessment will be used to derive an assessment of each individual student based on moderating the assessment of the work of the group.

For your guidance a copy of the feedback form that will be used to assess your dissertation can be found at https://cgi.csc.liv.ac.uk/~comp591/2022-23/comp591DissertationAssessForm.pdf.

The mark of the whole project will be made available on Spider Student Web along with the results for all other modules.

Joint Final Report

The content of the dissertation is at your discretion, and will depend on the nature of the project, but for a typical project involving the development of a piece of software, the following elements of the dissertation would be expected:

1. ABSTRACT

   A one-page summary of the project as a whole. This MUST be included for all projects.

2. INTRODUCTION

   This will give a brief overview of the project including

   - What problem is addressed by the project?
   - What are the aims and objectives of the project?
   - What are the challenges of the project?
   - What is the solution produced?
   - How effective is the solution / how successful has the project been?

3. BACKGROUND

   This will give all the background of the project including

   - Background of the problem to be solved.
   - Existing solutions/approaches to the problem, if any exist, and a comparison with the solution produced in the project.
   - Reading and research done to understand existing approaches, acquire the necessary information and skills to carry out the project.
   - A clear statement of the project requirements.

   References to all sources consulted are expected.

4. DATA REQUIRED:

- what data were needed for the project and where it was obtained from;
- ethical use of data, including use of human data & human participants:
  1. ethical use of data
     - explicitly specify whether you used
       - Synthetic data,
         or
       - Real Non Human data
         - explicitly confirm an ethical source of the data,
         - confirm the University or a relevant Professional Body Ethical approval has been obtained for the use of the data in your project.
         - where applicable, include into appendix the University Ethical approval obtained by your 1st supervisor for the project on your behalf.

         or
       - Real Human data:
         - explicitly confirm an ethical source of the data

- explicitly confirm that the University Policy on ethical use of human data has been 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.
- where applicable, include into appendix the University Ethical approval obtained by your 1st supervisor for the project on your behalf

- 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

ethical use of human participants (other then project 3rd party evaluation)
explicitly state if human participants were involved in the project;
if human participants were involved in the project, explicitly confirm that the University ethical procedure has been 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;
submit to your project 1st supervisor the hard copy originals of the consent forms signed by the human participants on your project, for the subsequent 1 year storage at the Departmental Student Office.
for completeness of your project report, you might consider to include into the appendices:

- **blank documents** you have developed for your project human participants, namely: your project information sheet, the questionnaire(s), and your project human participant consent form,
- if applicable and necessary, then the fully **anonymised** copies of signed consent forms.

5. DESIGN:

This will give a description of the design.

- The organisation of this section should be the same as for the design documentation, and full details of the design are required. Typically it will comprise
  - a description of the anticipated components of the system and how they are to be organised;
  - a description of data structures used by the system;
  - algorithms to manipulate these data structures;
  - a design of the intended interfaces.
- Depending on the project and approach used, the followings are expected (refer to the guideline of the design stage for details):
  - *Object-oriented design methodology:* Use-case diagrams; An interaction chart; The objects to be used in the system; Attributes and methods of objects; Pseudo-code for the key methods; Interface design.
  - *Traditional design methodology:* Data dictionaries; System boundary diagrams; Entity-relationship

diagrams; Logical table structures; Physical table structures; Transaction matrix; Pseudo-code for the key methods; Interface design.

- *Empirical investigation of hypothesis:* in addition, the following is expected
  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.
- *Devising new algorithms:* in addition, the following is expected
  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.

- All design documentation, representing the final design used on the project should be supplied.
- Any **modifications** made to the design presented in the design documentation and presentation should be stated and justified. ***

It is often best to include the full details of the design as an appendix. In such a case, the design chapter in the main part of the project report should only discuss the most important elements of the design to your design report and state clearly what other elements will be given in the appendix.
Keep in mind that examiners might not look at all the details of the material included in the appendices. So, make sure that the really important points of the design are explained here.

6. REALISATION

This will give a description of how the design was implemented and a description of the testing of the implementation. The following is expected:

- Description of how the design was implemented for each stage and each component of the system.
- Description of problems encountered during implementation and the solutions to these problems.
- Changes made to the design in the course of implementation and the justification.
- Description of various testing of the implementation of each stage and each component of the system including test cases used, expected results, and actual results.
- Snapshot of code listing of key methods and a small number of screen shots may be included. However, typically, full code listings, detail screen shots, and test runs will appear as appendices.

Again, keep in mind that examiners might not look at all the details of the material included in the appendices. So, make sure that the really important points of the implementation and testing are explained here.

*** Typically, there are two cases of modifications as compared with the design stage:

1. If the design has been revised since the design stage and the implementation now follows this revised design, the DESIGN section should present the revised design together with comments explaining and justifying the changes.
2. If the design has not been revised since the design stage, but the implementation differs to a lesser or greater extent from that design, the DESIGN section would be pretty much identical to the original design

documentation but the REALISATION section would explain the differences between design and implementation.

7. EVALUATION

This gives an evaluation of the project, including

- A description of how the project is evaluated, including
  - What criteria are used to evaluate whether the system is successful?
  - How these criteria are assessed
  - Who is involved in the evaluation?
- Your critical evaluation of your project results/outcomes.
- Your critical evaluation of the strengths and weaknesses of your project as carried out.
- 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 were involved for the project 3rd party evaluation;
- if human participants were involved for the project 3rd party evaluation,
  - explicitly confirm that the CS Department ethical procedure for MEng projects 3rd party evaluation has been followed.
  - submit to your project 1st supervisor the hard copy originals of the consent forms signed by 3rd party evaluators on your project, for the subsequent 1 year storage at the Departmental Student Office.
  - for completeness of your project report, you might consider to include into the appendices:
    - **blank documents** you have developed for your project 3rd party evaluation, namely: blank copies of your project information sheet, consent form, and questionnaire(s),
    - if applicable and necessary, then the fully **anonymised** copies of questionnaire(s), and/or fully **anonymised** copies of the signed consent forms.

8. LEARNING POINTS

At least one page of summary of the key learning points in the project.

9. PROFESSIONAL ISSUES

At least one page of discussion of how your project related to the codes of practice and conduct issued by the British Computer Society.

10. BIBLIOGRAPHY

A properly cited list of books, articles and other materials consulted during the project and/or referred to in the dissertation.

11. APPENDICES

Appendices are meant to contain detailed material, required for completeness, but which are too detailed to include in the main body of the text. Typically they should contain code listings, details of test data, screen shots of sample runs, a user guide, full design diagrams, instructions for unpacking and mounting any software included with the dissertation and similar material. A zip file containing the project archive material (including source codes, instructions on how to run the software, pictures used, etc.) should be submitted through the Comp591 E-project system. If your system is available on-line, you should provide instructions of how to access the system via the internet.