

Royal Holloway, University of London

Department of Computer Science MSc Programmes

Individual Project — Rules and Guidelines

1 Introduction

This booklet concerns individual projects for Department of Computer Science MSc programmes. It contains all the information that you will need, from choosing a project title to writing up, submitting and being assessed.

Your project is a piece of individual work done under the supervision of an academic member of staff. It includes the preparation of a dissertation, which will be assessed by the examiners together with any software that you will have produced.

The project is worth 60 credits, which corresponds to 12 weeks of full-time work. The total working time associated with the project (including the choice of the project, project meetings and all independent work) should be about 600 hours.

1.1 Types of project

Different projects may stress theoretical, methodological, or programming (implementation) aspects of a problem or case study. It is important that you discuss the specific requirements of your chosen project with your supervisor.

1.2 Why is the project so important?

Doing a project is an opportunity to demonstrate your ability to develop, individually, a substantial piece of work. Success in your individual project will provide evidence of your skills to any future employer, and students often use their project supervisors to provide job references after completing their degree.

Your project should be an enjoyable part of your studies: you get to choose a topic of personal interest and to study it in depth.

2 Choosing a project and finding a supervisor

2.1 Choosing a project title

A list of titles will be made available on the Moodle page of the Individual Project by the date set in section 3. You will be invited to complete (electronically) a project ballot form by choosing from the list those projects you may be interested in doing.

You can return the completed ballot form any time after Ballot start date, but you **must** return your completed ballot form by the ballot close date; otherwise a project will be chosen for you.

Please note that by choosing a title you are not choosing a supervisor. This is because each academic member of staff has a limited capacity for supervising project students. Therefore, it is essential that you choose as wide a range of titles as possible on your ballot form.

2.2 Proposing your own project title

You may propose your own project, especially if you are registered for a 'Year in Industry' degree so that you can build on the experience that you will have gained during your placement. If you decide to do this, your proposal will have to be accepted by the Project Committee as a valid project. This is to ensure that all projects have sufficient academic content, and that they can be completed in available timeframe.

In order to propose your own project, you need to submit a one-page description to the Project Committee before the closing date for the ballot. The description should outline the **aims** of the project, give the **background** of the proposed work, and specify the **deliverables**. The deliverables should be worded as clearly as possible – the success of your project will be assessed against them. Some deliverables should be marked as **early**; you will aim to achieve them within a month of starting the project. Prototype programs and proof-of-concept results are good candidates for early deliverables. **Late** deliverables will be achieved towards the end of the project.

If you plan to use any data supplied by your placement provider (or another company), you must obtain their permission before proposing your own project. The company may impose some restrictions, e.g., ask you to withhold some sensitive information or refer to "company X" or "customer 123456" in your project report. If you need advice on your particular case, please contact the Project Committee.

You are welcome to contact a potential supervisor or supervisors to discuss your proposal, but you must remember that academic members of staff will **not** have the final word in the allocation of projects. The Project Committee will consider the academic merit of your proposal and endeavour to assign you a suitable supervisor.

In any event, it is essential that you complete a ballot form by the deadline so that, in case we cannot find a supervisor for the project that you proposed, you may be allocated one of the projects from the general list.

2.3 Prerequisites

Some titles have *prerequisites* associated with them. Typically, this means that you must have taken (or be taking) certain modules in order to do the project. It is also possible that certain titles on the project list may not be available for the degree for which you are registered. All such prerequisites will be clearly indicated on the Moodle site.

If you are doing 'Computational Finance' or 'Computational Finance with a Year in Industry', please note that you will need to choose an equal number of titles offered by the Department of Computer Science and the Department of Economics.

2.4 The allocation process

The allocation of a project and supervisor will be made on the date specified in Section 3. Please note that, if we have not had a ballot paper from you by the ballot close date, we will make an allocation on your behalf.

2.5 Progression rules

You can only progress to the project after you have passed the taught part, i.e., if you have achieved a pass mark (at least 50%) in every module or a mark of 40–49% in module up to a total of 40 credits.

If you did not pass the taught part and are given an opportunity to re-sit examinations according to the regulations, you must enter the project ballot again the year after. Please note that we cannot guarantee that you will be allocated the same title and supervisor.

2.6 Projects for Year-in-Industry students

If you are on a Year-in-Industry programme, you enter the project ballot at the same time as all other students. This is so that, if for some reason you do not go on a placement, you do the project according to the same timetable as the other students. If you do go on a placement, you will be given a chance to revise your topic towards the end of the placement in order to be able to capitalise on the experience that you will have gained. You will need to enter the ballot again.

2.7 Projects for part-time students

Part-time students enter the project ballot during the final year of their studies.

3 Important dates

Project Allocation:

Project list available Monday, 21 January 2019

Project ballot form program available Monday, 4th February, 2019

Deadline for completing the ballot form Friday, 8th February, 2019

Final allocation Friday, 8th March 2019

Non Year in Industry Full-Time Students:

Project plan agreed (*) Friday, 28 June 2019

Draft dissertation ready (*) Friday, 16 August 2019

Submission deadline Monday, 2 September 2019/14:00

Year in Industry Students (2017 entry cohort)

Project plan agreed (*) Friday, 12 July 2019

Draft dissertation ready (*) Friday, 30 August 2019

Submission deadline Monday, 16 September 2019/14:00

Part-Time Students (2017 and earlier entry cohorts)

Project plan agreed (*) Friday, 28 June 2019

Draft dissertation ready (*) Friday, 30 August 2019

Submission deadline Monday, 16 September 2019/14:00

(*) The project plan and draft dissertation are **not** formally submitted or graded. The plan should be agreed between you and your supervisor in whatever form you both find convenient. You give the draft dissertation to your supervisor so that he or she could provide you with feedback before the actual submission. Not keeping with these deadlines is an indication that your project is not on the right track and you must catch up on the work.

4 Organisation of the project

This section describes the process of doing an individual project. The basic structure is that students meet with their supervisor on a regular basis.

4.1 Student's responsibilities

Titles and supervisors are allocated during Term 2 to give you enough time to start thinking about what precisely you will do in your project. You should contact your supervisor after the project allocation is published. The supervisor will give you some initial guidance, such as background reading material or topics to think over before the project officially starts. He or she may not be available immediately for meetings though. Part-time students, who have a lighter exam load, may engage in more intensive project work. In some cases, for example, for students doing the project at the department of Economics, the initial stage may require producing a formal project proposal on the allocated topic.

You are encouraged to discuss the aims and objectives of the project with the supervisor. If your supervisor agrees, you may make some changes to the topic that you were initially allocated. *If you are on a Year-in-Industry degree, you should arrange a meeting with your supervisor a month before the end of your placement to discuss any changes that you would like to make to your topic or plan to build on the experience that you will have gained.*

You must start working formally on your project after the progression decisions are published in June or, if you are on a Year-in-Industry degree, at the end of your placement. You should organise a meeting with your supervisor. By the deadline given above you and your supervisor should finalise the detailed work plan including aims, objectives, methodology, preliminary background research, milestones and weekly schedule of work. The plan is not formally submitted or graded, but you will receive feedback from your supervisor. The role of the deadline is to make sure all students get a clear idea of their project structure.

The frequency of the meetings from then on may vary. During the first month of the project it is advised that you meet your supervisor at least on a weekly basis. Later, the intervals between meetings may increase. Where appropriate, and by mutual agreement, the meetings may be carried out over Skype or a similar communication system. You may expect a total of about three hours of your supervisor's time.

4.2 Your project meetings

The typical duration of a meeting is 30 minutes. The purpose of the meetings is to discuss your project work. You should plan these meetings ahead of time.

It is essential that you do not miss agreed meeting dates/times, so let your supervisor know in advance if you would like a meeting to be rescheduled.

It is up to you to make use of your supervisor. *It is not the supervisor's role to chase you on your progress.*

It is vital that you keep records of *all* project meetings. In particular you *must* record any deadlines given to you and any deliverables required of you. Please take a note book with you to all meetings.

4.3 Your SVN repository

It is very important that you keep all reports, programs, notes etc. on your SVN repository.

You are advised to keep all individual project material in a sub-directory of your SVN repository called 'IndividualProject'. It is also a good idea to keep programs, notes, reports, etc., in appropriate sub-directories of your main individual project directory (for example: Notes, Reports, Programs). The SVN repository cannot take all datasets, log or auxiliary files though.

4.4 Project milestones

Your project plan will need to include all important milestones and the dates by which they should be completed. Each milestone is associated with a *deliverable* that you should discuss with your supervisor.

It is clear that the milestones will be specific to your project and reflect the nature of the work that you will do. The following is a general example of milestones associated with a programming-oriented project:

- Review of Current Theory/State of the Art Completed
- Requirements Analysis
- High-Level Design
- First Prototype Program
- Specification of Testing Procedures
- Outline of Dissertation
- Final Draft of Dissertation

4.5 Project diary

It is also important that you keep a *diary* or workbook log of your project work. This will be invaluable when you come to write the dissertation as it will help you remember problems that you

found and dead ends that you investigated. You should also use your diary as a basis for discussions with your supervisor about problems and progress.

In order to help you to keep a diary, the service <https://pd.cs.rhul.ac.uk/> is provided. It enables your supervisor to monitor your progress. You should log in to the diary service and make notes at least on a weekly basis.

4.6 Supervisor's responsibilities

Your supervisor is there to monitor and advise you on your progress, not to teach you on any aspect of your project. Your supervisor should supply references to new, relevant material and be willing to discuss any questions that you may have after studying it.

It is your supervisor's responsibility to attend each meeting previously agreed with you, or to re-organise the meetings if this is not possible. Your supervisor will keep an attendance register of your meetings and a milestone record. The register is important as evidence of your level of engagement with the project. The milestone record is important as evidence of how progress was made during the project. These records may be kept electronically.

5 Documenting the project

Your dissertation is the culmination of your project and will be the final record of your achievements. However, as you work on your project, you should keep together all the documents that you produce (on your SVN archive), including early ideas that you will not necessarily pursue or fragments of code. These will all be essential for assessing your progress.

You should read the section on project marking in order to better understand the criteria used in assessing a project.

5.1 Writing the dissertation

You should aim to agree on the outline of your dissertation with your supervisor as early as possible. This will allow you to write up your work as you go along and thus avoid panic in the approach to the submission deadline.

Your supervisor must see a complete draft of your dissertation by the date set in section 3 so that their feedback can help you write the final version to the highest standards.

You should discuss with your supervisor what other deliverables will be required in addition to the dissertation (kept on SVN but not necessarily printed out). For example:

- any test results referred to in the dissertation;
- examples showing the use of any software produced during the project;
- a working program with instructions on how to execute it;
- copies of papers or other reference material used for the project.

5.2 Dissertation format

The dissertation should follow an approved template. Templates for Word and LaTeX are provided on Moodle.

5.3 What your dissertation *must* contain

Your dissertation must contain a section motivating the project and giving the original project aims. In this section, you should also explain how you think that the work developed in the project will help in your future career.

You must also write an assessment section that includes an appraisal (self-evaluation) of your effort: How did the project go? What did you do right or wrong? What have you learnt about planning and executing a project? Where next?

5.4 What your dissertation *should* contain

Because all projects differ, it is hard to prescribe a particular structure for any dissertation. The following is only a general guideline but points to elements that any dissertation *must* contain.

1. Your dissertation *must* contain a short **abstract** summarising the work that you developed.
2. It *must* also contain an **introduction** including the motivation, aims and objectives of your project. You should also explain how you think that the work developed in the project will help your in your future career.
3. It *must* also contain a **background research** section. This might include a survey of relevant literature, programming methods or techniques, as well as any relevant discussion on different options that were available to you and a justification for any decisions that you will have made.
4. If a key part of your project is the development of a **software product**, then you will need to include sections describing the **software engineering method** that you followed and detailing the results obtained during the different development phases such as **requirements analysis, design, implementation** and **testing**. Remember that you need to include a **user or installation manual**.
5. If your project is mostly **theoretical**, then you should include sections detailing the **development** of your theory. This might include **small programs** to investigate certain aspects, **explanations of algorithms**, or descriptions of any **particularly hard bits of theory**. A theoretical project will probably have a section on **results** and some sections on their **analysis**.
6. If your project involves computational experiments with real-world data, you will need a section or sections on **experimental results, analysis**, and **conclusions** derived from the experiments.
7. Every dissertation should have a **professional issues** section as described below.
8. Every dissertation needs some kind of **self-assessment** section including an appraisal of your effort: How did the project go? What did you do right/wrong? What have you learnt about planning and executing a project? Where might you go next?

9. For Year-in-Industry students, the **self-assessment** section should also include a reflection on how the placement has contributed to the project.
10. A **bibliography** of all work that you consulted to understand and develop the project *must* be included and properly referenced in the text.
11. If **any code** has been written for the project (whether the project is development or experimental), you should have a section on **How to Use My Project** that tells the markers what programs have been written, what examples they might look at, or demonstrations that they might run, or simply where to find any software sources.
12. You may want to include several extras such as a **program listing** (using, for example, psify), **sample output**, or **layout diagrams**. It is not required to include all code you have written as part of your dissertation; you can submit it in separate folders.

5.5 Professional Issues in your final project report

Ethical behaviour is concerned with what is good or bad, with moral duty and obligation and as such deals with opinions and beliefs.

Professionalism in computing is concerned with the societal impact of computer technology and the creation and understanding of policies for the ethical use of such technologies.

Professional bodies such as the British Computer Society (BCS) and the Association for Computing Machinery (ACM) help ensure professionalism and ethical behaviour by providing standards and a code of individual conduct: guaranteeing certain levels of competence, integrity and a commitment to the interests of all end-users and other stakeholders.

After completing a Royal Holloway Computer Science degree we expect that you will be computing professionals who behave in an ethical fashion. In your project, as well as the theory and practise essential to your chosen topic, you will have acquired skills in time management, prioritisation and written presentation.

You will have encountered some professional issues: correct citation, licensing, accessibility etc.

You *must* have a short section on professional issues in your final report.

5.5.1 What is required

The section in your project report must be clearly indicated. It can either be part of the general flow of the report or it can be an appendix. It must be approximately 1,000 words.

You must choose a topic that is relevant to your project (see the following section for examples). Then you could:

- describe an example from the public domain of what can happen when professional issues are not properly addressed; or
- write about how a particular issue has been of concern to you in your project; or
- describe some professional issue that has arisen during your project and discuss its ethical or practical importance.

This section must be reflective and thoughtful and is a requirement for a successful project submission.

5.5.2 Possible Topics

Professional Issues occur wherever computing meets society. As such they are always concerned with how people interact with computers and software. This is a very wide area and you may well choose a topic not listed below but these are given as guidelines to help you.

- Usability - accessibility, replacing humans, artificial intelligence.
- Plagiarism - correct citation, using code with acknowledgement.
- Licensing - shareware, open source, copyright, patenting, reverse engineering.
- Safety - reliability, economic impact, trust, provided "as is" clauses.
- Privacy - web privacy, legal issues, data usage.
- Monopoly - proprietary formats, tie-ins, cartels, DRM, Google, Amazon, Microsoft, Apple
- Management - appropriate costing of time and resources at the start of a project. Revision during project. Consultation with stakeholders.

5.6 The size of your dissertation

Your dissertation should be up to 50 pages (approximately 15000 words) and formatted using Word or LaTeX (remember that you should use an approved template; page layout and font should not be changed). The limit includes the bibliography, tables, pictures, etc.

Please note that this limit is an *upper bound* and not the suggested length. A successful dissertation may well be shorter as long as it adequately covers all the required material. If in doubt, please contact your supervisor for advice specific to your dissertation topic. For example, for dissertations done at the department of Economics the typical size of a dissertation is usually in the range of 10000-12000 words.

Any material (such as code that you may have written) that is not essential, can be included in an Appendix at the end of the dissertation, outside the page limit. Please note that examiners will not necessarily read the Appendix.

6 Information sources

6.1 Plagiarism and acknowledgement of sources

Your project and dissertation must be your own work. Plagiarism (the unacknowledged use of other people's work) is a **very serious offence** and will be severely penalised.

Nonetheless, it is in the nature of an individual project that part of the material included in the dissertation will not be original. You will have researched around your subject and discovered many sources of information. It is vital that any quote made from any source (including the web) should be properly acknowledged, both where it is used *within the dissertation text*, and at the end of the dissertation in the bibliography. For example:

Henry Smith [1] states that 'The problem of wild animals on campus can only be solved by the introduction of even wilder animals which will eat them.' However, the results obtained in this project seem to contradict him.

In this case, the citation [1] would refer to a bibliography entry such as

1. Smith, H. *Modern University Life*. Wombat Press, 1997.

If you express someone else's idea in **your own words**, then you **must also acknowledge** their original expression of the idea. For example:

Smith [1] believes that an infestation of wild animals in a university can only be cured by introducing suitable predators. However, the obviously recursive nature of his proposal led me to consider more feasible alternatives.

If you use examples from a lecture course or a book to illustrate your background theory, then you must acknowledge the original source; similarly if you follow a book or lecture notes when presenting background theory. For example:

The following sequence of definitions is based on [1], with simplifications due to the fact that we are only considering *finite* widgets.

Whereas it is perfectly acceptable that any program that you develop includes pieces of code that you **did not write yourself**, you *must* identify them and say where they came from. For example, if you copy an implementation of a particular algorithm from a book, you must make it clear that you did not write those lines of code.

Note that there is **no outright ban** on the use of imported code: sometimes you have no alternative but to use a freely available library or a clever hack from stackoverflow to do a particular task. You should discuss all such cases with your supervisor to make sure that the use of the borrowed code is consistent with the purpose of the project and you **must acknowledge** all such cases in the dissertation.

A general rule is that if you are in doubt about needing to acknowledge a source, you probably should. Do ask your supervisor for advice.

Finally, under no circumstances should copyright material be included in a project dissertation without the proper permissions having been obtained, and any such inclusion should be agreed with your supervisor.

6.2 Ethics and intellectual property

While working on your project you may be approaching companies and other (state, charitable etc) organisations and asking them for information and data. It is your responsibility to check with the information provider whether and to what extent you can use that information in your research and to strictly adhere to all conditions stipulated by the information provider. For example, some companies and organisations may allow limited use of information in research but strictly prohibit further unauthorised dissemination of information; make sure you follow the conditions precisely.

As a general rule, if any information remotely appears sensitive, check with the information source whether you are allowed to include it in your dissertation. If a matter is complicated, discuss it with your supervisor.

This is particularly important if you have been on an industrial placement and want to use the information you acquired during the placement in your project. Always check with the company if you are allowed to use that information and to what extent.

On the Internet there are public repositories of datasets (such as UCI Machine Learning Repository at <http://archive.ics.uci.edu/ml/>) widely used by researchers. If you use information or data from such sources, it is your responsibility to check their distribution policy (e.g., citation requirements) and adhere to it.

Finally, you are bound by Royal Holloway intellectual property policy available at <http://www.rhul.ac.uk/iquad/services/researchsupport/contractsandip/ippolicy.aspx>.

7 Submitting the dissertation

This section tells you how to produce and submit the dissertation. It also defines the circumstances in which the submission deadline can be extended.

You must submit an electronic copy of the dissertation, software, and any other relevant material in using the departmental anonymous submission mechanism.

7.1 Electronic Submission

In order to submit, copy all your submission files into a directory on the *teaching* server, e.g., **MyProject/**. Please use a sensible subdirectory structure for your submission directory. Your report must clearly document the structure of your submission directory. After copying all files into **MyProject/**, run the script **submitCoursework MyProject** from the parent directory. If you are not on a year in industry programme, **choose the appropriate project course code for your programme** when prompted by the script and then choose **project**. You will receive an automatically generated e-mail with a confirmation of your submission. Please keep the e-mail as a submission receipt in case of a dispute; it is your proof of submission. No complaints will be accepted later without a submission receipt. If you have not received a confirmation e-mail, please contact Support.

If you have been on a placement, you will need to submit a project and a placement report. Prepare two directories, say, **MyProject/** and **MyPlacement/** . Run the script **submitCoursework MyProject** from the parent directory, and choose **choose the appropriate project course code for your programme** and **project** when prompted. Then run the script **submitCoursework MyPlacement** and choose **the same course code as above** and **placement** when prompted.

You can submit many times: each time you submit the earlier version is overwritten. You are therefore encouraged to submit early versions long before the deadline. Note that, however, if you submit **after** the deadline, the system will mark your submission as late. Since all previous submissions are erased, there will be no way to show you submitted on time earlier.

You must make sure that it is possible for your project markers to run any programs that you have produced as part of your project. You need to submit the following:

- the report in the **pdf** format;
- source files for any programs you have written;
- any makefiles;

- **essential** results files, graphs, diagrams etc (see below for a discussion of what you should **not** submit);
- other files specific to your project.

In the submission directory you should include instructions for building any programs included from the source code. If your program was not built on the departmental computer system then you must say how it was built on whatever system you used.

Remember that your dissertation must include **full instructions on running any programs that you submit**:

- It is your responsibility to make sure that the examiners are able to run your program.
- Your dissertation must say where your program is located (relative to your submission directory).
- If you have used your own computer, then you must say where all relevant files are located relative to your submission directory, and how to install the files needed to run your project.

It is also important that your submission should be of a manageable size. It is no use submitting gigabytes of intermediate results, for example: the marker will not be able to go through them anyway and the large submissions may overload the system. Therefore an **upper limit of 100 megabytes** is set.

As a basic rule, if a file has been written by you, you must submit it; if a file has been downloaded or generated by one of your programs, think twice about submitting it. Here are guidelines on what **not** to submit:

- large datasets: if a dataset is available from the web, include a reference with a url in your project report; if the dataset is uploaded on the departmental cluster, just leave it there (making sure the file has read permissions) and quote the path in your report;
- raw output, log files, and intermediate files: submit only the essential files or a small representative selection; the examiner should be able to ascertain you carried out the work but does not need to (and cannot) see everything; instead of raw output, submit graphs or visualisations.

If you cannot fit your submission under the 100 megabytes limit, speak to your supervisor first and then the project committee.

7.2 Student Feedback Form

Students should fill in the project feedback form. Instructions on how to obtain and submitted will be provided before the dissertation submission date.

7.3 Extensions

Normally, extensions for projects will be given only for medical reasons. An extension can only be given by your academic advisor, with the agreement of your project supervisor and the Project Committee. An email confirming your extension **must be sent to the departmental administrator**. If a

student is not granted an extension and hands in the project late, a penalty will be applied according to College regulations.

8 Assessment

This section is concerned with the overall assessment of a project. Ultimately, the final mark of the project will be determined by the external examiners to ensure that project marks are commensurate with individual projects across the University.

8.1 The criteria

Examiners should mark from 0%–100%.

Because every project is different, it is impossible to give a universal marking scheme. However, the following guidelines specify the features which a project must have in order to be awarded a mark in each class range.

1. A **distinction project (70%-100%)** should be outstanding in most respects. It should show a mature, accurate grasp of the issues raised by the topic and should conduct a sustained, coherent argument in a style that is fluent. It should demonstrate an excellent knowledge of appropriate reference material, techniques and relevant theoretical perspectives. It should also demonstrate excellent technical/practical skills where these are needed. It must have a clear professional issues section. So that distinction marks may make their proper contribution to the final average, it is important that they should not be limited to the low 70s. Examiners should use the full band analogously to others and be prepared to give marks above 80% for outstanding work.

A mark between 70% and 79% should clearly be a distinction project.

A mark of 80% or more should only be given for projects with excellent dissertations and where the student has achieved one of the following:

- The achievement of the student would be a very good basis for continuing research in the area.
- The practical work is of such a high professional standard that it could be distributed without significant extra effort.
- The student has worked independently, exceeded expectations, and clearly demonstrated a very deep understanding of their results.

Exceptional projects may occasionally be awarded a mark in excess of 90%.

2. A clear **merit project (60%-69%)** should have many of the features characteristic of a distinction project. Creativity and originality or breadth and depth of response could compensate for some weakness in style or some incoherence of argument. Alternatively, a well-written thoughtful dissertation could compensate for a narrowness in the range of issues addressed. Projects in this class should contain little or no irrelevant material and should be generally well constructed.
3. A **borderline pass-merit project (55%-59%)** would show that the candidate has grasped the basic issues raised by the topic, but has not achieved the qualities listed for a distinction or

clear merit grade. There should be some theoretical analysis and/or experimentation and implementation. This grade might alternatively be awarded where the quality of argument is mitigated by clear weaknesses, e.g., a detailed dissertation with considerable insights, marred by a lack of background material, poor organisation of material or incomplete work or errors.

4. A **bare pass project (50%-54%)** gives some evidence that the main part of the topic is understood. However, recognition of issues is incomplete, and analysis and discussion is restricted. Evidence may be unbalanced or of dubious relevance with a tendency to excessive generalisation or unsupported assertions of a subjective nature.
5. A mark just above the pass/fail boundary represents a failure to approach the topic. The project may show some evidence of study but a failure to mobilise it as an implementation or with background theory, with a tendency towards incoherence.
6. A mark **up to 49%** should be used where the report has serious errors, or where there is little evidence of the candidate having studied, or where the report is poorly constructed, or where the report is not relevant for the topic.
7. Where only a few lines of work have been submitted, the candidate is not deemed to have made a serious attempt at the project and a mark of 0 — **Incomplete** — will be recorded.

8.2 What the markers mark

The above list is enough to classify each project submitted. Within these (wide) classification bands, markers will use many different criteria for assessing a project.

1. Difficulty. Each project title has the scope for an ambitious attempt, or a straightforward progression. Marks may be awarded for making an intelligent try at a more difficult goal.
2. Presentation. Presentation of the material and arguments in a way that makes their development clear to a computer scientist who is not a specialist in the project topic.
3. The Journey. Any project that required many new topics to be assimilated during the process should get credit for this.
4. Content. Has a minimum of ground been covered? Most projects should contain an exposition of an area of theory, as well as some practise.
5. Scale. Does the project represent work worthy of 60 credits?
6. Results. Obviously we are interested in results. However, **a good grade can be obtained for a project that is incomplete**. This includes non fully working programs, theories that are incomplete, etc. The work can still be judged against all of the other criteria above.
7. Review. The critical review or assessment section will be of most importance to the **second marker**. It demonstrates the student's appreciation of the difficulty and relevance of the work involved in the project.
8. Background. Evidence of a good understanding of the background theory or current state of the art.

9. Objectives. Clarity of statement of objectives.
10. The report must have a professional issues section.
11. The **first marker** may also award (or deduct) marks because of the conduct of the student. Did they attend meetings, did they meet deadlines?
12. The **first marker** may award (or deduct) marks in the case of students who worked completely independently (or who had excessive support).

8.3 The marking process

1. All projects will be marked by two independent markers, one of whom will be the project supervisor.
2. In the event of a small discrepancy (less than 10%) the marks will be averaged with a two-to-one weighting towards the supervisor's mark.
3. In the event of a larger discrepancy, a third independent marker will mark the project, and the projects committee shall seek agreement amongst all markers as the final outcome.
4. Markers will mark according to the marking criteria supplied and will justify marks with a short paragraph on the marking form.
5. A recommendation of **Incomplete** will be made to the external examiners for a student failing to submit their project.
6. No marking penalty will apply to a project submitted by a student on time or within the limits of an agreed extension. Normally, extensions will only be given for medical reasons. An extension can only be given by the academic advisor, with the agreement of the project supervisor and the Project Committee.
7. The marking penalty for late submission is 10% of the agreed mark for a project submitted within 24 hours of project deadline. After 24 hours no project will be accepted and a mark of Incomplete will be given.

8.4 Grievances

1. Students may complain only on grounds of insufficient monitoring, or inappropriate demands made by their supervisor.
2. In the first instance, a student should bring complaints to their supervisor.
3. If, after bringing a complaint to the supervisor, the student still has a grievance, then they should bring it to a member of the Project Committee.
4. If the Committee feels that the complaint is justified, and the student so wishes, the Project Committee will make representations to the supervisor.
5. If the Committee feels that a complaint is justified, then they will minute this and the grievance will be considered when assessing the project.