UNIVERSITY OF TECHNOLOGY, SYDNEY

41025 Introduction to Software Development

Project - Analysis, Planning, Architecture & Design

Assignment 1

Due Date: **Softcopy Due by Friday 19/04/2019 11:55 PM AEST**
Showcases in Week Commencing from 29/04/2019 -
During Related Workshop: See workshop schedule on UTS Online for exact dates/ time slots)

Submission: Each group will submit the following two items:

Report: Each group will submit a softcopy (Microsoft Word File or PDF) of the group assignment containing ISD project requirements, plan, architecture and design including individual contribution logbooks via Turnitin **before 19/04/2019 11:55 PM AEST**. Use the Project - Assessment item 1 Turnitin link (View/ Complete) on UTSOnline for submitting your assignment.

Prototype: Working software application prototype code will not be submitted via Turnitin. Submit ISD project working software prototype code files (source and executable) with readme file (how to deploy and run the software) as a single Zip file in the UTSOnline Assignment 1/ "Working Software Prototype Code Submission" folder using your relevant workshop link **before 19/04/2019 11:55 PM AEST**. **You can submit the software only once. You must not make any changes once the software code is submitted. If you make any changes after the submission due date then the late assignment rules will be applied.**

Your both project report and software prototype code submission files title/name must follow the following naming pattern.

Your workshop activity number–group id

For instance, if your Wrk1 activity number is 02 (see timetable for your activity) and group id is G1 then your submission file title/ name must be worded as 02-G1. From each group only one student (project leader) should submit the assignment on the behalf of the whole group. You do not need to put the student ids of all the group members on the file title/ name. You must check Turnitin report and ensure that your work does not contain plagiarism. You may submit your report to Turnitin many times before the submission due date. Final Turnitin reports can be used as evidence by the teaching staff in the event that plagiarism is suspected in an assignment and will be dealt as per University rules. **Do not allow anyone to copy your solution – this is considered misconduct; all miscreants will receive a mark of 0, at best for the assignment and will be dealt as per University rules**. You may be required to provide the hard or soft copy of the assignment anytime during the semester.

Marks: 30%

Word Limits: This is a technical report, thus there is no compulsory minimum and maximum word limit. For a general guidance, the recommended word limit for this assignment is maximum 5000 words excluding diagrams, bibliography, logbooks and appendices. Word limit will be regarded as recommended rather than compulsory, and no student will be disadvantaged by being under or over the recommended word limit.

Method: The assignment will be done in a group (preferably in the same workshop). Group size should be limited to 4 and no more than 6 students (enrolment numbers and situation-specific circumstance will dictate the actual size of the groups). Groups will be formed in Weeks 2 and 3 with the help of your workshop teaching staff. It is not the responsibility of teaching staff to find a group for you; however, they would help you to put in a group. Once the groups are formed and for any reason(s) you want to change the group, then it is solely your responsibility to make other arrangements and find another alternative group who is willing to accept you. This is a group assignment and you must respect other students in the same group, different groups and teaching staff. **If you have any group issues, then you must inform your workshop tutor as soon as possible and well before (at least 1 week or earlier) the assignment submission or due date. Group assignment issues reported on or after the assignment submission date may not be considered. There will be zero tolerance for any academic and non-academic misconduct**. **See University Rules, Subject Outline and Academic Misconduct section of this brief for details**.

Objectives: Subject objectives: 1, 2, 3,4 and 5
1. Investigate and solve software development problems with minimal supervision.
2. Determine and balance the competing goals of software development activities within their constraints
3. Plan and manage a software development task to create, modify or extend a software feature or function to completion within the task constraints.
4. Apply sound software engineering practices to successfully create, modify or extend a software feature or function.
5. Communicate clearly software and task information to interested stakeholders

Type: Project

Groupwork: Group, group and individually assessed

Criteria: The assignment will be assessed based on the following criteria.

Criteria Items	Objectives	Weight
Problem requirements, constraints, risks (6 Marks)	1,2	20%
Solution estimation, planning (6 Marks)	1,2,3	20%
Solution architecture (6 Marks)	1,2,3	20%
Solution design (6 Marks)	1,2,3	20%

Coded solution prototype: architecture spike (3 Marks)	4	10%
Overall quality, presentation (3 Marks)	5	10%
Total	-	100%

The on-line tool SPARK shall be used to assess an individual's contribution to the group work. This means the group mark for the Assignment 1 shall be scaled by the individual's SPARK rating as described in the Subject Outline. The rating period for SPARK assessments, Assignment 1, will open on **21/04/2019 11:55 PM AEST and close on 28/04/2019 11:55 PM** AEST. Please be advised that if you fail to provide a rating via SPARK during the declared rating period, you will receive anywhere between 00.0 and 0.5 (50%) of the assessed group mark for the Assignment 1. Individuals who "abuse" the SPARK assessment methodology will also receive anywhere between 0.0 and 0.5 (50%) of the of the assessed group mark for the Assignment 1. Please read carefully the Assessment section of the Subject Outline. **Please also note that there will be no negotiation on a wrong answer**. An individual's mark for this group work assessment shall be computed as:

Individual Student Mark = Group Mark for Assessment Item 1 * Individual Spark plus rating

Task: This assessment task will require a team of 4-6 students to analyse the ISD Project: Online Movie Store case study; and produce, submit and present a group report containing software requirements & development plan, and architecture & design; and working software prototype. The deliverables of this assessment task also include an oral/visual group report and prototype presentation/ showcase (no PowerPoint slides) and individual contribution logbooks. **Any individual student who failed to appear and present in these compulsory assignment assessment and review sessions (Showcase) will receive zero (0) as a final individual mark.** Students may choose to work in a lab or from home. Each ISD project team needs to nominate a project manager/ lead who will submit the assignment 1 on the behalf of the whole group or team.

Assignment 1: Consolidated Report Structure for Deliverables

SECTION/ ITEMS	Maximum Marks	Note
Cover Sheet, Header Page and Approved Project Scope	-	Sign, scan and embed FEIT declaration of originality cover sheet containing correct group name, student #, names and signatures in the report just before the project title/header page. Analyse the Online Movie Store project brief and identify at least 4-6 processes, services or features for your project.

SECTION/ ITEMS	Maximum Marks	Note
		Document project scope items (process, service or feature, role) in the project backlog table. **Note:** At least 1 service/feature per team member. Each service or feature can be broken down into several user stories. If you do not include these then assignment will not be marked, and you may receive zero for the whole assignment.
1. Requirements	**6**	**Requirements Backlog**
Functional Requirements	(4)	Analyse the Online Movie Store project case study, and break down the processes, services or features into user stories (linked to project scope items) for the whole project and capture them in the requirements traceability matrix or backlog spreadsheet. You can also sue Trello and similar tool to capture the backlog. **See the requirements backlog template.** Write narratives/details using the use case template. Each student in a group will write a narrative for 1 user story of their choice. **See the use case template example**.
Data Requirements	(1)	Document data requirements using the data dictionary template. **See the data dictionary template.**
Non-functional Requirements	(0.5)	Identify and capture at least 2 performance and 2 security requirements for the to-be developed software application as user stories in the requirements backlog.
Constraints & risks	(0.5)	Identify and capture at least 2 constraints and 2 risks for the to-be developed software application.
2. Plan	**6**	**Project Schedule, cost estimates & timesheet**
Project schedule	(4)	Decompose the whole project schedule into 2 releases. Decompose each release into 3 iterations and additional iteration 0 in

SECTION/ ITEMS	Maximum Marks	Note
		each release. Calculate the project, release(s) and iteration(s) start and end dates Estimate and prioritise user stories identified for the whole project. Develop the user story map. Select the user stories in consultation with your tutor as minimum viable product for release 1 of the Online Movie Store software application. Select the user stories in consultation with your tutor for each iteration of release 1. Develop iteration 1 card wall. Develop iteration 1 schedule.
Project cost estimates	(1)	Calculate the cost estimates for the whole project. Calculate the cost estimates for release 1. **Note:** Assuming each student in the ISD project team is working 8-10 hours per week for this project. Rate is fixed at $80 P/H.
Project timesheet	(1)	Each student to complete and submit the timesheet signed by their project lead. **Note:** Assuming each student in the ISD project team is working 8-10 hours per week for this project. Rate is fixed at $80 P/H.
3. Solution Architecture	**6**	**Architecture based on MVC**
Data Architecture Model	(3)	Based on the data requirements, provide and describe the conceptual data model diagram (without attributes). Concepts & relationships.
Application Architecture Model	(3)	Model and describe overall Online Movie Store Application Architecture. The model diagram(s) should show architecture components and their relations following the MVC or relevant architecture pattern (s). You may use whiteboard, UML or any

SECTION/ ITEMS	Maximum Marks	Note
		other architecture modelling or description notation or language or tool for architecture diagram.
4. Solution Design	**6**	**Solution Design based on MVC**
Interaction Design Model	(2)	Provide a user or customer journey map for the Online Movie Store Application release 1.
Object Design Model	(2)	Provide object class design model (business logic, interface classes, attributes and methods) for release 1.
Backend Database Design Model	(2)	Provide back-end database design model diagram with all the tables, normalised relationships (if relevant) and attributes for release 1.
5. Architecture Spike (Software Prototype)	**3**	Develop the software prototype by partially implementing the Online Movie Store architecture components/ layers. **Interface –** Implement the index or landing page (home page) of the Online Movie Store application. It is the starting point of the web application and should provide the options of login and register to users. **Login page** – Implement the login page screen using web form (e.g. JSP) without any program logic or connection to database. **Database** – Create an initial version of the Online Movie Store application.
6. Overall Quality, Presentation	**3**	Quality of visual/oral group report and software prototype presentation. You are not required to prepare and submit the presentation slides. Launch and present the report submitted via Turnitin. Present software prototype from your laptop.
Appendices – Individual Contribution Logbooks	-	Include contents from the Individual Contribution Logbooks. Link your individual contribution to weeks and hours recorded in timesheet. The individual contribution logbook is mandatory for students to submit with each Assignment: Assessment Items (1-2) to receive individual project marks. If a student does not submit this logbook, then he/she will receive zero for their project mark.

SECTION/ ITEMS	Maximum Marks	Note
Total Maximum Marks	**30**	

You should use the Assignment 1 Report Structure (as explained above) as a guide for documenting deliverables, additional documents and information released with this assignment brief on UTSOnline in the Assignment 1 folder.

You should regularly get feedback on the assignment tasks and deliverables from the coaches during the workshop sessions. Each student group should assume the role of a Software Provider Start-up Company for the ISD Project.

Assessment Feedback
Feedback on the marked assignments will be within 2 weeks after the assignment due or submission date.

Minimum Requirements
See subject outline for details. **NO conceded passes are to be granted due to University Policy.**

Referencing Standards
All material derived from other works must be acknowledged and referenced accordingly using the Harvard Referencing Style (see http://www.bell.uts.edu.au/referencing/harvard_system).

Late Penalty
See subject outline for late submission penalty, unless an extension has been approved by the subject coordinator.

Special Consideration
Special consideration, for late submission, must be arranged beforehand with the subject co-ordinator (**email: asif.gill@uts.edu.au**).

Please also see the UTS Special Consideration Process:
www.sau.uts.edu.au/assessment/consideration

Special Needs:
Students should email the subject coordinator as soon as possible (and prior to the assessment deadline) to make them aware of the impact on them meeting assessment component/requirements, and that they are seeking assistance through UTS Special Needs as detailed in Section 5.1.3 of Procedures for the Assessment of Coursework Subjects.

Academic Misconduct:
Please see the subject outline for plagiarism and academic integrity in conjunction with UTS policy and procedures for the assessment for coursework subjects.

Querying Marks/Grades and Final Results
See subject outline for details.