G54MRT Coursework 2 Specification

Overview

The goal of Coursework 2 is to individually design, prototype and test a ubiquitous computing system that employs sensor data in some way, and to document this through a written **report** which will be submitted for assessment. Along with Coursework 1, this forms the only formal assessment for this module.

A short concept **proposal** must be submitted part way through the module so that feedback and advice can be provided on appropriateness and difficulty of the project being undertaken. This proposal does not receive a separate mark, *however a penalty will be applied to the final mark if the proposal is submitted late or is not submitted*.

Contents

Requirements

Coursework 2 is an **individual** coursework. The report must be your own work, and the work reported in it must be your own work, including the design, implementation, testing and critical reflection. Any exceptions to this must be clearly identified and acknowledged:

- You can make use of pre-existing (e.g. found) images, text and other media within your application, but these **must** be clearly identified and acknowledged in your report.
- You can make use of existing code libraries, code samples and code fragments within your prototype but these **must** be clearly identified and acknowledged both within the code and the report.
- You may include quotations or figures from papers and websites but these **must** be clearly identified and acknowledged in your report (with a full citation).
- You can give and receive technical assistance but **must not** do substantial development or coding for someone else, or allow someone else to do so for you.
- You can discuss your concept and prototype with others but **must** do the bulk of the work yourself (including thinking through the project concept).
- The implementation of your project may potentially interact with another's (e.g., network communication), but you **must** clearly indicate this in your report and outline your own contribution.

The system that you design and prototype must be an example of ubiquitous computing. The project must include at least some manipulation / analysis / processing / inference from **multiple (2+) sensor data streams**.

The prototype must be sufficiently functional / demo-able, using real sensor data. **However it is NOT required that *every* part of the concept or design is fully implemented**. For example, other elements of the final system might be replaced with dummy/test data or "wizard of oz"d (i.e. performed by a person out of sight as if the system were more complete).

Critical thinking is required through-out, e.g. justifications for decisions, evidence for judgements, realistic assessment of strengths, weaknesses, relationship to prior work.

While there is a basic level of technical challenge associated with this coursework, beyond this, the technical complexity of the system (software) is NOT the sole criteria for our evaluation of your coursework. A key criteria in our evaluation of your coursework is balance. Thus, criteria such as appropriateness, quality of design, quality of testing and critical reflection are also very important. Consequently you can get an excellent mark using *reasonably* 'simple' manipulations of sensor data (e.g. primarily data collection with minimal programming) *but* providing extensive testing from carefully thought out scenarios of use, just as you *could* gain an excellent mark through developing a technically sophisticated system. Note: technical difficulties are NOT normally considered to be an extenuating circumstance.

The module convenor(s) reserve the right to require you to do a live demonstration of your prototype and to explain the code that you have written and the tests that you have performed. It is an academic offense to deliberately mislead the reader of your report, for example by claiming or implying that the prototype is more functional than is in fact the case.

Marking Scheme

The following areas of the report and the prototype are assessed (contribution to mark shown in the weights column):

Area	Weight	Comments
Quality of the proposed concept (i.e. summary, background and motivation)	20%	including novelty, significance and value, practicality and appropriateness, use(s) of sensing, and any ethical/social/cultural aspects
Knowledge and use of literature and related work	10%	including range and suitability of references, and its use to back up proposals and reflection
Quality of the realisation	35%	implementation, technological challenges and elaborations over and above the basic requirements
Quality of testing	20%	including how well it works (as shown in the screenshot appendix and testing), appropriateness of method(s) used, level and amount of testing, realism, conduct of tests, presentation of results, findings
Quality of the analysis / critical reflection	15%	including range of issues considered, quality of argument / evidence, and insight / novelty

Each area is graded according to the following levels, mapped to the standard University marking scale:

Grade	Summary	Mark	Description
A+	**Outstanding**	90%	warranting an A, and in addition exceptionally clear, original and/or deep treatment
A	**Excellent/ Distinction**	80%	complete, sound, without flaws
B	**Good/ Merit**	65%	a good and sound answer, but perhaps omitting some details or with small errors but correct method
C	**Adequate/ Pass**	55%	adequate answer, dealing with key principles, but with omissions and error in non-critical aspects
D	**Borderline/ Compensatable**	45%	a marginally acceptable answer, with at least basic coverage.

E	**Poor/ Soft Fail**	30%	an unacceptable answer, for example with substantial errors and omission, but still with some reasonable elements
F	**Very poor/ hard fail**	15% and below	unacceptable and with little merit in any element

The final mark is the weighted sum of the area marks.

Deliverables

There is one key deliverable for Coursework 2: the **final report** and its appendices. In addition, a short project **proposal** must be submitted part way through the module for feedback. These are described in turn.

Final Report

The *suggested* structure of the final report – which reflects the areas of assessment – is as follows:

1. **Title** – of the ubicomp application, service or experience.
2. **Summary** – a short summary of the intended ubicomp system.
3. **Background and motivation** – background information relevant to understanding the proposal (for example, about the setting in which it will be used), and a justification for why it is worth creating.
4. **Related work** – a summary of related work (e.g. academic papers and available / related applications / hardware / products) and how they relate to your own work, e.g. how you have learnt from them, how your work differs from them.
5. **Design** – description of the interaction design of the project where relevant. Diagrams, sketches, use cases etc. can help make this clear. Also describe the technical design of the project, and note that this could include aspects that you haven't implemented but were still part of the design process. Again, system diagrams are useful here.
6. **Implementation** – an explanation of how the prototype has been implemented, making clear which parts of the proposal have been implemented, and how. This section should also explain clearly exactly what you have implemented and coded yourself, and if and how you have used existing libraries, sample applications, fragments of code, etc. See also required appendices A, B and C.
7. **Testing** – an explanation of how you have tested your prototype and a summary of the results of that testing. This will include your own testing such as a technical evaluation (e.g. performance).
8. **Critical reflection** – your own analysis of the coursework project, including the strengths and weaknesses of: the concept, the design, the devices used, the uses of sensing, and the outcomes of testing.
9. **References** – complete list of references to papers and other resources referred to in your report, with a full citation for each.
10. **Appendix A – instructions** for setting up / running your system.
11. **Appendix B – NOTE: to be submitted as zip file – all source code etc.** written for the project (required). **Please submit this as a zip file to Moodle**.

You may include other appendices if you wish with other supporting information, e.g. user guide.

As per the module specification**, the maximum length of final report is 2000 words** (excluding references and appendices). The module convenor(s) reserve the right to ignore submitted material after the first 2000 words for the purposes of assessment.

A simple report template is provided on the module page in Moodle.

Proposal

As a minimum the proposal should include:

1. **Summary** – an overview of the idea / concept: broadly describe what it is you are intending to do and the motivations for it. You could include a scenario to describe this (perhaps).
2. **Technologies and sensor data** – detail on the role and use of sensor data in your project, and the technologies you'll employ.
3. **Project plan** – a brief explanation of your implementation plan, including details on which aspects of the proposed idea you will build, along with plans for testing that you may perform.
4. **Skills and competencies** – an explanation of how your particular skills and competencies fit with the proposed project.

A typical proposal will be between 400 and 800 words. There is no minimum length of the proposal, and the maximum length is 1000 words (excluding any references and appendices). You are free to use material that you write for the proposal in your final report.

Deadlines

The deadlines are as follows:

Deliverable	Due	Via
Proposal	22/02/19 15:00	Moodle
Final report	13/05/19 15:00	Moodle

Marks and Feedback

Marks and feedback (note that dates indicated are the *latest date* that feedback or marks will be delivered by, i.e., 15 working days after submission deadlines as per university regulations):

Deliverable	Feedback	Date	Via
Proposal	Individual comments on suitability of proposal (concept and implementation) and potential problems	15/03/19 15:00	Moodle
Show and tell lab session	Compulsory lab session for feedback and advice on project progress	29/03/19 11:00-13:00	In person
Final report	Overall mark, grade for each aspect of report and brief comments	31/05/19 15:00	Moodle

Penalties

The late submission penalty for the final report follows the standard University penalty, i.e. 5% penalty per working day (or part) late.

The proposal has no separate mark awarded. However late or non-submission of the proposal will result in the following penalty(s) being applied to the final (whole module) mark:

Submission	Penalty	Additional note(s)
After deadline, but within one calendar week	5%	
After one calendar week or not submitted	10%	No feedback will provided on the submitted proposal

The "show and tell" session (**29th March 2019, 11am-1pm in A32**) also has no separate mark awarded. However, **not participating in this particular lab session will result in a 5% point penalty being applied to the final (whole module) mark**.

Plagiarism or other academic offenses will be dealt with using the standard University procedures[1], and may result in a mark of zero for the entire assessment.

[1] https://www.nottingham.ac.uk/academicservices/qualitymanual/assessmentandawards/academic-misconduct.aspx