CITS4401 Requirements and Design
Group Project Part 1
Semester 1 2020

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Please check the CITS4401 unit web page to ensure that you have the latest version.

Project Overview

You are part of a project team at the University of Western Angria (motto: "Seek sagacity"), assigned the task of developing a computer system to improve the parking situation at the University.

The University has over 20,000 students and staff, but far fewer parking bays for their cars. For a university, social interaction and being on site is an important part of research and learning activity. Students and staff wish to be able to park quickly and at reasonable cost when they need to come to the University. The University also wants to reduce car use and encourage behaviours such as public transport and car pooling. All want a fair and efficient system that supports students and staff to do their work on the University campus.

Your group will be required to analyse requirements for the system, refine them through an interview with a stakeholder, and document the results of your analysis.

Project Rules and Deadlines

Project groups

- Project work will be done in groups of 4 or 5 students, assigned by the Unit Coordinator. See the provided file `CITS4401ProjectGroups.csv` for a class list with contact details for your group members. Any problems with your group should be discussed with the unit co-ordinator, Rachel Cardell-Oliver, as soon as possible.
- All group members are expected to contribute equal effort to the project. Contact the Unit Coordinator as soon as possible (well before the deadline) if you believe this is not the case.

Project Deliverables and Submission Dates

Project part 1 will be published during week 3 of semester 1 2020. Make a note of the following project milestones and their due dates.

- Submit your **questions and justifications** (see project task 3, below) to the Unit Coordinator via `cssubmit` at the latest **by the end of workshop 4 or by email before 4pm Wednesday 18 March 2020.**
- **Interviews with stakeholders** will take place during weeks 4 and 5 **between 16 March to 27 March 2020**. You will need to contact the Unit Coordinator to confirm the exact time and venue.
- The **final submission deadline** for your full project report is via `cssubmit` by **4pm on Friday 3rd April 2020** (week 6).

Assessment details and guidelines

This requirements project is the first part of the CITS4401 group project worth 30%. Part 1 (requirements) is worth 15% of the marks for CITS4401. Part 2 (design) will run from weeks 6 to 11. Each group member is expected to spend around 20 hours on part 1 of the project, including background reading. All project deliverables (questions and final report) must be submitted via `cssubmit` at
https://secure.csse.uwa.edu.au/run/cssubmit before the submission deadlines.
The penalties for late submission are described in UWA's Consequences for Late Assignment Submission at
https://ipoint.uwa.edu.au/app/answers/detail/a_id/2711/~/consequences-for-late-assignment-submission

You are expected to have read and understood the University's guidelines on academic conduct. In accordance with this policy, you may discuss with students in other groups the general principles required to understand this project, but the work you submit must be the result of your own group's effort.

Project clarification

Please take time to read this project description carefully. Post any requests for clarification about the requirements of this assessment to help4401 so that all students may remain equally informed. Further information may be provided as required during the project. All announcements about the project will be posted on help4401.

Project Tasks

1. Read carefully through the following scenario.

The Sens-O-Park System

The Problem

Available parking can be difficult to find on the University campus. The Sens-O-Park System aims to solve this problem by allowing users with a mobile device to access the system and find the location of a close and available parking space.

Goals

The goals for the system are as follows:

- To set up and program cameras in parking areas, which will allow the system to

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determine whether a particular parking space is occupied or not.
- To provide secure access to the system to users, so that they can determine whether there is available parking, where it is, and how much it will cost.

Users

The intended users of the system are University staff, students and visitors to the University campus. They would need to have a mobile device in order to use the system.

Mandatory features

- The system must have cameras which can be used to determine whether a parking space is occupied or not.
- The system must be able to function in a wide range of environmental conditions – day, night, rain, etc. Angria is noted for its sometimes violent snowstorms (in winter) and dust storms (in summer).
- System administrators should be able to add or remove parking spaces from the system or reserve them for particular staff.
- System administrators should be able to add or remove users from the system.
- The system should only be accessible to properly authenticated users.
- User details should be stored securely.
- Users should be able to query the system to find out whether there are spaces available in a particular parking area. The system should be able to tell them whether there are spaces available in that area, and if there are, how many there are.
- The system should record whether the user is entitled to use a disabled or reserved parking spot.
- The system should undergo rigorous testing before launch.
- The system should be easy to use.

Optional features

- In addition to being able to query the system for information about a specified parking area, a user should be able to find the nearest location with available spots, and be provided with directions to it.

2. Identify the *stakeholders* in the proposed system. For each stakeholder, give a brief (just a sentence or two) description of what their interest in the system is. What benefits will they gain from it. What risks will it pose to them?

This list of stakeholders (half page to one page) should be included in your final report.

3. Select one stakeholder group you wish to interview a representative from for this project, and identify a set of questions you want to ask them which will help you clarify details about the project or its requirements.

You will have 15 to 20 minutes to meet with your stakeholder representative, ask questions, and record their answers, so make sure your questions can be asked and answered in this amount of time.

For each question, state the question, and also write down the following:

1. What project detail or requirement does this question aim to clarify?
2. In what way is the original detail or requirement ambiguous, imprecise, contradictory, or in some other way lacking? If it is ambiguous, give examples of two different interpretations which could be placed on it.
3. What are some of the possible answers you envisage to your question? How will you use them to make the project requirements more precise?

This list of questions and rationale, plus the stakeholder group you wish to interview a member of, should be submitted to the Unit Coordinator via cssubmit by **at the latest by the end of workshop 4 or by email before 4pm Wednesday 18 March 2020** The Unit Coordinator may provide feedback on your questions and/or suggest possible amendments.

4. Conduct your stakeholder interview, and record the outcomes. The Unit Coordinator will advise you when and where the interview is to be held. You will need to record:

- Where and when the meeting was held
- Who was in attendance
- What answers were given to your questions
- Any other information you obtained

These details should be included in your final report. (There is no particular page limit, but ensure that your documentation of the meeting is clear, comprehensible, and satisfies the requirements above.)

5. Using the information obtained from the stakeholder interview, write down system requirement specifications. Your system requirement specifications should be:

- relevant
- precise
- unambiguous
- consistent
- comprehensible, and
- testable.

For each item in your specifications

1. Detail the particular specification using an appropriate template, and
2. Explain how it meets the criteria above, and (if relevant) how your questions helped you refine it.

Note that you do *not* need to write down requirement specifications for the entire system! Each of your questions should relate to some detail or user requirement you aimed to clarify, and the specifications should be derived from these. Sometimes, one question might result in several requirement specifications, or several questions might be needed to clarify one requirement specification. These specifications (and your discussion/justification of them) should be included in your final report. There is no particular page limit on this section of the report. In general, however, you should aim to have at least 4 specification requirement items, and no more than 8.

You may choose to use the Volere Snow Card template shown in lectures. and available from https://www.volere.org/atomic-requirement-download/. Use only the snow card categories

that are important for your requirements. If you wish to use a different format for recording atomic requirements you may do so, as long as you explain the reason for your choice.

6. Write a short "Reflection" section (half page to one page). You should reflect on on any aspects of the project your group found useful/surprising/difficult/etc.

7. Submit your report, containing sections for tasks 2–6.

You report should meet the following requirements:

- It should be in PDF format, and use A4 size pages. It should clearly show the name and student number of each member of the group.
- The font for body text should be between 9 and 12 points. The report should contain numbered headings, with useful heading titles. Any diagrams, charts or tables used must be legible and large enough to read when printed. All pages (except possibly the cover, if you have one) should be numbered.
- If you give scholarly references (though you are not required to), you may use any standard citation style you wish, as long as it is consistent.

Submit your report PDF file via `cssubmit`. Only one person per group should submit, but make sure the name and student number of all group members is included in submissions.

Feedback

Each group has an opportunity for feedback on their project, by appointment with the unit coordinator any time up until the week the project is due. That is, feedback appointments are available up to Friday 27 March. So if you leave all the work to the final week, that's just too bad since it turns out the *Departmental Manager* for your project (i.e. me) has gone on leave and can't be contacted.

Assessment

Each component of the report will be assessed on whether

- it is clear and logically laid out
- it meets the project requirements given
- it describes and justifies any assumptions made.

The project will be marked out of 25 using the following marking criteria:

- List of identified stakeholders (project task 2) **3 marks**
  Criteria: Identifies main stakeholders; justifies the choice of stakeholders; assumptions described and justified; succinct: adheres to the page limit of half to one page;

- List of questions and justifications (project task 3) **5 marks**
  Criteria: Identifies relevant questions for this stake-holder; justifications given for each question (see project task 3 details); assumptions described and justified; succinct and clear questions; good plan for limited interview time;

- Interview record (project task 4) **5 marks**
  Criteria: Records meeting details (see project task 4 details); clear documentation of the answers given; any assumptions or unresolved issues are recorded;

- System requirement specifications and justifications (project task 5) **8 marks**
  Criteria: Succinct and clear statement of requirements; Justified validation for each of the requirements (see project task 5 details);

- Reflection (project task 6) **2 marks**
  Criteria: Succinct and insightful reflections on the project process;

- Presentation (project task 7) **2 marks**
  Criteria: See project task 7 details above;

Good luck!
Rachel Cardell-Oliver and Arran Stewart
CITS4401 lecturers