SLIIT
Discover Your Future

BSc (Hons) in Information Technology

Assignment 1 Cover Sheet

IT1060 – Software Process Modeling **Year 1 Semester II- 2023**

PROJECT ID	**MLB_14.01_05**
CASE STUDY NAME	**Online Customer Support System**
CAMPUS/CENTER	**Malabe**

Group Details:

	Student Registration Number	Student Name
1	IT22320582	Jayasundara D.W.S
2	IT22305350	Rajapakshe P.H.Y.L
3	IT22337412	D.Rajapaksha
4	IT22341136	M.A.S Gunathilaka
5	IT22315632	R.N.D K.Rajapaksha

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We hereby certify,

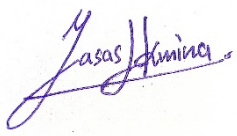
☑ The attached is our own work and no further changes will be made.

☑ We have contributed in this assignment to the best of our ability. And we understand,

☑ We may be subject to student discipline processes in the event of an act of academic misconduct by us including an act of plagiarism or cheating.

Group Details:

	Student Name	Student Registration Number	Date	Signature
1	Jayasundara D.W.S	IT22320582	30.04.2022	
2	R.N.D K.Rajapaksha	IT22315632	30.04.2022	
3	M.A.S Gunathilaka	IT22341136	30.04.2022	
4	D.Rajapaksha	IT22337412	30.04.2022	

5	**Rajapakshe P.H.Y.L**	**IT22305350**	**30.04.2022**	

ASSUMPTIONS

1. Online customer support services provide several advantages, including the convenience of using online support for assistance and the simplicity with which customers can communicate their required industry problems.

2. In order to create a comfortable working environment for customers, we have chosen to employ system administrators to provide solutions to any system maintenance issues that may arise. This will help to avoid system interruptions and other issues with the system, which can be disruptive and frustrating for customers.

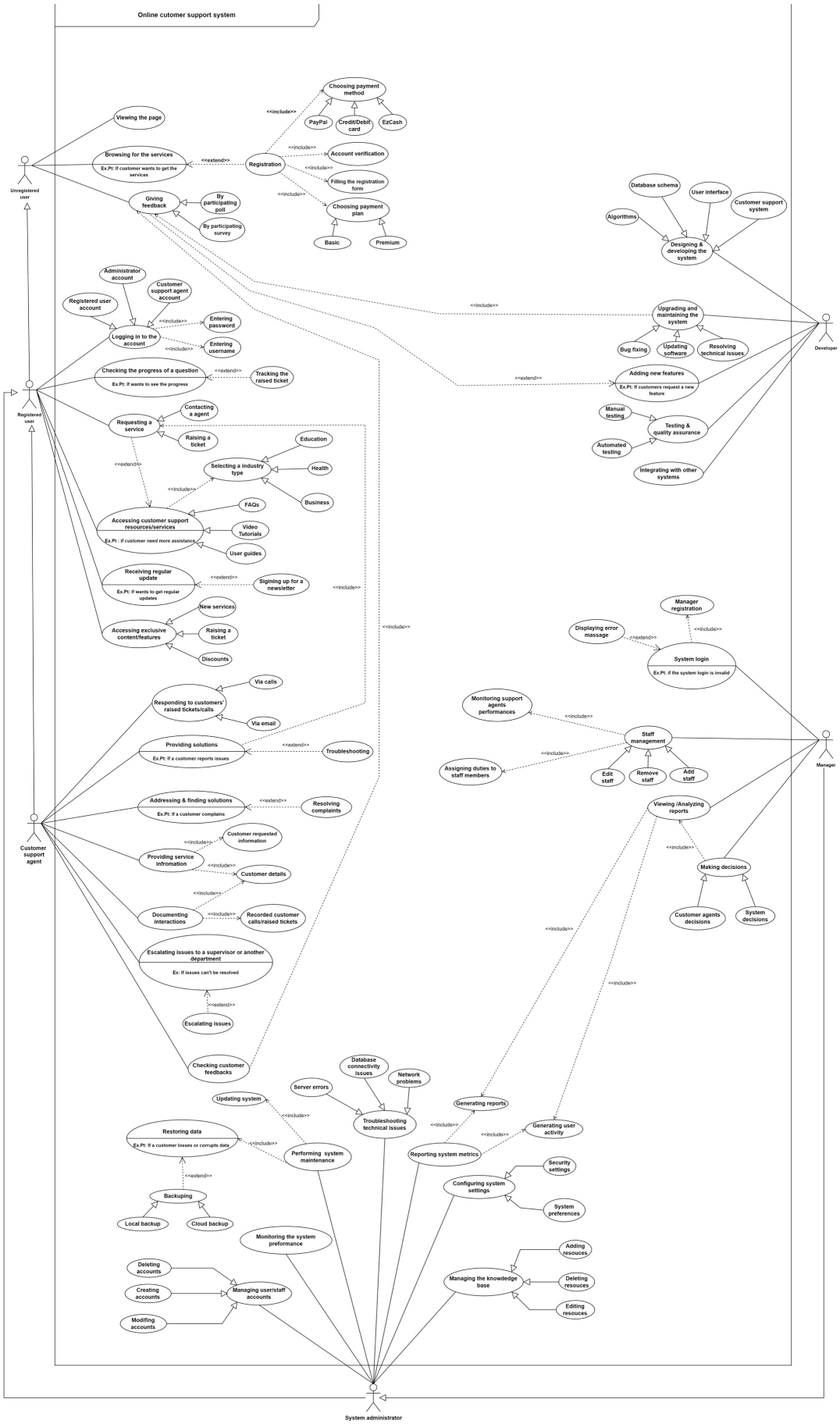
3. We have chosen to escalate any problem for which a customer support agent is unable to find a resolution since this system should be adaptable enough to suit a wide range of client needs. This guarantees that all client complaints are handled promptly and effectively.

4. We have included a feedback trail so that customers can express their ideas and experiences because the system can assume that they are happy with the level of service offered through online channels. The system will be improved using this feedback to make sure it satisfies consumer needs.

5. We have included a manager to direct the support team because they are equipped with the knowledge and experience needed to effectively address client complaints.

6. We have made the decision to hire developers to add new features and enhance the system based on consumer requests in order to give a user-friendly solution to our clients.

USE CASE DIAGRAM



As IT22305350
Rajapakshe P.H.Y.L

SECTION WORKED ON:

Actors:

- Unregistered user
- Registered user

Use cases added to the diagram:

- Viewing the page
- Browsing for the services
- Giving feedback
- Logging in to the account
- Checking the progress of a question
- Requesting a service
- Accessing customer support resources/services
- Receiving regular update
- Accessing exclusive content/features

Use case scenarios:

- Accessing customer support resources/services.

Special contribution:

- Assisted to find the actors and main use cases in the diagram.
- Created the registered user and unregistered user use case diagram.
- Drew the registered user, unregistered user use case based on my use case sketch and manager use case diagrams according to the sketches provided by other members of the group.
- Created and helped to discover include and extend relationships between the use cases.

- Assisted in identifying generalization relationships between use cases and actors, and establishing appropriate links between them.
- Created and modified the word document.

Challenges faced**:**

- Spend lot of time on finding similar systems to get an idea about the online customer support system and identifying the actors and main use cases about online customer support system.
- Had some difficulties when generalizing between actors.
- Spend lot of time when figuring out how to connect use cases using include and extend relationships.
- Had some difficulties when using draw.io software to create the use case diagram.

Use case scenario:

Number	OCSS001	
Name	Accessing customer support resources/services.	
Summary	A registered user who needs customer support will be able to access customer support resources and the services.	
Priority	5	
Preconditions	The registered user must have a basic or premium valid account.	
Postconditions	Registered customer gets requested resources or service.	
Primary Actor(s)	Registered user	
Main Scenario	**Steps**	**Action**
	01	The registered user browses to the customer support website.
	02	User browses to login page.
	03	User enters username and password.
	04	System validates the username and password.

	05	System allows the user to login to their account.
	06	Registered user navigates into the customer support interface.
	07	The system shows the list of customer support resources and services.
	08	The user goes through with the customer support resources.
	09	The user selects the relevant support option for their problem.
	10	The system gives the form to submit their support request.
	11	The registered user fills out the form according to their support request.
	12	A customer support agent reviews the filled form.
	13	A customer support agent comes up with the solution about the problem.
	14	A customer support agent responds with a solution to the user.
	15	The user will accept the given solution.
	16	The customer support agent will verify the solution.
	17	The customer support agent will close the process.
Extension	**Steps**	**Branching Action**
	03.a	**If the username and password mismatches** 03.a. system will ask to re-enter the username and password.
	08.a	**If user is not satisfied with the provided resources** 08.a. user will navigate into the alternative services.
	11.a	**If user does not fill out all required information** 11.a. user will be redirected to fill in the necessary information.
	12.a	**If customer support agent is getting delay to respond**

		12.a. Customer can track the progress and inform for quick solution.
	14.a	**If customer is not satisfied with the solution** 14.a. The problem is redirected to the customer support agent to generate alternative solutions.

As IT22315632

R.N.D K.Rajapaksha

SECTION WORKED ON:

Actors:

- Customer Support Agent

Use cases added to the diagram:

- Responding to customer raised ticket/call.
- Providing solutions
- Addressing and finding solutions
- Providing service information
- Documenting interactions
- Escalating issues to a supervisor or another department
- Checking customer feedback

Use case scenarios:

- Responding to customer raised ticket/call.

Special contribution:

- Find out more regarding this type of online system to clear up any uncertainty.
- Determine the customer support agent's use cases.
- To obtain a clear idea, draw the customer support agent use cases.

- Work with other team members to get an understanding of what the system will include.

Challenges faced**:**

- When looking for information, it was difficult to determine what information is relevant.
- It is difficult to determine what the main use cases of a customer support agent are.
- We have to complete this within the time period specified, and I give the support in managing the time effectively for the team.

Use case scenario:

Number	OCSS002	
Name	Responding to customer requests	
Summary	Customer will be given information regarding requested information	
Priority	6	
Pre-condition	Customer support agent should have a customer support agent account	
Post condition	Customer support agent records all documents about the request	
Primary Actor	Customer Support Agent	
Trigger	Registered User wants to request a help	
Main Scenario	**Step**	**Action**
	1	Registered user requests information
	2	The customer support agent browses into the support agent login page
	3	The customer support agent enters user credentials
	4	System validates the username and password
	5	System allows the customer support agent to login to the customer support agent account.

	6	Customer support agent acknowledges the ticket/call
	7	Customer support agent sends a reply to the user “Received the request”
	8	Prioritize the request according to the user expectation
	9	Study the request and find information related to the request
	10	Discover an effective solution to the request
	11	Provide preliminary findings to the customer
	12	Closes the ticket
	13	Records all information about ticket
Extensions	**Step**	**Branching Action**
	4.a	Insert invalid credentials, display a message “Invalid and re-enter”
	6.a	If user already removes the ticket, exist
	8.a	If customer does not want information immediately, provides user with an estimated time period
	8.b	If customer wants information immediately, quickly starts the process
	9.a	If information can be found from the database , Find information autonomously
	9.b	If agent cannot find information from the data base escalates the problem
	9.c	If agent wants more time than the provided time slot, inform it to the customer
	10a	If there are more solutions, Sort out solutions
	11.a	If customer not satisfied with the solution, regenerate the solution

As IT22320582
Jayasundara D.W.S

SECTION WORKED ON:

Actors:

- System administrator

Use cases added to the diagram:

- Managing user/staff accounts Membership management
- Monitoring the system performance
- Performing system maintenance
- Troubleshooting technical issues
- Reporting system metrics
- Configuring system settings
- Managing the knowledge base

Use case scenarios:

- Performing system maintenance

Special contribution:

- Guided the group members as the group leader.
- Helped to find the actors and main use cases in the diagram.
- Created the system administrator use case diagram.
- Drew my own use case diagram, the system administrator by myself and drew the customer support agent, the developer use case using the sketches provided by group members.
- Designed and helped other members to discover include and extend relationships between the use cases.
- Created and modified the word document.

Challenges faced**:**

- Spend a lot of time finding out how to connect use cases utilizing extend relationships.
- Spend a lot of time researching comparable systems to gain a better understanding of the actors and primary use cases for the online customer support system.

Use case scenario:

Number	OCSS003	
Name	Performing system maintenance	
Summary	A registered user who needs customer support will be able to access customer support resources and the services.	
Priority	4	
Preconditions	The system administrator is logged into the online customer support system.	
Postconditions	The system administrator updates the system and backups data.	
Primary Actor(s)	System administrator	
Main Scenario	**Steps**	**Action**
	01	The system administrator browses into the administrator login page.
	02	The system administrator enters username and password.
	03	System validates the username and password.
	04	System allows the administrator to login to the administrator account.
	05	The system administrator determines needed maintenance activities.
	06	The system administrator gets client suggestions from the customer support agent.
	07	The system administrator reviews the suggestions.

	08	The system administrator comes up with a plan for maintenance with the favor of the developer.
	09	The system administrator sends the maintenance plan to the manager for approval.
	10	The system administrator applies maintenance updates/alternatives with the favor of the developer.
	11	The system administrator informs the support staff and alerts them of the expected downtime to run the trial.
	12	The system administrator runs the updates and the alternatives in the system.
	13	The system administrator restores data.
	14	The system administrator informs the support staff that the maintenance is complete.
	15	The system administrator pulls out the maintenance mode to accessing clients to the system again
Extension	**Steps**	**Branching Action**
	3.a	**If the username and password mismatches** 03.a. The system will ask to re-enter the username and password.
	10.a	**If the manager doesn't approve the maintenance plan** 03.a. The system administrator redirects new suggestions and changes to the developer.
	13.a	**If the data in the system is lost during the maintenance.** 08.a. The system administrator restores data by back upping.
	11.a	**If the updates and alternatives don't run properly** 11.a. The system administrator follows for further changes with the developer.

As IT22337412
D. Rajapaksa

SECTION WORKED ON:

Actors:

- Manager.

Use cases added to the diagram:

- System login.
- Staff management.
- Viewing/Analyzing reports.
- Making decisions.

Use case scenarios:

- Viewing/Analyzing reports
- Staff management

Special contribution:

- I assisted my team members in task identification and actor relationship discovery by looking up related projects.
- Helped to fix extend use cases.

Challenges faced**:**

- Difficulty of finding the scenario.
- Difficulty of fixing actor use cases.
- There are some signal failures.
- Time balancing and completing the assignment fastest.

Use case scenario:

Use case number	OCSS004	
Use case name	Staff management	
Summary	Manages to staff	
Priority	3	
Pre-conditions	Manager has login to the system	
Post-conditions	Manager must manage staff	
Primary-Actor	Manager	
Main scenario	**Steps**	**Action**
	01	Manager login to system entering validate manager credentials.
	02	Login to staff management system.
	03	View staff members worked details.
	04	Searches each one of staff member has weaknesses or good commitment.
	05	Group they are separately.
	06	Analyze each weak staff member.
	07	Determine whether they are sign off the system.
	08	Fill the removal vacancies.
	09	Appreciating staff members who good commitment.
	10	Manage staff facilities.
Extensions	**Steps**	**Branching Action**
	02.a 02.b 02.c	If the input username and password are incorrect. Manager will receive the error message. Manager can choose forgot password option.
	04.a 04.b	If the staff member has weaknesses. Take a decision to sign off the system.

	09.a	If the staff member has good commitment.
	09.c	Appreciate the staff member.

Use case number	OCSS004	
Use case name	Viewing/Analyzing reports	
Summary	View all reports.	
Priority	2	
Pre-conditions	Manager log in system.	
Post-conditions	Manager analyzes reports.	
Primary-Actor	Manager	
Main scenario	**Steps**	**Action**
	01	The Manager access the system inputting username and password.
	02	The system validates Manager credentials.
	03	Go to the reporting or analytics section of the system.
	04	Select the appropriate time period for the report.
	05	Select the key performance indicator and get metrics response time, resolution time, customer satisfaction scores.
	06	Generate the report based on the selected key performance indicators and timeframe.
	07	Analyze the report data to identify trends and patterns.
	08	Look for any areas of concern or improvement that might need more research.
	09	Compare the report data against historical data to spot any changes over time.
	10	Go deeper through report data to find problems.

Use case number	OCSS004	
	11	Take action to improve customer support experience.
	12	Monitor and adjust changes to improve customer support experience.
Extensions	**Steps**	**Branching Action**
	02.a 02.b 02.c	If the input username and password are incorrect. Manager will receive the error message. Manager can choose forgot password option.

As IT22341136

M.A.S Gunathilaka

SECTION WORKED ON:

Actors:

- Developer.

Use cases added to the diagram:

- Design and developing the system.
- Upgrading and maintaining the system
- Adding new features
- Testing & quality assurance
- Integrating other systems

Use case scenarios:

- Design and developing

Special Contributions:

- Helped in providing ideas for the creation of the use case diagram.
- Helped to identify actors, use cases and relationships.
- Helped to draw the use case diagram.

Challenges faced**:**

- Difficulty in finding use cases for the actors.
- Difficulty in finding use case generalizations.
- Managing time when compiling the report

Use case scenario:

Number	OCSS005	
Name	Design and developing	
Summary	Developer designing and developing the system	
Priority	1	
Preconditions	Developer Check whether there is any development to be done to the system	
Postconditions	Developer will design the system according to requirement	
Primary Actor(s)	Developer	
Main Scenario	**Step**	**Action**
	1	Developer login to the system
	2	System shows the customer needs and requirements
	3	Analyze the requirements

	4	Identify the main requirements (specific requirements)
	5	Find solutions for the requirements
	6	Developer selects the appropriate software to develop the system
	7	Design the new features for the specific requirements of the user
	8	Developer does the testing to identify the faults
	9	Deploy the system after doing the testing
	10	Send it to the customers
	11	Take feedback from the customer
	12	Check whether the customer issues has been resolved
Extensions	**Step**	**Branching Action**
	1a	Notify the developer username & password are invalid
	3a	Check whether requested requirements can be done to the system
	7a	Design the new features using the software without effecting to the existing system
	8a	Software Display whether the system is working properly
	8b	If any issue occurred during the testing, developer need to solve the problem
	11a	If any customer requirements are not fulfilled developer must develop the system again

Assignment I - Marking Scheme

IT1060 - Software Process Modeling Semester 2-2023

Group Number: MLB_14.01_05 **Case Study Topic:** Online Customer Support System

Use Case Diagram	***Max. Mark***	*IT22320582*	*IT22305350*	*IT22337412*	*IT22341136*	*IT22315632*
1. Main use cases (at least 10)	25 Marks					
2. Actors and Actor Generalization	10 Marks					
3. Relationships between use cases (at least 5 each) a. Include -•• 5 Marks. b. Extend -•• 10 Marks. c. Generalization -•• 10Marks	25 Marks					
4. Creative thinking	5 Marks					
5. Accuracy and Completeness – (System name, boundary etc.)	5 Marks					
6. Contribution to use case diagram (Individual Mark) • Each member should comment on a) Section worked on b) Special contributions c) Challenges faced	10 Marks					
Sub Total Marks						
Comments						

Assignment I - Marking Scheme

IT1060 - Software Process Modeling Semester 2-2023

IT1060 - Software Process Modeling Semester 2 -2023

Use Case Scenario (Individual Mark)		*IT22320582*	*IT22305350*	*IT22337412*	*IT22341136*	*IT22315632*
7. Use case ID, Use case Name, Primary actor Preconditions and Post-conditions	5 Marks					
8. Main Success Scenario	10 Marks					
9. Extensions	5 Marks					
Sub Total Marks						
Comments						
Total	***100 Marks***					

A Group mark will be assigned for sections 1 to 5.