**University of Technology, Sydney**
**School of Information, Systems and Modelling**
**IS Development Methodologies – 31257 Autumn 2020**
**Project – 50%**

**Assesses subject objectives 1 - 4.**

**Method:** You will work in groups of 4 to work on an information systems development project. All members of the group must belong to the same tutorial class. The assignment involves two parts: a **report (35%)** and a **recorded presentation (15%).** The report will be developed in Markdown text format using version control in Github. The report should include all workproducts produced during analysis and design. You are expected to use visual models (in UML or otherwise) to represent the workproducts wherever possible. It is also expected that all your group progress and collaborative processes will be recorded (early and often) using the *commit*, *issues*, and *projects* functionalities of Github. Every commit should have a clear, succinct, and descriptive comment making reference to the iteration and the activity of Scrum.

**Due: Week 11 – A physical copy of the report needs to be handed in at the beginning of your tutorial class. Github repositories and the compiled version of the report should be uploaded to UTSOnline by 31/5 (Midnight Sunday of 31 May).**

**Tasks:** Each group will produce a business report of not more than **2000** words covering the following tasks in relation to an information systems development project:

1. Outline the *objectives* of the project and *define the problem* (Steps 1 & 2 of Design Thinking Methodology).
2. Identify stakeholders.
3. Describe your approach from a Design Thinking principles perspective.
4. Explain the agile methodology, namely, Scrum you have used to carry out the procedure. In your explanation, ensure that you outline activities from Scrum that you use.
5. List assumptions you have made in the systems analysis.
6. Document your proposed workproducts and models.
7. Discuss the competitive advantages might be gained in developing the new information system. Identify and discuss the possible adverse effects for this Business if its information system project fails
8. Document in GitHub all your iteration and models as you progress.

Note: You'll be using Design Thinking and Agile Scrum to develop the system, and recording all your progress regularly on Github. We will be covering the basics of Github during lectures and go through the process of setting up and maintaining your repositories during tutorials. See the subject website for *'Report Writing'*, a short guide to writing reports, which also details the required structure for the report. In addition, see https://guides.github.com/pdfs/markdown-cheatsheet-online.pdf for Markdown syntax

**Discussion Topic:**
A major travel company would like to develop an information system to improve the operation of their in-house *call management centre* (CMC). The system will adjust the call flow rate to suitable Relationship Managers (RM). Relationship Managers (RMs) perform sales of holiday packages. To provide improved call routing and dynamic call flow control for both inbound and outbound calls, the information system will provide assistance to RMs in

serving their end-customers (or potential customers) and will match RMs and end-customers according to RMs skills and customers profiles.

The system operation is complicated by the varying number and nature of holiday packages offered by the travel company. One way to improve the call flow rate is to match customers based on RM performance and product knowledge. For example, in selling particular travel packages, the system would do well in matching end-customers to well informed RMs with appropriate knowledge about the destination and its traditions.

A typical RM matching technique is segmenting customers into social and cultural segments according to their postcodes and surnames. For the purpose of this assignment, assume a supporting tool to create customer profiles exists, *Profiler Tool*. A corresponding RM profile may depend on the age, sex, culture, language proficiency, experience and product knowledge. The system sought will be used as a skill matcher between end-customers and RMs based on their profiles. This makes RMs more convincing to a customer and increases the chance to achieve a sale or provide a service.

RM profiles are initialized at hiring. Employees initially take a 10 minutes questionnaire which gets used to build a profile and a skill matrix. These will provide initial RM profiles for the system. The system will adjust according to RMs subsequent performance in selling packages and in serving customers effectively and efficiently.

In targeting potential buyers with outbound calls, the system dials numbers automatically according to a customer target list generated by the system. The system retrieves customers details from a database. It then displays the details and provides the RM with guidelines and a script to help in providing an improved service to the end-customer. For the outbound calls, the system will create a *target list* for each RM based on their skills and profile. A target list is essentially a list of tuples of the form <*potential customer, product proposed*>.

For Inbound calls, customers dial a number reaching the CMC which has its own private automatic branch exchange to route the calls. A call routing and distribution routine that minimizes inbound call costs by reducing per-call handling time. A skill score is calculated based on the RM's previous call duration and profile. A score from 1-10 based on the likelihood to purchase the product is given to a customer according to some preloaded criteria (e.g. repeat customers may have a higher score, customers from particular postcodes may have lower scores, etc..). Customers with the highest scores are served first. Their calls are directed to RMs based on skill levels and best match. The schedule of dialing end-customers and the estimated call duration vary according to a RM's skill level and previous performance.

During busy times, inbound customers can be directed to an Interactive Voice Response unit prompting them for options, and may even ask for call reasons in a few words and then redirect the call to an Automatic Call Distributor routing the call to the first available appropriate RM. Customers may hang up when they suffer from a long wait time.

*Note:* Where you are unable to provide information, identify questions you would need to ask to be able to resolve those issues. ***Please also expect that the customer will be in touch during your project (your tutors will relay their messages)!***

**Report and tracking of collaboration process (35 marks, 35%)**

The tutors will use the report developed on your GitHub repository to assess the following:

| Report and Collaboration Process Marking Criteria | Marks |
|---|---|
| Problem definition: Objectives, List of Stakeholders | 6 |
| Your Design Thinking approach to address the problem with artefacts | 6 |
| Workproducts, models and descriptions. | 12 |
| Competitive advantages and possible effects if the project fails | 4 |
| Recording the intention, rationale, and focus of each system's development iteration using Github's commit messages, project boards, and issue tracking capabilities | 7 |
| **TOTAL** | **35 marks** |

The submission of reports at the end of the course will proceed as follows:

- Download your Github repository as a .zip file
- Compile the Markdown version of your report into a pdf file (we will explain how to do it in the tutorials)
- Submit both the Github repository in .zip format and the compiled pdf version of the report to UTSOnline

The online submission needs to be completed on the due date indicated above (end of week 11). A late penalty of 10% of the subject weighting for the Report will be applied each day to work that is submitted late, unless prior arrangements have been made with the Subject Coordinator.

**Cover sheet**: Students must submit the pdf version of the report with the cover sheet signed by the members of the group.

**Note:** Questions in relation to the assignment should be posted on the Discussion Board. Make sure you have read the Assignment Outline before you ask your question. Questions on the assignment that are received via email will not be answered.

**Recorded Video Presentation (10 marks, 15 %)**

**Individual**
Each group will record a 10-minute presentation. Each member of the group is expected to present one aspect of the project during this presentation. You will be **marked for individual contribution**. Presentations should be made on PowerPoint, uploaded to Youtube, and hyperlinked in your Markdown report.

| Recorded Video Presentation Marking Criteria | Marks |
|---|---|
| Selection of content for the presentation is interesting and makes sense as a stand-alone presentation | 6 marks |
| Structure of presentation is professional. Introduction, agenda, hand overs, logical content organisation, conclusion etc | 3 mark |
| Use of visual aids appropriately and of high quality in support of Presentation | 3 mark |
| Clear professional verbal presentation | 3 mark |
| **TOTAL** | **15 marks** |

For group assessments in this Subject, refer to the Subject Outline.