TSE2101 SOFTWARE ENGINEERING FUNDAMENTALS
SEMESTER 1, YEAR 2021/2022
PROJECT DESCRIPTION

Significant Dates:

- Group formation : Week 3, Fri 27th Aug 2021,12 midnight
- Submission **Part I (Requirements Analysis)** : Week 6, Fri 17th Sept, 12 midnight
- Submission **Part II (Design)** : Week 10, Fri 15th Oct,12 midnight
- Submission **Part III (Prototype +Testing)** : Week 15, Fri 12th Nov, 12 midnight
- Presentation **(Video presentation + Q&A)** : Week 16, 22-25th Nov

* Please strictly adhere to the important dates above.
* * A kind reminder for every student that a penalty for late submission is applied.

Instructions:

Students need to form a **group of 3 to 4.** Students are required to produce and submit documentation on requirement, design and implementation(prototype) of a system. Project rubric is given in detail in this paper. Students can only select project titles from registered tutorial section listed as follows:

Tutorial Section	Project Title	Key features / Functionalities
TT1V Nur Azyyati	Food Bank Distribution App	Registration, user profile, food bank contents (add/edit/delete), users (user/admins), distribution location, food category, alert notification, reports (number of location/food category/ food amount)
TT2V Nur Azyyati	Mobile's Car Wash Service App	Registration, User Profile, Schedule, Location, Appointment Price (add/edit/delete), Users (car washer/user/admins), Payment gateway, Reports (receipt/history).
TT5V Dr Naveen	Motor Driving school system	Registration, Login, Users (Admin, Tutor, Student), Schedule, Training history, Payment, Report.
TT6V Dr Naveen	Online Objective Exam	Registration, Login, Users (Admin, user), User profile, Objective exam contents (add/edit/delete), Schedule, view history, Report.
TT3V Khairi Shazwan	Google Classroom and Meet Organizer	Login, Classroom View, To-do View, Assignment Submission, Announcement Viewer, Meet Linkage, Classroom creation, Meet Creation, Calendar Synchronizer.
TT4V Khairi Shazwan	"I Am Fine" notification system	Registration, Login, Google Meet linkage, email notification, Call/SMS/Whatsapp/Telegram linkage, Twitter/FB update.

MULTIMEDIA UNIVERSITY

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PROJECT RUBRIC

Lecturer Name :_____ **Tutorial Section** :_____

Project Title :_____ **Presentation Date** : _____

Project Phase	Cognitive	Affective	Total
Project 1 (20%)		NIL	
Project II (25%)		NIL	
Project III (25%)	NIL		
		Grand Total (70%)	

Signed by:

_____

(Lecturer's Name and Date

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COGNITIVE AND AFFECTIVE ASSESSMENT

Mark Distribution	Submission Type	Descriptive Elements	Weightage	Rate (0-5)	Total (Weightage * Rate)
	Part I Requirements Analysis (Documentation)	1) Problem statement describes users, scenario, problems, & use cases. Use case diagrams reflect problem statements. Description of elicitation method.	1		
		2) Sequence diagram describes the process flow in each use case	1		
		3) Class diagram/ER diagram have the main entities	1		
		4) Quality and correctness of diagrams and notations / Clearly and coherently written academic discourse	1		
	Part II Design (Documentation)	1) Data design matches requirements	1		
		2) Architecture design shows the structure of the solution	1		
		3) Interface design matches requirements	1		
		4) Component & deployment design shows the modules and system elements	1		
	Part III Prototype and Testing (Documentation + Video + Presentation)	5) Quality and correctness of diagrams and notations / Clearly and coherently written academic discourse	1		
		1) Screens & Explanation, Linking & Flow of system (Video Content)	1		
		2) Quality of Prototype System/App (Software Development Outcome)	1		
		3) Software Testing Procedures and Strategies (Testing) 0-1: Test 1 or 2 component 2-3:Test 3 or 4 component 4-5(high): Test full component + integration	1		
		4) Work Responsibility and Work Relations towards updated Requirements & Design - (Group Relations + Documentation)	1		
		5) Clear Delivery of Ideas – (Presentation)	1		
		Project I = Total (Weightage * Rate)		**Max (20%)**	
		Project II = Total (Weightage * Rate)		**Max (25%)**	
		Project III = Total (Weightage * Rate)		**Max (25%)**	
		GRAND TOTAL =		**Max (70%)**	

Note for Rate: 0-non existence, 1-very weak, 2-weak, 3-fair, 4-good, 5-excellent

COGNITIVE COMPONENT RUBRIC

PROJECT I – PROJECT PLANNING / REQUIREMENTS ANALYSIS

Descriptive Elements	Very Weak (1)	Weak(2)	Fair(3)	Good(4)	Excellent(5)
1) Problem statement describes users, scenario, problems, & use cases/ Use case diagram reflects problem statement	Problem statement is very ambiguous, unreasonable users, unreasonable scenarios, and insufficient user cases. Use Case diagram that solves only *5% of the problems*	Problem statement is ambiguous, number of users is doubtful, unreasonable scenarios, and insufficient user cases. Use Case diagram that solves *25% of the problems*	Problem statement is almost clear, number of users, fair description of scenarios, and user cases. Use Case diagram that solves *50% of the problems*	Problem statement is clear, number of users, some good scenarios, and good user cases. Good Use Case diagram that solves *80% of the problems*	Problem statement is very clear, number of users, concrete scenarios, and concrete user cases. Comprehensive and complete Use Case diagram that solves all problems. Very good self-explanatory diagrams.
2) Sequence diagram describes the process flow in each use case	Sequence diagram describes only *5% of use cases*, flow is unclear and not able to understand at all.	Sequence diagram describes *25% of use cases*, flow is unclear and not easy to understand.	Sequence diagram describes *50% of use cases*, flow is good and clear.	Sequence diagram describes *80% of use cases*, flow is good and clear.	Sequence diagram describes all use cases, flow is comprehensive and very clear. Very good self- explanatory diagrams.
3) Class diagram/ER diagram have the main entities	Class / ER diagrams have only *5% of the main entities*, diagrams are not understood at all.	Class / ER diagrams have *25% of the main entities*, diagrams are not easy to understand.	Class / ER diagrams have *50% of the main entities*, self-explanatory diagrams.	Class / ER diagrams have *80% of the main entities*, good self-explanatory diagrams.	Class / ER diagrams have all the main entities, very good self-explanatory diagrams.
4) Quality and correctness of diagrams and notations / Clearly and coherently written academic discourse	Not able to draw diagrams and write ideas clearly and coherently	Able to draw diagrams and write ideas with limited clarify and coherence and require further improvements	Able to draw diagrams and write ideas fairly coherently and clearly but require minor improvements	Able to draw diagrams and write ideas coherently and clearly	Able to *draw diagrams and write ideas* with excellent coherence and clarity

Note for Rate: 0 = non existence

COGNITIVE COMPONENT RUBRIC

PROJECT II – DESIGN / ARCHITECTURE / INTERFACES / DATABASE

Descriptive Elements	Very Weak (1)	Weak(2)	Fair(3)	Good(4)	Excellent(5)
1) Data design matches requirements	Data design *matches 5%* of the requirements, diagrams/designs are not understand at all.	Data design *matches 25 %* of the requirements, diagrams/designs are not easy to understand.	Data design *matches 50%* of the requirements, self-explanatory diagrams/designs.	Data design *matches 80%* of the requirements, good self-explanatory diagrams/designs.	Data design *matches all the said requirements.* very good self-explanatory diagrams/designs.
2) Architecture design shows the structure of the solution	Architecture design shows *5% structure of the solutions,* diagrams/designs are not understand at all.	Architecture design shows *25% structure of the solutions,* diagrams/designs are not easy to understand.	Architecture design shows *50% structure of the solutions,* self-explanatory diagrams/designs.	Architecture design shows *80% structure of the solutions,* good self-explanatory diagrams/designs.	Architecture design shows *all the structure of the solutions,* very good self-explanatory diagrams/designs.
3) Interface design matches requirements	Interface design matches *5% of the requirements,* diagrams/designs are not understand at all.	Interface design matches *25% of the requirements,* diagrams/designs are not easy to understand.	Interface design matches *50% of the requirements,* self-explanatory diagrams/designs.	Interface design matches *80% of the requirements*, good self-explanatory diagrams/designs.	Interface design matches *all the requirements,* very good self-explanatory diagrams/designs.
4) Component & deployment design shows the modules and system elements	Component & deployment design shows *5% of the modules and system elements,* diagrams/designs are not understand at all.	Component & deployment design shows *25% of the modules and system elements,* diagrams/designs are not easy to understand.	Component & deployment design shows *50% of the modules and system elements,* self-explanatory diagrams/designs.	Component & deployment design shows *80% of the modules and system elements,* good self-explanatory diagrams/designs.	Component & deployment design shows *all the modules and system elements,* very good self-explanatory diagrams/designs.
5) Quality and correctness of diagrams and notations / Clearly and coherently written academic discourse	Not able to draw diagrams and write ideas clearly and coherently	Able to draw diagrams and write ideas with limited clarify and coherence and require further improvements	Able to draw diagrams and write ideas fairly coherently and clearly but require minor improvements	Able to draw diagrams and write ideas coherently and clearly	Able to draw diagrams and write ideas with excellent coherence and clarity

Note for Rate: 0 = non existence

AFFECTIVE COMPONENT RUBRIC

PROJECT III – DEVELOPMENT / TESTING / PROJECT MONITORING & REPORTING

Descriptive Elements	Very Weak (1)	Weak(2)			Excellent(5)
1)Screens & Explanation, Linking & Flow of system (Video Content)	Video content has *5% of the screens, explanations, linking and flow* of the system, visual video contents are not understand at all.	Video content has *25% of the screens, explanations, linking and flow* of the system, visual video contents are not easy to understand.	Video content has *50% of the screens, explanations, linking and flow* of the system, self explanatory visual video contents.	Video content has *80% of the screens, explanations, linking and flow* of the system, good clear and self explanatory visual video contents.	Video content has *all the screens, explanations, linking and flow* of the system, very clear and self explanatory visual video contents.
2) Quality of Prototypying System/App etc.(Software Outcome)	Quality of Prototypying System/App is very weak, and able to *demonstrate only 5%* of the required functionalities.	Quality of Prototypying System/App is weak, and able to *demonstrate 25%* of the required functionalities.	Quality of Prototypying System/App is fair, and able to *demonstrate 50%* of the required functionalities.	Quality of Prototypying System/App is good, and able to *demonstrate 80%* of the required functionalities.	Quality of Prototypying System/App is excellent, and able to *demonstrate all* the required functionalities.
3) Software Testing Procedures and Strategies (Testing)	Software Testing Procedures and Strategies is *demonstrated,* but the intent of finding *particular errors is very shallow/weak.*	Software Testing Procedures and Strategies is *demonstrated,* but the intent of *finding particular errors is shallow/weak.*	Software Testing Procedures and Strategies is *demonstrated, but in general, with unspecific intent* of finding errors.	Software Testing Procedures and Strategies is *demonstrated, but in general, with a specific* intent of finding particular errors.	Software Testing Procedures and Strategies is *demonstrated in detail, with a specific intent* of finding particular errors.
4) Work Responsibility and Work Relations towards updated Requirements & Design - (Group Relations + Documentation)	Does not perform assigned tasks within by the scope of work even with close supervision / Has a disharmonious relationship with co-workers and within, institution, work groups and community when at work	Perform assigned tasks within by the scope of work with close supervision / Has a less harmonious relationship with co-workers and within, institution, work groups and community when at work	Perform assigned tasks within by the scope of work and meets expectation / Has a satisfactory relationship with co-workers and within, institution, work groups and community when at work	Perform assigned tasks within by the scope of work and exceeds expectation / Has a good relationship with co-workers and within, institution, work groups and community when at work	Perform assigned tasks beyond the scope of work and beyond expectation / Has a well-acknowledged relationship with co-workers and within, institution, work groups and community when at work
5) Clear Delivery of Ideas (Presentation)	Not able to deliver ideas clearly and require major improvements	Able to deliver ideas and require further improvements	Able to deliver ideas fairly clearly and require minor improvements	Able to deliver ideas clearly	Able to deliver ideas with great clarity

Note for Rate: 0 = non existence

USEFUL LINKS FOR PROJECT

Use Case links
https://www.uml-diagrams.org/use-case-diagrams.html
https://www.uml-diagrams.org/use-case-diagrams-examples.html
https://www.lucidchart.com/pages/uml-use-case-diagram
https://www.smartdraw.com/use-case-diagram/
https://online.visual-paradigm.com/tutorials/use-case-diagram-tutorial/
video
https://www.youtube.com/watch?v=zid-MVo7M-E

Activity diagram links
https://www.uml-diagrams.org/activity-diagrams-examples.html
https://www.lucidchart.com/pages/uml-activity-diagram
https://www.lucidchart.com/pages/swimlane-diagram
https://www.smartdraw.com/activity-diagram/examples/
https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-activity-diagram/
video
https://www.youtube.com/watch?v=yAihwmczqsk

ER diagram links
https://www.smartdraw.com/entity-relationship-diagram/
https://www.smartdraw.com/entity-relationship-diagram/examples/
https://creately.com/blog/diagrams/er-diagrams-tutorial/
http://www.cs.uregina.ca/Links/class-info/215/erd/
video
https://www.youtube.com/watch?v=QpdhBUYk7Kk
https://www.youtube.com/watch?v=-CuY5ADwn24
https://www.youtube.com/watch?v=c0_9Y8QAstg
https://www.youtube.com/watch?v=-fQ-bRllhXc

Class diagrams links
https://www.lucidchart.com/pages/uml-class-diagram
https://www.tutorialspoint.com/uml/uml_component_diagram.htm
https://www.smartdraw.com/class-diagram/
https://www.ibm.com/developerworks/rational/library/content/RationalEdge/sep04/bell/index.html
https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-class-diagram/
videos
https://www.youtube.com/watch?v=UI6lqHOVHic
https://www.youtube.com/watch?v=xiUFTLIU-lw
https://www.youtube.com/watch?v=ZyST6OFtb7k

State transition diagram links
http://www.cs.unc.edu/~stotts/145/CRC/state.html
https://www.stickyminds.com/article/state-transition-diagrams
https://www.smartdraw.com/state-diagram/
https://www.lucidchart.com/pages/uml-state-machine-diagram
videos
https://www.youtube.com/watch?v=PF9QcYWIsVE
https://www.youtube.com/watch?v=OsmWASXE2IM

Sequence diagram links
https://www.lucidchart.com/pages/uml-sequence-diagram
https://www.smartdraw.com/sequence-diagram/
https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-sequence-diagram/
https://www.ibm.com/developerworks/rational/library/3101.html
videos
https://www.youtube.com/watch?v=XIQKt5Bs7II
https://www.youtube.com/watch?v=cxG-qWthxt4
https://www.youtube.com/watch?v=18_kVIQMavE