

# Project Title – Solution Document

Team Name

Members

(This page does not count in the total, and is not marked)

MAX: 20 pages excluding this page, reference list and appendices

Please note that the ideas and suggestions in each section are just hints. You can add information or change it. You need to show creativity and innovation throughout. Please make sure the report is divided up evenly and fairly (use the percentages given to do this).

## Background (10%)

A brief description on the purposes of the document, the system that has been developed and the broad market targeted. Outline the goals of the system you have built both immediate and longer term. What will success look like (how will you know)?

Include here the research you have found, extended from the background report e.g. about smart buildings or IoT to support or inform your solution. (This should have broadened and become clearer since the original background report)

## Scoping and market evaluation (10%)

Evaluate the market you are targeting. Describe the problem you are solving in terms its context and background. You might synthesise the best ideas from your individual feature contributions from the Background report submitted in week 4. Which ones have been incorporated and which ones set aside. What other ideas have arisen since then? Justify your decisions.

Who are the customers? Who are the competitors and what do they offer?

## Project Planning (5%)

This isn't to test how your project management BUT to evaluate your critical evaluation skills and knowledge of project management as well as what you have learned from the process.

Evaluate how the project has been conceived, planned and executed. Additionally evaluate how communication was executed. Consider the different planning processes Product Planning, Release Planning, Iteration planning and how they were managed. Discuss what happened compared with what should have happened. How did the project progress? What tools were used and for what purpose? How were meetings conducted and run? What development risks are being/were managed and how? What product risks exist? Were there contingency plans for these?

## Software Realisation (45%)

List and define the requirements that have been included in the solution. These should be complete; clear; consistent; accurate. Include functional and non-functional. They should be feasible and objectively verifiable.

Describe how your system works. Include how will the system was partitioned and implemented. Update and describe the Software Architecture description in last submission (the

logical and physical view). Describe the software architecture as it is now. How has it developed from the last description?

Describe the main components of the solution and explain how they work individually and together. Justify any design decisions taken. Include any algorithms you have written. Detail any design patterns or techniques you have used. Give examples of good design in your solution.

How is (or will) data be captured, stored and used?

Justify your choice of implementation language(s)/ development environment(s). Explain the use of software libraries etc. What were the key implementation decisions? Show that you have a good understanding of the main implementation issues.

## **Documentation (5%)**

Produce a brief user guide.

## **Legal, social and Ethical Implications (10%)**

Discuss the legal social and ethical aspects of the system you have developed e.g. implications of data collection, storage and usage. Demonstrate that you are aware of the legal, social, ethical and professional issues involved in your system.

## **Critical Analysis and Lessons Learnt (5%)**

Give a critical analysis of your system and its real world application.

Critically assess the software design and realisation.

What lessons have been learnt? Comment on potential improvements for future iterations or future innovation projects.

## **Product Roadmap, Potential Business Context and Future Planning (10%)**

Describe the business context of your software. What further development is required within what time frame to deliver against a potential future business vision?

Would your product fit into an eventual portfolio of products/systems and if so give some indication of what they might be.

Produce a roadmap for your product.

## References

There are no marks for this specifically, but they are included in the other sections.

A list of references to documents (books, papers, web pages etc.) which are referred to in the main body of the text. Use the IEEE citation style as detailed here <https://iee-dataport.org/sites/default/files/analysis/27/IEEE%20Citation%20Guidelines.pdf>. There is some guidance on referencing at <http://www.qub.ac.uk/cite2write/home.html>.

This is not counted in the page limit and the marks are implicit in other sections. Others' work should be cited. References should be listed:

1. Interaction Design Foundation, "Personas – a Simple Introduction", available at <https://www.interaction-design.org/literature/article/personas-why-and-how-you-should-use-them>, accessed 19 October 2018.
2. Add relevant references.

## Appendices

Anything that breaks up the flow, but keep in mind this is not marked. It may be referred to briefly by the assessor.

### Appendix 1

Describe who did the work for which sections of the document. Please discuss and agree this section at the very start and at the very end. We need exact detail of who did what. You might detail this in terms of GitLab commit IDs.

Table 1: Arbitrary Table – title above the table


## Appendix 2 – Marking Guidance - Delete from your document

We will employ conceptual marking in this report. This is to give you information on how to get a first class mark and also to avoid a fail. The table below shows you how these two categories will be judged.

First		Fail
<b>Background – Goals</b>		
Excellent introduction to purposes of the document, the system developed, its success measures and its broad market.	←	Unsatisfactory introduction.
<b>Background – Research</b>		
Student has thoroughly studied the relevant sources and demonstrated a strong ability to synthesise the relevant information to a high standard. Clear grasp of issues involved.	←	Superficial grasp of broad ideas and concepts. Major shortfalls are apparent in key areas.
<b>Scoping and market evaluation – Scoping</b>		
Excellent market evaluation. Convincing evidence of insight, critical evaluation ideas for innovation. Knowledge beyond module content.	←	Unsatisfactory market evaluation. Inaccurate answer or incomplete. Disorganised, largely irrelevant market evaluation and/or misunderstanding,
<b>Scoping and market evaluation – competitors</b>		
Excellent evaluation of competitors. Convincing use of evidence and of insight, critical evaluation and identification of gaps. Knowledge beyond module content.	←	Unsatisfactory evaluation of competitors. Inaccurate and/or incomplete. Disorganised, largely irrelevant competitor evaluation and/or misunderstanding,
<b>Project Planning</b>		
Excellent Project Management evaluation demonstrated – clear identification of how project conception, planning, execution and communication. High critical judgement and confident grasp of complex issues	←	Project Management knowledge poor– many major weaknesses. Lack of knowledge of project conception, planning, execution or communication
<b>Software Realisation – Requirements</b>		
Excellent professional standard work e.g. sufficient to hand to a 3 <sup>rd</sup> party developer.	←	Requirements are insufficiently stated incomplete, inconsistent or incorrect in many cases
<b>Software Realisation – System and Architecture</b>		
Excellent system architecture design documentation and justification. Complete and clearly written. Excellent grasp of the architectural design issues. Could be easily understood by a developer, with very little explanation	←	Lacks many areas of architectural design. Difficult to follow. Doesn't sufficiently inform the implementation.
<b>Software Realisation – Detailed Design (Components)</b>		
Excellent system design documentation and examples given. Complete and clearly written. Excellent grasp of the detailed design issues.	←	Little evidence of design. Difficult to follow. Doesn't sufficiently inform the implementation.
<b>Software Realisation – Implementation</b>		
Excellent, clear understanding of relevant implementation issues.	←	Poor discussion of implementation issues. Difficult to follow
<b>Software Realisation – Data Model and Storage</b>		
Excellent, clear description of data persistence.	←	Poor description of data persistence.
<b>Documentation</b>		
Excellent, comprehensive, accurate, clear user guide.	←	Poor, limited, inaccurate or unclear user guide.
<b>Legal, social and Ethical Implications</b>		
Excellent overview of ethical and social considerations specific to developed system. Knowledge beyond module content.	←	Poor or incomplete description of ethical and social considerations.
<b>Critical Analysis and Lessons Learnt</b>		
Exemplary objective, fair and comprehensive evaluation of product and process. Objectivity demonstrated and standard similar to high quality publication standard. Use of additional resources	←	Incomplete evaluation and/or poor approach. Unreliable or of insufficient quality
<b>Product Roadmap, Potential Business Context and Future Planning – Business Context</b>		

Excellent demonstration of innovative thinking and creative planning for future development. Feasible roadmap. High critical judgement and confident grasp of complex issues.



Poor or no demonstration of innovative thinking and creative planning for future development. Unclear roadmap.