THE KILLER LEMURS

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STARSTRUCK!

REQUIREMENTS MODELLING REPORT

School of Information and Physical Sciences
SENG2130: System Analysis and Design

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Table of Contents

INTRODUCTION 3
BUSINESS RULES 4
Scenario Rules 4
Work, Health, and Safety Rules 5
Other Legislations and Standards 6
Ethical, Security, and Privacy Rules 6
USE CASES 8
Book Flight (by Lachlan Higgins) 9
Pay by Cryptocurrency (by Noah Cook) 11
Abort Flight (by Gia Thu Tran) 12
Attend Flight Service (by Dean Brownlie) 15
Land Home (by Amanda Viray) 17
Maintain Mission Control (by Oliver Robin) 19
ACTIVITY DIAGRAMS 21
DOMAIN CLASS DIAGRAM 29
TEAM MANAGEMENT 31
Meeting Notes 31
MS Teams Analysis Report 35
MS Project Gantt Chart 36
Team Pre-Action Plan 38
CONCLUSION 42
REFERENCES 43

INTRODUCTION

Space tourism-based business 'Starstruck!' requires a new online management system. As the business in question is detailed around emerging technologies, this system must be meticulously designed, in hopes to recognise and correct all chances for error.

This report will entail the requirements of this management system. Specifically, it will analyse and document user requirements and system processes. This will be done by means of displaying various business rules, use cases, activity diagrams and domain class diagrams, all of which have been extrapolated from the system definition.

Problem Identification

The Space Flight Management System being designed for 'Starstruck!' is to be designed for the use of staff members.

The business manager should have effortless access to any data they would require, such as monthly financial reports for audit purposes, live flight data without delays, or need-to-know access to provided private records. Furthermore, all information must be maintained securely, to protect the customer, as well as the integrity of 'Starstruck!'

All structures of the system must uphold ethical necessities and abide by the legal systems put into place.

Specifics

With hopes to answer concerns raised in 'Problem Identification', this report will go into intricate detail about modelling the system. Six use cases are presented, those being Book Flight, Pay Flight, Abort Flight, Provide Customer Service, Land Home, and Maintain Mission Control.

These use cases were selected as they cover all parts of the system, thus allowing visibility into how all the separate parts of the system will interact. Alongside these Use Case Diagrams are descriptions, and activity diagrams. These should serve to aid in the creation and understanding of the system.

Furthermore, a Domain Class Diagram has been designed to map out the entirety of the system. This reveals the overall flow, and structure of the system, providing a holistic view rather than what is provided by analysing individual subsystems.

BUSINESS RULES

The business rules are used for determining information components which are used in the design, analysis, implementation, and maintenance of an information system, which is 'Starstruck!'. A relevant technical definition before reading the rules:

- **Break-up**: Any event which generates fragments which are released into earth orbit. This includes: an explosion caused by chemical or thermal energy, ruptures caused by increased internal pressures, or energy caused by collision with other objects.

Scenario Rules

1. The flight must only go ahead if all factors such as mission control availability, local weather, etc. are satisfied.
2. If any kind of problem is detected during launch such as rapid weather change, etc. The flight must be aborted.
3. The safety system must check to see if a flight will be aborted 5 minutes before launch and 30 seconds after the second stage of rocket fire.
4. If the customer pays for insurance and the flight is aborted, they are entitled to a partial refund, full refund or may rebook for another time - depending on the level of insurance paid for.
5. If the abort system is used, then it must be recorded in an audit log along with relevant flight details.
6. Customers must not pay with cash.
7. Bookings are taken to the admin staff and will be reviewed by the business manager who must allow or deny the flight.
8. During re-entry of the rocket, all the parts will be burned up in the atmosphere excluding the capsule in which all staff members and customers are located.
9. The capsule must land in a pre-defined area within the ocean.
10. If customers are going on a moon and long flight, they must select food and drinks before take-off.
11. Kitchen Staff have the right to deny food choices, if so, the customer must select another option.
12. If a luxury food item is chosen, customers must pay an additional fee.
13. The spacecraft must maintain a constant connection to mission control.
14. The on-board system must relay the current status and allow for voice and video communication.
15. If the override system is to be used, it must be recorded in the audit log.
16. Live system data must be stored in the flight log every 5 seconds.
17. The amount of fuel in the rocket must always be updated and logged every 5 seconds.
18. The amount of crew on the spacecraft must be recorded and logged every 5 seconds.
19. The correct amount of rocket weight must always be determinable and known.
20. Everyone must be weighed before entering the spacecraft.
21. Payments must be cleared and approved before a flight is booked.
22. Staff must be adequately trained and proficient in their tasks.
23. If a staff members qualifications expire, they must regain those qualifications again before they can work.
24. Medical checks must be performed at the start of a flight.
25. Everyone must receive a medical check after they have been picked up from the drop off point.
26. Staff can deny passage onto the spacecraft if determined that something is unsafe.
27. If something is medically wrong with a customer, the problem must be communicated with their GP.
28. Fuel must be weighed before flight lift off.
29. Booking must be completed at least a month in advance.
30. Customers medical details must be stored in a log for future reference.
31. Medical staff must deny a passenger if they are medically unfit to go on space flight.

32. If the customer is denied on medical grounds, they are entitled to a partial refund, full refund or may rebook for another time - depending on the level of insurance paid for.

Work, Health, and Safety Rules

1. Each department *(ex. Mission control, Kitchen etc.)* will be assigned a Health & Safety Representative and an associated safety policy. If there is any violation of safety protocol, the relevant Representative will suspend the department's operations until the matter is resolved (WorkSafe ACT, n.d.).
2. During any changes to the business (such as department restructuring, changes in equipment or staff, etc.), a risk analysis is to be performed to manage and mitigate potential risks that may develop, as well as consulting employees on relevant changes to discuss any potential risks that may arise within the scope of their work. (Safe Work Australia, n.d.).
3. If any critical equipment fails or is discovered to contain a fault, all flights are to be suspended until the equipment is repaired or replaced and all other critical equipment is reinspected (Safe Work Australia, n.d.).
4. All injuries that occur to any customer or employee of 'Starstruck!' are to be logged in a register of injuries, including the time/date, department, etc. If a single department experiences two or more injuries within one week, an investigation will be conducted to re-evaluate the department's safety standards, including a risk analysis (SafeWork NSW, n.d.).
5. If any worker is injured due to an on-site accident that renders them unable to work as normal, they will be processed through a Return-to-Work program in accordance with SIRA regulations (State Insurance Regulatory Authority, n.d.).
6. Due to the high-risk nature of the work being performed, all technical staff will have a certification period of 6 months. If a worker's certification lapses, they will not be permitted to perform any work until they have passed a recertification training program (SafeWork NSW, n.d.).
7. If any employee is found to be intentionally working in a manner that violates company safety policies, they will have their certification nullified effective immediately, requiring recertification. If this occurs a second time, their employment will be terminated (SafeWork NSW, n.d.).
8. Any third-party contractor for 'Starstruck!' will be required to submit a WH&S policy for review, which must be approved prior to commencing any on-site work. If a policy fails the approval process or the contractor violates their policy, the contract will be terminated (SafeWork NSW, n.d.).
9. All customers are to be tested for COVID-19 prior to launch. Any customer that tests positive will not be permitted to attend their flight (NSW Government, 2022).
10. If a prospective flight path returns a calculated maximum third-party collective casualty risk greater than $1x10^{-4}$ per launch or a maximum third-party individual casualty risk greater than $1x10^{-6}$ per launch, the path will be substituted for one with a lower risk (Australian Space Agency, 2019).

Other Legislations and Standards

1. All Starstuck spacecraft must not be within 15 degrees north or south of the earth equator when between altitudes of 35586-35986km (Steering Group, 2007).
2. Starstuck customers are not allowed to bring any kind of stored energy onto the spacecraft.
3. The amount of time which a Starstuck spacecraft is in orbit around earth must not exceed the planned flight orbit time (Steering Group, 2007).
4. If objects are planned to be expelled from the spacecraft, an assessment must be made by authority to verify the object will not be hazardous to any other spacecraft in the next 30 years (Steering Group, 2007).
5. Every Starstuck spacecraft must be designed and operated to prevent explosions and ruptures at end-of-mission (Steering Group, 2007).
6. Starstuck spacecraft's propellants and fluids must be depleted as much as possible during the mission. This can be done by venting or burning any excess fluid before re-entry (Steering Group, 2007).
7. Any high-pressure objects on a Starstuck spacecraft must have a leak-before-burst design (Steering Group, 2007).
8. Fly and momentum wheels must be deactivated during disposal phase of flight (Steering Group, 2007).
9. Any necessary form of stored energy that comes onto a Starstuck spacecraft must be assessed to achieve adequate mitigation measures against break-up (Steering Group, 2007).
10. Starstuck spacecraft must be tested in failure mode with an effects analysis or equivalent analysis to ensure nothing in failure mode will lead to break-up and if there is probable cause to minimize the occurrence as much as possible (Steering Group, 2007).

Ethical, Security, and Privacy Rules

Ethical

1. Starstruck must compensate for the damaged, destroyed, or lost belonging that were reported or claimed that are caused by the business (Australian Competition & Consumer Commission, n.d., What compensation is covered Section).
2. Starstruck will not compensate or pay for any losses or damage belonging that are not caused by the business (Australian Competition & Consumer Commission, n.d., What is not covered Section).
3. If the flight gets delayed due to issues within Starstruck's control. The business will give credit to customers for future travel and further compensation depending on the circumstance of length of the delay, the reason for the delay (Australian Competition & Consumer Commission, n.d., The Australia Consumer Law and flights *Section*).
4. If the flight gets canceled before launch due to issues within Starstruck's control. The business will give a full refund or offer a new date to the customer depending on the circumstance of the reason for the cancellation (Australian Competition & Consumer Commission, n.d., The Australia Consumer Law and flights *Section*).

Privacy

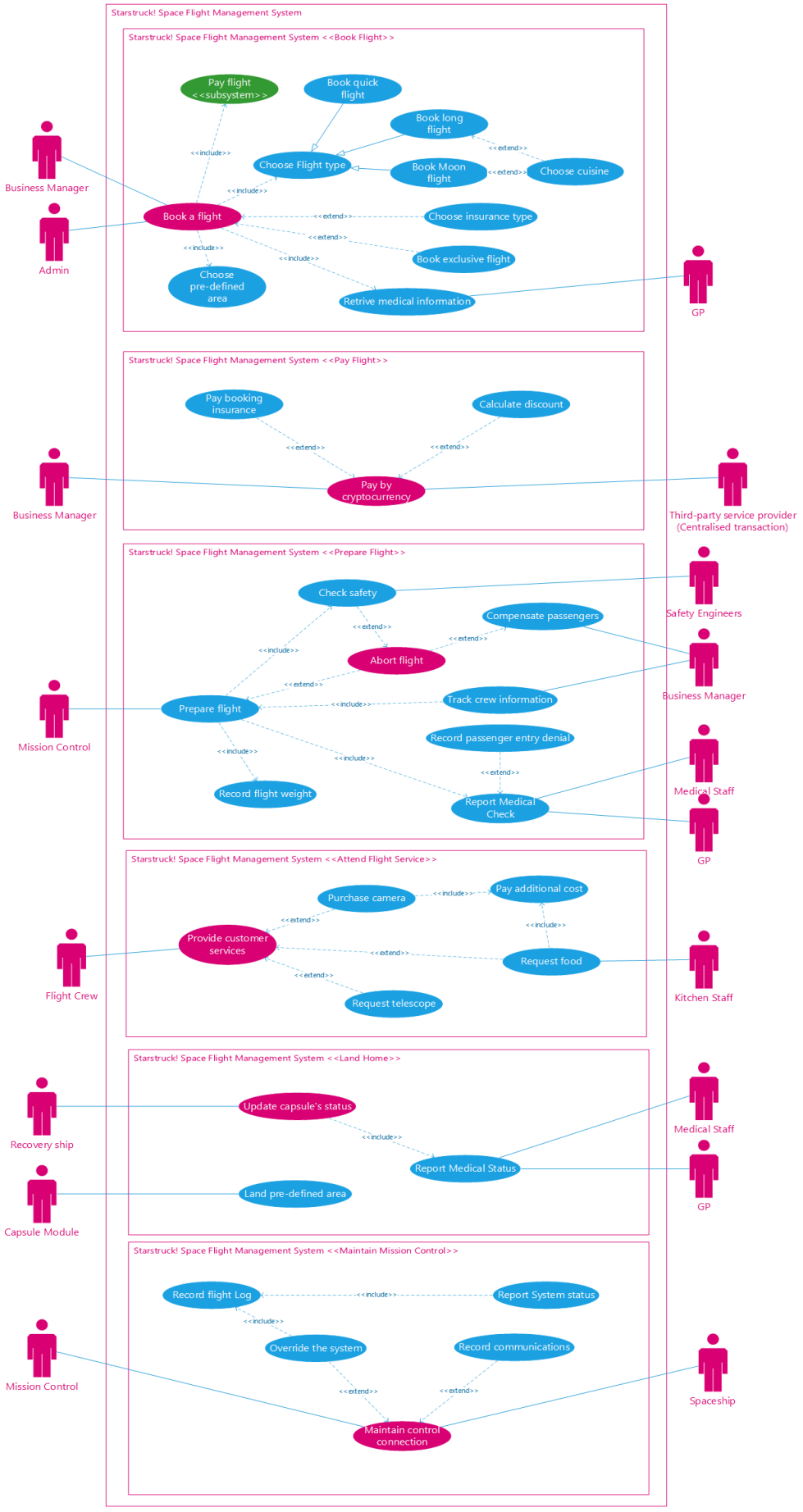
5. All personal information and personal health information collected from any customer and employee must be kept as private records (Government of Australia - Office of the Australia Information Commissioner, n.d., The Privacy Act 1988: Australian Privacy Principles Section).
6. Accessing and using specific private records will be limited to certain internal staff on a 'need-to-know' basis (Government of Australia - Office of the Australia Information Commissioner, n.d., The Privacy Act 1988: Australian Privacy Principles Section).

7. The provider (a customer or an employee) and the collector (an administrator staff or a business manager) of any personal information must confirm the quality of the information includes accuracy, up to date, and completeness (Government of Australia - Office of the Australia Information Commissioner, n.d., The Privacy Act 1988: Australian Privacy Principles Section).
8. If a customer cancelled a booking or an employee no longer works at Starstruck, the business must destroy or de-identify the relevant personal information (Government of Australia - Office of the Australia Information Commissioner, n.d., The Privacy Act 1988: Australian Privacy Principles Section).

Security

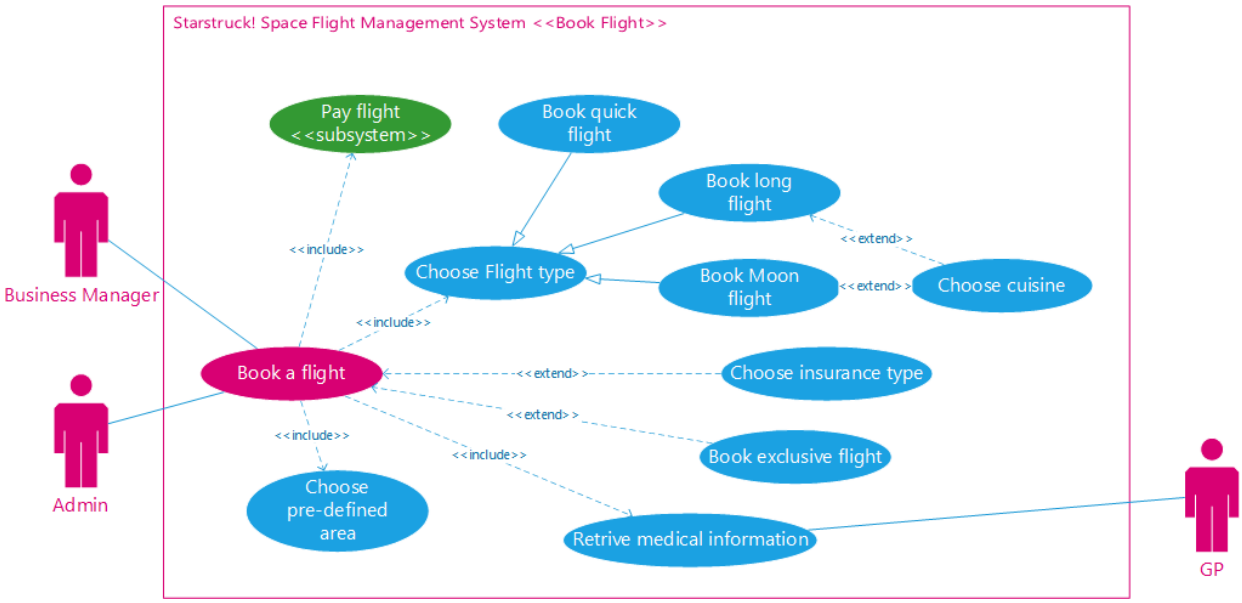
9. Passengers and members of the flight crew are required to undergo the security screening process before boarding the aircraft (Australia Government - Department of Home Affairs, 2020, Security screening process Section).
10. If any customer or flight crew refuses to take any procedure of the security screening process, they are not permitted to board the aircraft (Australia Government - Department of Home Affairs, 2020, Security screening process Section).

USE CASES



StarStruck! Space Flight Management System – Use Case Overview

Book Flight (by Lachlan Higgins)



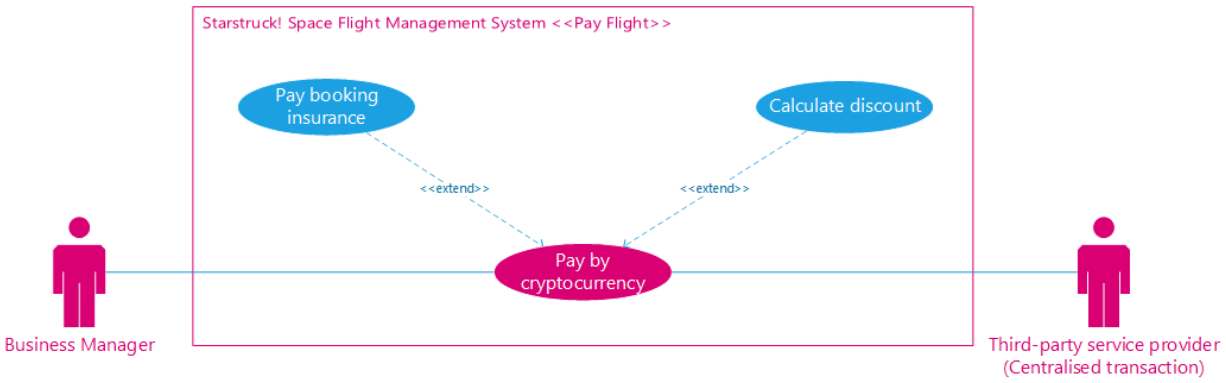
Use Case List:

1. **Choose pre-defined area:** Select where the customer's rocket will land.
2. **Book exclusive flight:** A customer may choose (optional, thus extends) to have their flight exclusive to either them or a group. This increases the price of the trip.
3. **Choose Flight Type:** There are three types of flights provided by 'Starstruck!', but only one may be selected per booking. This is required. The options are:
    a. **Book quick flight:** This will take a customer into outer space and return within a few hours.
    b. **Book long flight:** This will take a customer along a full orbit of Earth.
    c. **Book moon flight:** This is a week-long trip that would take the customer to the moon and back.
4. **Pay Flight: E**ntails the payment process for 'Starstruck!' customers. Essential for the booking to occur
5. **Choose cuisine:** Customers taking the long and moon flights are required to put an order for food into the kitchen staff.

Use Case Name	**Book Flight**	
Scenario	Create booking for customer.	
Triggering Event	A booking request is made to a system admin or business manager	
Brief Description	The Book Flight use case entails the process of a flight being booked for either a group or individual customers.	
Actors	Business Manager, Admin	
Stakeholder	GP	
Related Use Cases	Pay Flight, choose flight type, book exclusive flight, choose pre-defined area, Choose cuisine	
Pre-Conditions	A booking enquiry is made by an admin.	
Post-Conditions	A booking is created for a customer, with payment completed, flight type selected, pre-defined area defined, and exclusivity and insurance level decided upon. All has been confirmed by business manager.	
Flow of Events	**Actors**	**System**
	1. Admin receives request to create Booking 2. Booking details are selected	1.1. System creates new booking 2.1. Long or moon flight is added to booking 2.1.1. Cuisine is added to booking 2.2. Flight predefined area added to booking

		2.3. Insurance plan added to booking 2.4. Exclusivity is not added to booking
	3. Payment is finalised	3.1. Payment is calculated 3.2. Payment occurs
	4. Customer personal details are provided	4.1. Customer personal details added to log
	5. Business manager confirms booking	5.1. Booking is added to logs
Alternative flow	2.4. Exclusivity is added to booking 2.5. Number of exclusive passengers is added to booking 2.1. Short flight is added to booking 2.1.1 Cuisine information not taken	
Exception Conditions	3.2. Payment does not occur 3.2.1. Other payment option is selected by customer 3.2.2. Payment does not occur again 3.2.3. Booking is deleted 5. Business manager denies booking 5.1. Cancelled flight is archived to logs 5.2. All involved parties are notified of the booking cancellation	

Pay by Cryptocurrency (by Noah Cook)

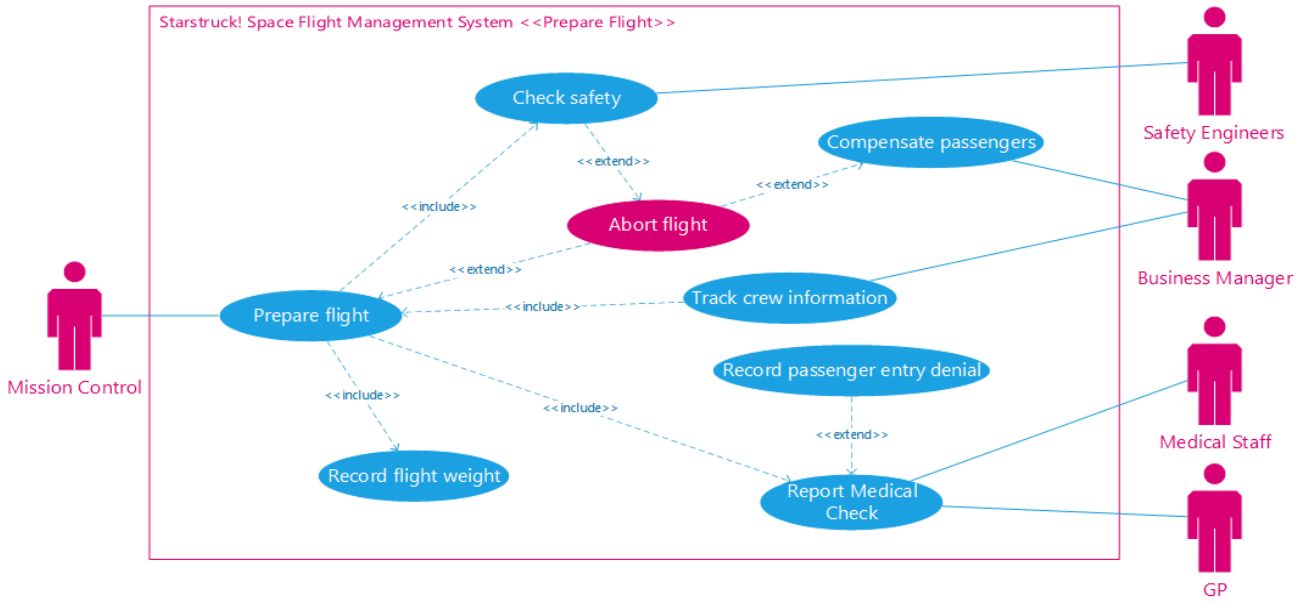


Use Case List:

1. **Pay booking insurance:** Customers will pay required amount for the insurance level they selected.
2. **Calculate discount:** Discount the customers purchase if they can be discounted.
3. **Pay by cryptocurrency:** Customer will pay the required fees through their choice of cryptocurrency.

Use Case Name	Pay Flight by Cryptocurrency	
Scenario	Paying the for the flight	
Triggering Event	Customer is ready to pay for their flight	
Brief Description	The third-party service provider pays for a flight through the use of crypto currency	
Actors	Business Manager, Third-party service provider	
Stakeholders	None	
Related Use Cases	None	
Preconditions	The Business Manager must have booked a flight Third-party service provider is ready to pay.	
Postconditions	The third-party service provider must have successfully paid for a flight using cryptocurrency	
Flow of Events	**Actors**	**System**
	3. The third-party service provider delivers payment into the system 6. Third party service provider receives confirmation that the transaction was successful	1. System checks to see if any discounts or additional fees are needed to be applied. 2. System request payment for the flight. 4. The system receives out the cryptocurrency from the third-party service provider. 5. The system processes and records the payment
Alternate Flow	4. Provider details are incorrect A. Ask provider to re-enter details.	
Exception Condition	4. Third-party service provider details are incorrect A. If customer enters incorrect details 5 times in a row, lock them out of the system. 3. Wallet balance is low A. Alert the provider that the wallet balance is low and ask for them to re-enter details when the balance suffices the cost 6. The third-party service provider receives unsuccessful transaction. A. Alert the customer that there was a problem with receiving the payment	

Abort Flight (by Gia Thu Tran)



Use Case List:

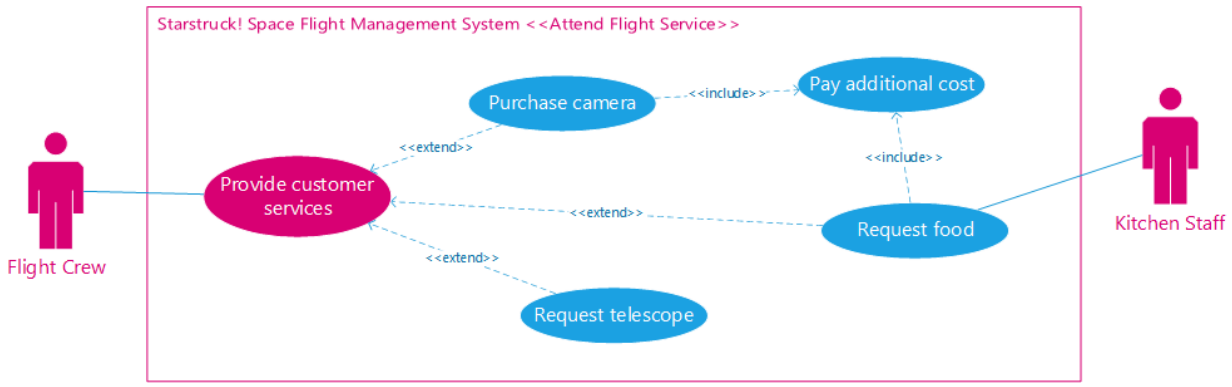
1. **Prepare flight**: Mission control conducts and records all required preparations for the flight to be launched.
2. **Report Medical Check**: During the preparation, before boarding, medical staff will conduct medical checks for crew members as well as customers, and report if there is any medical problem detected with the passengers.
3. **Record Passenger entry denial**: After the medical check, anyone who failed the assessments may get denied going to space on medical grounds. Every medical problem detected with customers will be communicated to their registered GP and details will be recorded by the business manager.
4. **Record Flight Weight:** Correct weights are important for the spacecraft, and it must be determined at any given time, therefore, during preparation, everything (including fuel) and everyone entering the spacecraft before launch must be weighed before entering. The mission control will record the weight precisely.
5. **Track crews' information**: Business manager will track all the information of crew members, including qualifications and expiry date, training completed, as well as medical records.
6. **Check safety**: During preparation and countdown, the safety engineer will constantly do safety checks and if a problem is detected, then the safety engineer
7. **Abort flight**: During preparation and countdown the flight may be aborted automatically or manually due to an issue detected by the safety engineer. Furthermore, during the period of 5 minutes before launch and 30 seconds after the second stage, it may be aborted using the launch escape system.
8. **Compensate Passengers**: After a flight is aborted, the business manager will conduct the compensation to passengers with booking insurance purchased.

Use Case Name	**Abort Flight**
Scenario	During preparation and countdown, the flight gets aborted after the safety engineer detected a problem and requested to abort the flight.
Triggering Event	Safety engineer requests to abort the flight automatically or manually.
Brief Description	During the preparation and countdown. The safety engineer detected a problem, the safety engineer then requested to see details of the problem from the system and check severity level, they will then elect and request to abort automatically or manually. The system will process the aborting and record the use of the abort system in audit log and relevant flight log.

Actors	Safety engineer	
Stakeholders	Flight Crew, Passengers	
Related Use Cases	Extends: - Prepare Flight - Safety Checks - Compensate Customer	
Pre-Conditions	- The spacecraft is in preparation and countdown period. - The safety engineer constantly does safety checks and has not detected any problem. - The mission control has not received any alert of emergency.	
Post-Conditions	- The launch gets aborted. - The capsule ejected from the rocket and splashed down into the ocean - The audit log and the relevant flight log recorded use of the abort system.	
Flow of Events	**Actors**	**System**
	1.1 The safety engineer detected a problem and requests to see the details and severity level of the problem. [At the same time] 1.2 The safety engineer requests to alert an emergency to mission control and crew's commander. 2. The safety engineer checks severity level. 3. The safety engineer elects and requests to abort automatically or manually.	1.1. The system receives the requests from safety engineers. 1.2.1 The system returns the details and severity level of the problem. [At the same time] 1.2.2 The system alerts an emergency to mission control and crew's commander. 3.1. The system receives a request to abort automatically or manually. 3.2. The system starts an abort log. 3.3. The system activates the launch escape system automatically or manually. 3.4.1. The system alerts activation of the launch escape system to mission control. [At the same time] 3.4.2. The system reports rocket status to the crew's commander and mission control. [At the same time] 3.4.3. The system calculates sufficient altitude to jettison. 3.5. The system ejects the capsule from the rocket. 3.6 The system closes abort log. 3.7. The system records abort log in audit log and relevant flight log. 3.8. The system updates information and saves final records.

Alternative flow	3.3.1. If the safety engineer requests to abort automatically. A. The system activates the launch escape system. B. Return to state 3.4. 3.3.2. If the safety engineer requests to abort manually. A. The system notifies the crew's commander to activate the launch escape system. B. The crew's commander receives notification. C. The crew's commander activates the launch escape system. D. Return to state 3.4
Exception Conditions	3.3.2.B. If the crew's commander failed to receive the notification. A. If failed less than 3 times, return to state 3.3.2.A. B. If failed more than 3 times, the system activates the launch escape system automatically. 3.3.2.C If the crew's commander failed to activate the launch escape system. A. The crew's commander requests abort automatically. B. Return to state 3.1.

Attend Flight Service (by Dean Brownlie)



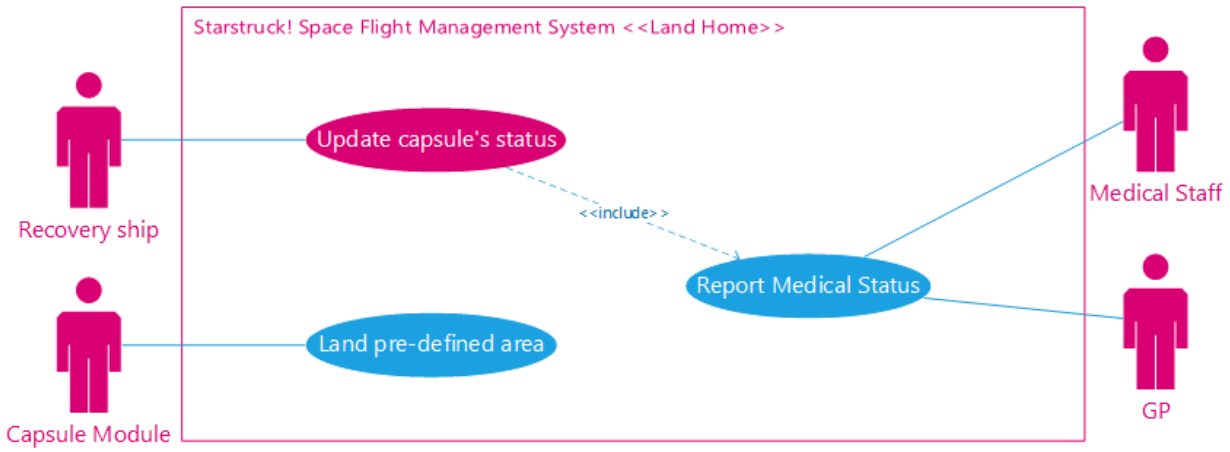
Use Case List:

1. **Provide Customer Services**: A flight attendant fulfils a customer's request for a telescope, camera, or in-flight meal, which is logged in the system. When the item is returned, it generates a bill for any additional costs to be paid upon landing.
2. **Request food**: A member of the flight crew fulfils a customer's request to be provided with their preselected food. If the food was deemed a luxury meal by the kitchen staff, an additional cost is incurred.
3. **Request telescope**: A member of the flight crew fulfils a customer's request for an on-board telescope for viewing during the flight. This will not incur an additional cost.
4. **Purchase Camera**: A member of the flight crew fulfils a customer's request to purchase a camera for taking pictures during the flight. This will incur an additional cost.
5. **Pay Additional Cost**: When a flight is concluded, any costs incurred by flight services are paid by the customer.

Use Case Name	**Provide Customer Services**	
Scenario	Customer purchases a camera, or requests a telescope or food mid-flight, then pays upon landing.	
Triggering Event	Flight attendant enters customer ID into system for request.	
Brief Description	A flight attendant fulfils a customer's request for telescope, camera, or in-flight meal, which is logged in the system. The ID number of a purchased camera or pre-packed meal will be recorded for payment upon landing.	
Actors	Flight Attendant	
Stakeholders	Kitchen staff, marketing, sales	
Related Use Cases	Extend: Request food, Request telescope, Purchase camera, Pay additional cost	
Pre-Conditions	• A customer is in the capsule, in space. • The journey is not in the 'launch' or 'landing' stages	
Post-Conditions	• The customer receives a telescope, camera, or meal during their flight. • Any additional cost is paid.	
Flow of Events	**Actors**	**System**

	1. Flight attendant enters customer ID into the system. 2. Flight attendant enters request type (telescope, camera, or pre-packed meal). 3. Flight attendant checks out item for customer. 4. Flight attendant returns item (telescope, camera or finished meal pack) and logs it into system. 5. Flight crew provides customer's payment details	1.1 System checks and displays customer information. 1.2 System creates new request log. 2.1 System checks for the availability of the requested item. 2.2 System displays ID number of requested item for attendant to provide to customer. 3.1 System saves checked-out item into log 4.1 System registers the returned item 4.2 System issues a bill to be paid by the customer (for camera or 'luxury meal'). 5.1 System processes and records completed payment System closes the request and saves the log.
Alternative Flow	4.2.a. The requested item was a telescope or a standard meal (not a camera or luxury meal) A. System registers no additional bill. B. System closes the request and saves the log.	
Exception Conditions	2.1 The requested item is not available at the time of request. A. System alerts flight attendant that requested item is not available and discards the request log	

Land Home (by Amanda Viray)



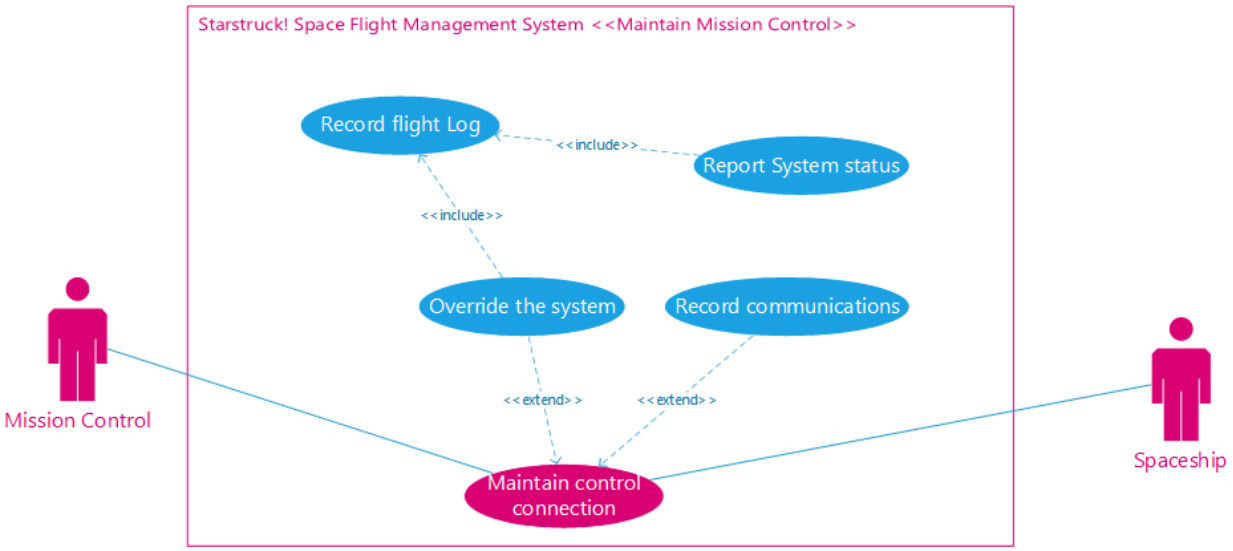
Use Case List:

1. **Land pre-defined area -** After the capsule is dislocated from the main rocket, it will land on a pre-defined area specified in the booking system.
2. **Report Medical Check -** The Medical staff conducts their medical check-up on the flight crew and customers once picked up then reports passengers' medical status to the system. The GP also has access to read the medical information provided by the on-site medical staff.
3. **Update capsule's status -** The Recovery ship reports the statues on the capsule and its passengers. It reports the receives the arrival timestamp from space, medical check, and drop-off to the designated airport specified in the booking.

Use Case Name	**Update capsule's status**	
Scenario	Recovery Ship waits for the capsule module to land on pre-defined area, picks up module, then drops passengers off to designated airport.	
Triggering Event	The System informs updates on the live location of the landing capsule module.	
Brief Description	The Recovery ship immediately picks up the capsule containing the flight crew and customers, conducts medical check, and drops passengers off to the designated airport.	
Actors	Recovery ship	
Stakeholders	Mission Control, GP, Passengers, Flight Crew	
Related Use Cases	Includes: Report Medical Status	
Pre-Conditions	The Capsule Module is about to land on designated area. The Recovery Ship is already located on pre-defined area.	
Post-Conditions	The Capsule Module has been picked up from pre-defined area. The Capsule Module has been dropped off to the designated airport. The Medial Staff has conducted medical check on passengers. The system has recorded the arrival date, medical information, and airport arrival.	
Flow of Events	**Actors**	**System**
	1.1. Recovery Ship receives system updates on the landing location of the capsule. 1. Recovery Ship flies/sails to pre-defined area. 2. The Recovery Ship scans pre-defined area.	1. The system updates the live location of the module.

	3. Recovery Ship picks up the capsule module. 4. Medical Staff conducts medical check on passengers. 5. Fly/Sail to designated airport decided from the booking. 6. Drop-off passengers.	4.1. The system reports of crew and customers has arrived with timestamp. 5.1 The system reports passenger' medical status 7.1 The system reports passengers' airport arrival
Alternative flow	1.1 If the Recovery Ship does not see the capsule and is beyond the estimated arrival time which is more than, the Recovery Ship must: a. Contact the Mission Control headquarters for further action.	
Exception Conditions	4.2 If the Recovery ship fails to pick up the capsule due to unforeseeable circumstances, the Mission Control must: a. Dispatch an emergency recovery ship, b. Inform the flight crew and customer for possible delay of pick-up, and c. Dispatch emergency team to search for the original recovery ship. 2.1 If the system fails to give live location of the module, the Recovery Ship must: a. Contact the Mission Control for estimated time landing/further actions, or b. Continually scan for landing module. 4.1 If the system was not able to establish communications to update flight crew and customer are picked up/medical checked/drop-off, the Recovery ship must: a. Contact the Mission Control through other communication means to inform their passengers' pick-up, medical status, estimated arrival to the designated airport.	

Maintain Mission Control (by Oliver Robin)



Use Case List:

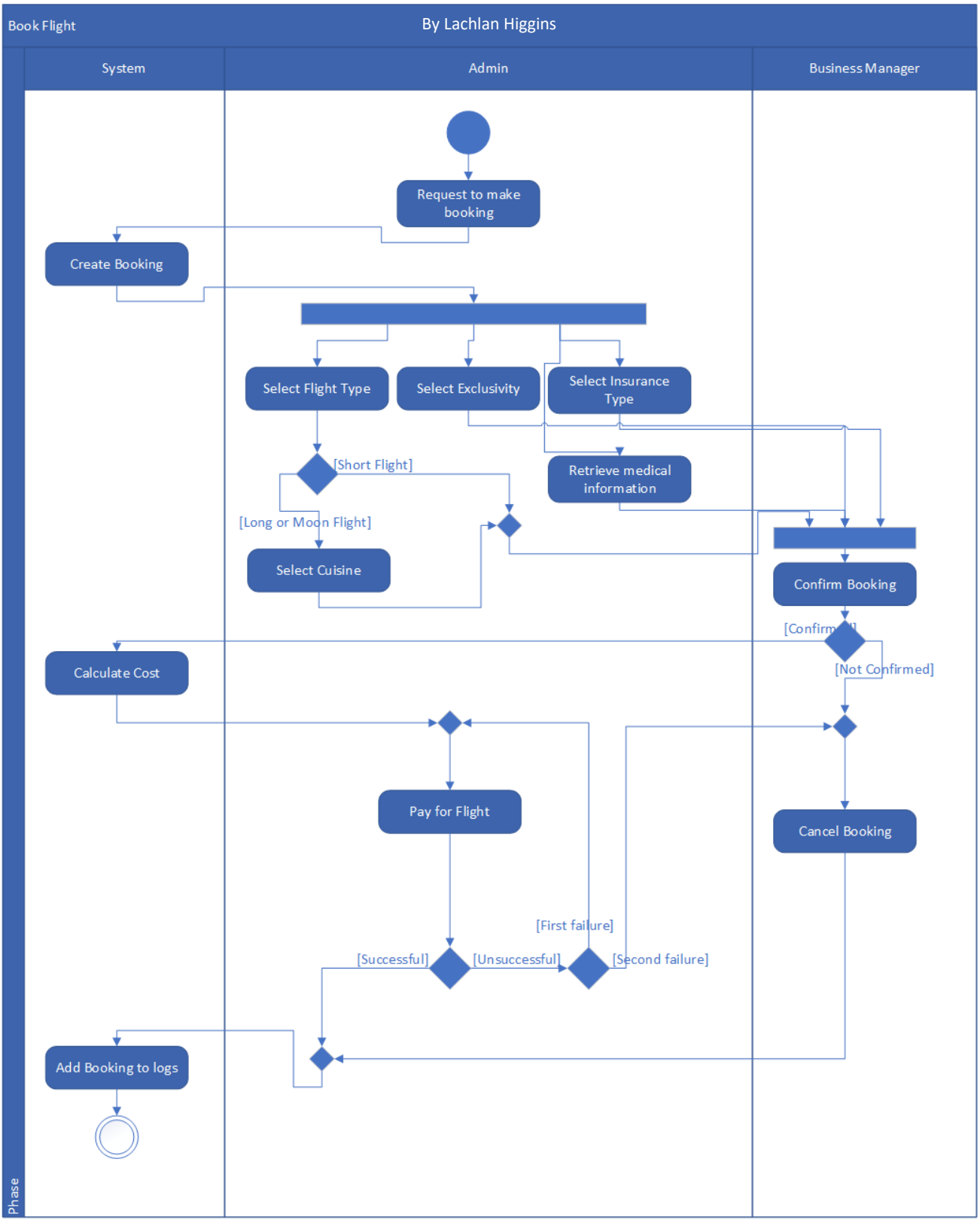
1. **Override the System:** Instruments and computers are not always right. Enable personnel to override any information or functions in the system.
2. **Record Flight Log:** Record some event into the audit log alongside the system status of the ship.
3. **Get System Status:** Get attributes of the current state of the spaceship. E.g., Weight, Fuel remaining.
4. **Record Communication:** Save the communication data on Earth and space alongside the sender identifier and timestamp.

Use Case Name	Maintain Mission Control	
Scenario	Maintaining communication and logistical connection from Earth (StarStuck! Mission Control) and the spaceship	
Triggering Event	Preparation for launch	
Brief Description	The communications channel and audit of events between Mission control and the space shuttle	
Actors	Mission Control, Spaceship	
Stakeholders	Passengers, Business Manager	
Related Use Cases	None Extend: Override System, Record Communication	
Pre-Conditions	Spaceship preparing for launch	
Post-Conditions	Successful re-entry and landing	
Flow of Events	**Actors**	**System**
	1. Mission control assigns a communication channel between Mission Control and the space shuttle 2. Spaceship attempts to connect to assigned channel 3. Spaceship communicates to Mission control via sending video to other end of the channel	1.1 Record opening of channel alongside its specifications and timestamp 2.1 Record connection attempt in audit log 2.2 If connection successful record successful attempt in audit 3.1. Records / saves video message alongside a timestamp

	4. Mission Control communicates to Spaceship via sending video to other end of the channel (done at the same time as 3) 5. Mission control closes the channel between them and the space shuttle	4.1 Record / save video message alongside timestamp 5.1 Record closure of channel alongside its specifications and timestamp
Alternative flow	2.1.1 If connection unsuccessful record unsuccessful attempt and try again 3.0.1 Spaceship communicates to Mission control via sending audio to other end of the channel 4.0.1 Mission Control communicates to Spaceship via sending audio to other end of the channel 3.0.4 Mission Control requests system status from ship 3.1.1 System Status is recorded in audit with timestamp 3.1.2 Records / saves an audio message alongside a timestamp 3.1.3 Records / saves a text message alongside a timestamp 3.1.4 Saves the system status from the shuttle into the flight's audit 4 & 5 Message is marked as sent on one end but is not received on the other 1. Send a hash-compression of the message to the other end to ensure no delivery 2. Recover the message from the flight log and re-send it 3. Repeat until successful	
Exception Conditions	2.1.2 If there have been more than 30 failed attempts to connect then close channel 4 & 5 If there have been more than 30 failed attempts to send message then send emergency distress signal	

ACTIVITY DIAGRAMS

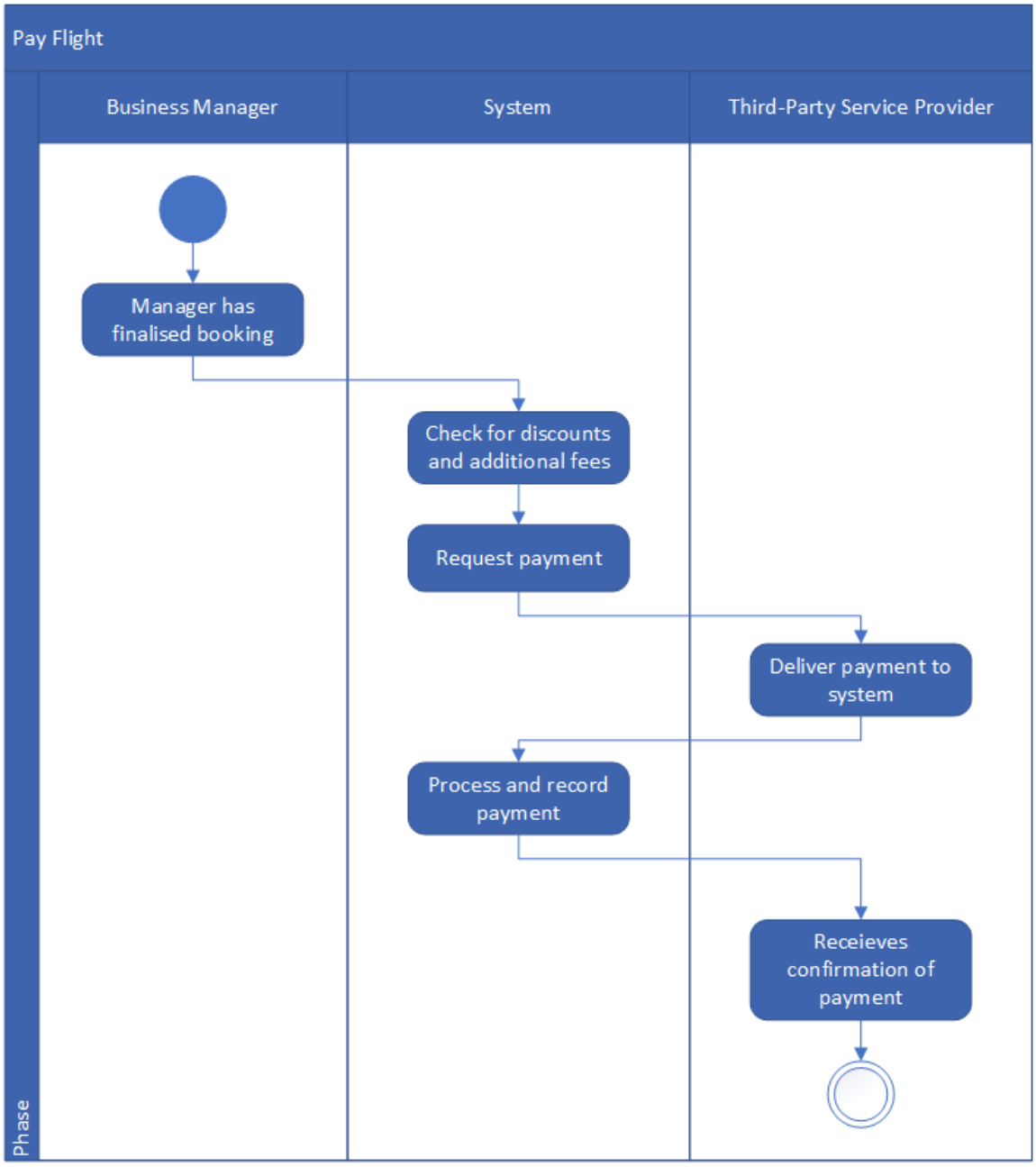
The activity diagram is a flowchart to show the sequence of events according to the use cases mentioned in the previous section. The diagrams below are the following:



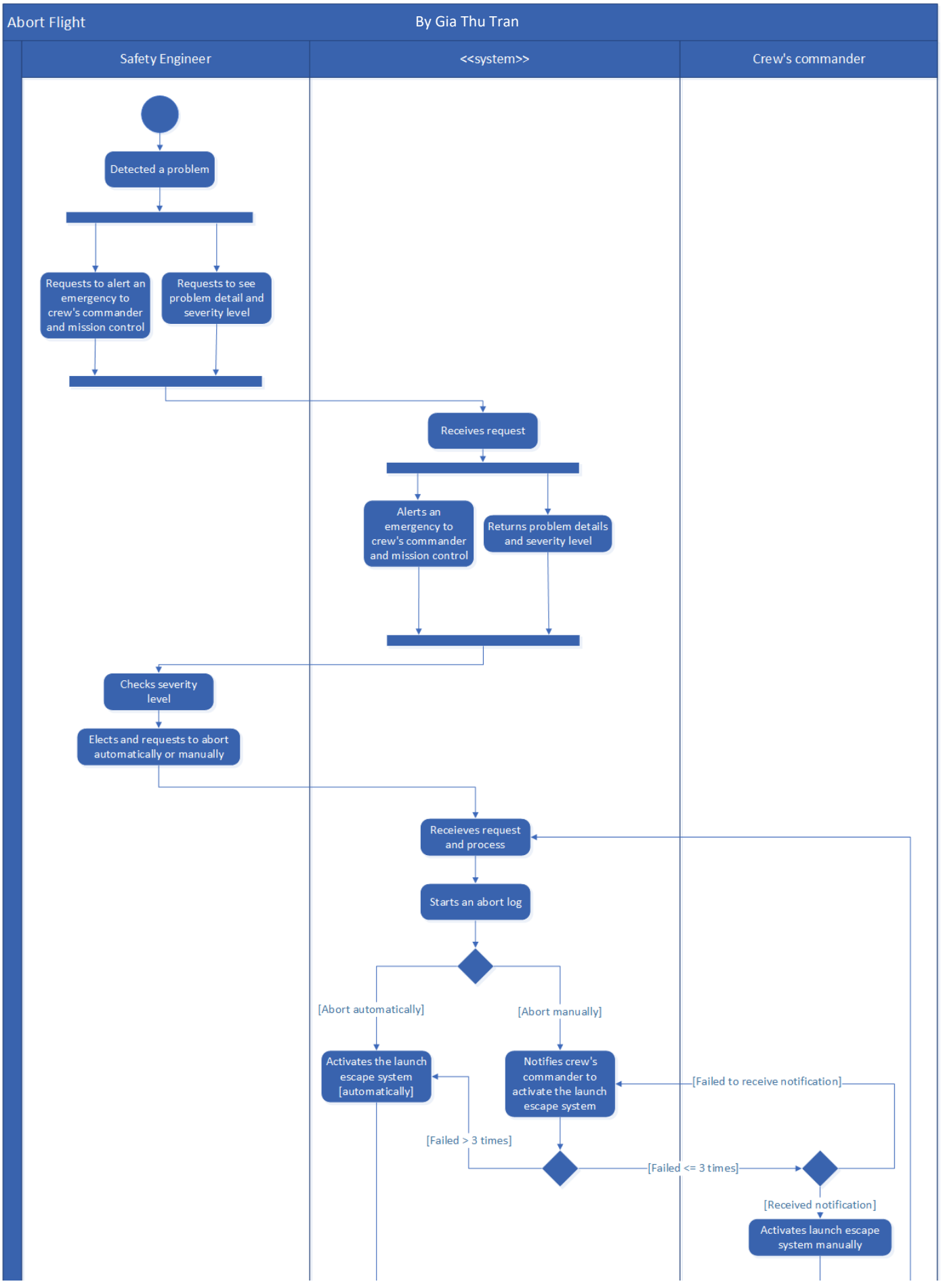
The Book Flight activity diagram begins when an admin starts to process a request to Book a flight. The system initially creates an empty booking, the details of which are given to the system by the admin. Flight Type, Exclusivity,

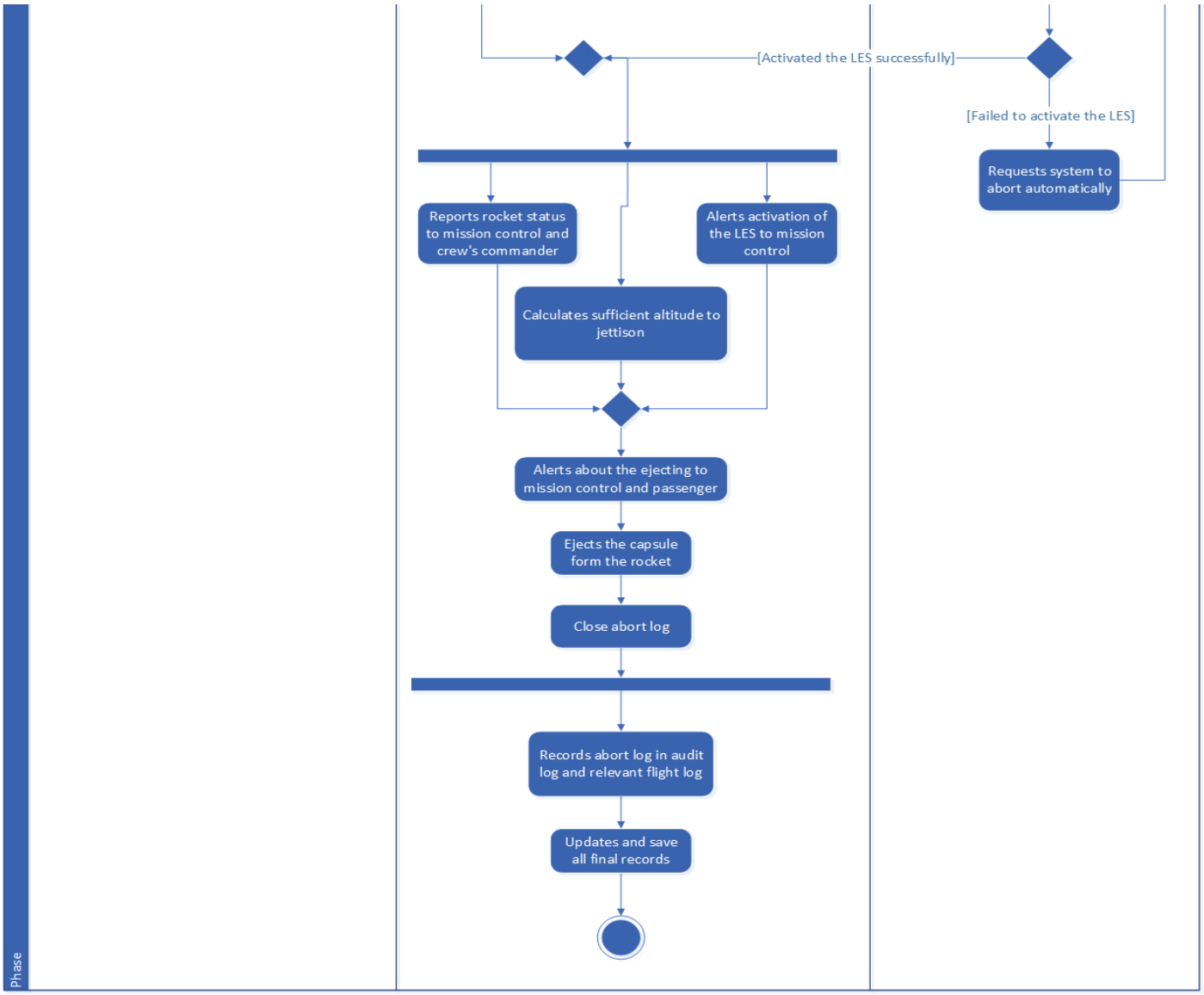
Insurance type and medical information are all collected simultaneously. If the flight type is not a short flight, cuisine for the duration of the flight is required to be chosen. Once all booking data is collected, a business manager analyses it, either confirming or denying the booking. If confirmed, the cost of the flight is calculated, and the payment process begins. One failed payment is allowed, but a second will cause the Cancel Booking process to begin. The cancel booking process can also be initiated if the business manager denies it. Regardless if the booking is accepted or denied, all information is logged to be accessed later if necessary.

By Noah Cook



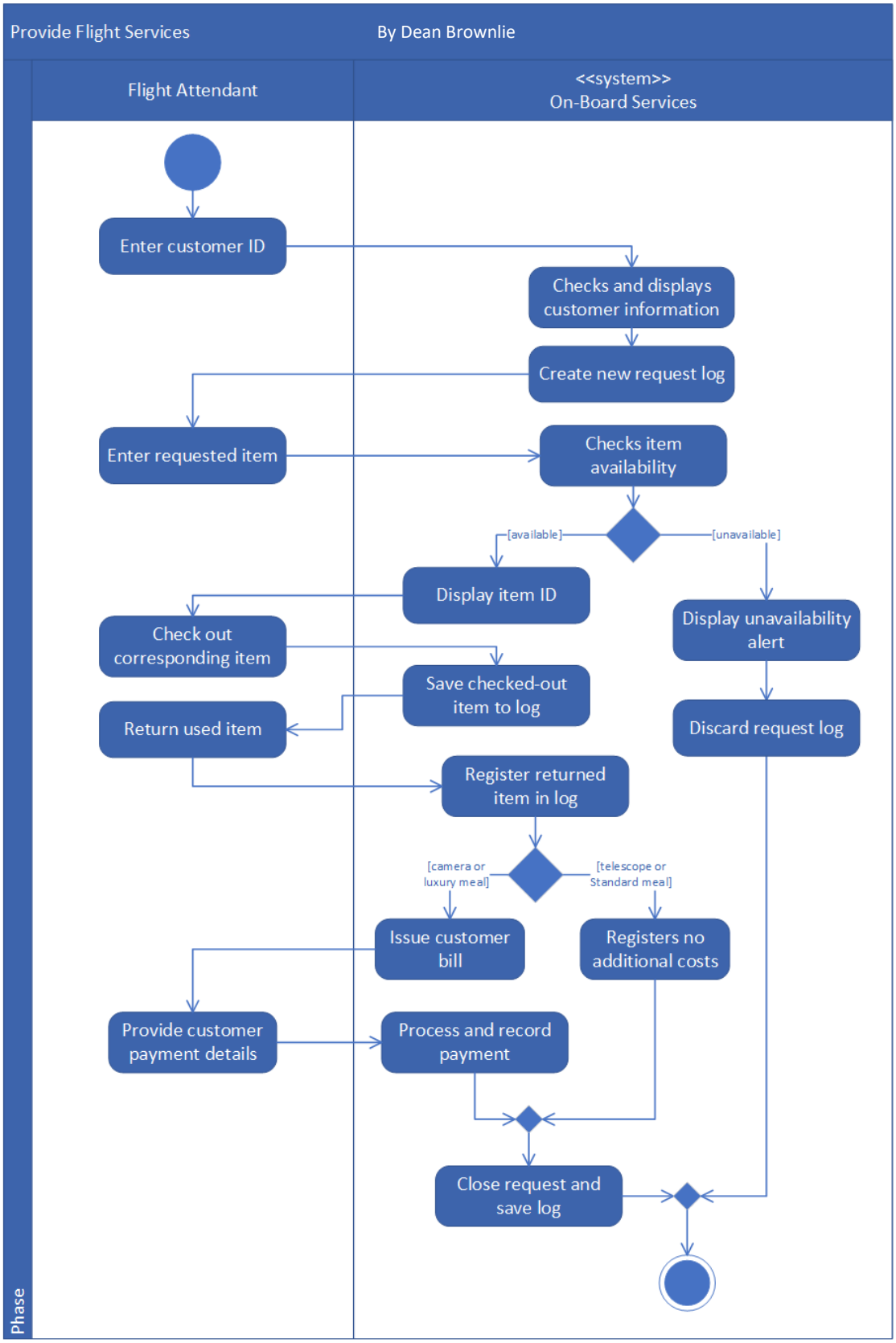
The pay flight activity diagram begins when the business manager has finalised the booking request. Once the manager has finished with his task, the booking is sent off to the system which checks if any additional fees or discounts are required, such as giving a discount for booking in advance. Afterwards, the system requests for the customers payment. The customer provides their details and pays through the third-party provider who then delivers the payment to the system. After this, the system processes the payment and records the information. The third-party then receives confirmation that the payment went through successfully.


Abort Flight
By Gia Thu Tran
Safety Engineer
<<system>>
Crew's commander
Detected a problem
Requests to alert an emergency to crew's commander and mission control
Requests to see problem detail and severity level
Receives request
Alerts an emergency to crew's commander and mission control
Returns problem details and severity level
Checks severity level
Elects and requests to abort automatically or manually
Receieves request and process
Starts an abort log
[Abort automatically]
[Abort manually]
Activates the launch escape system [automatically]
Notifies crew's commander to activate the launch escape system
[Failed to receive notification]
[Failed > 3 times]
[Failed <= 3 times]
[Received notification]
Activates launch escape system manually



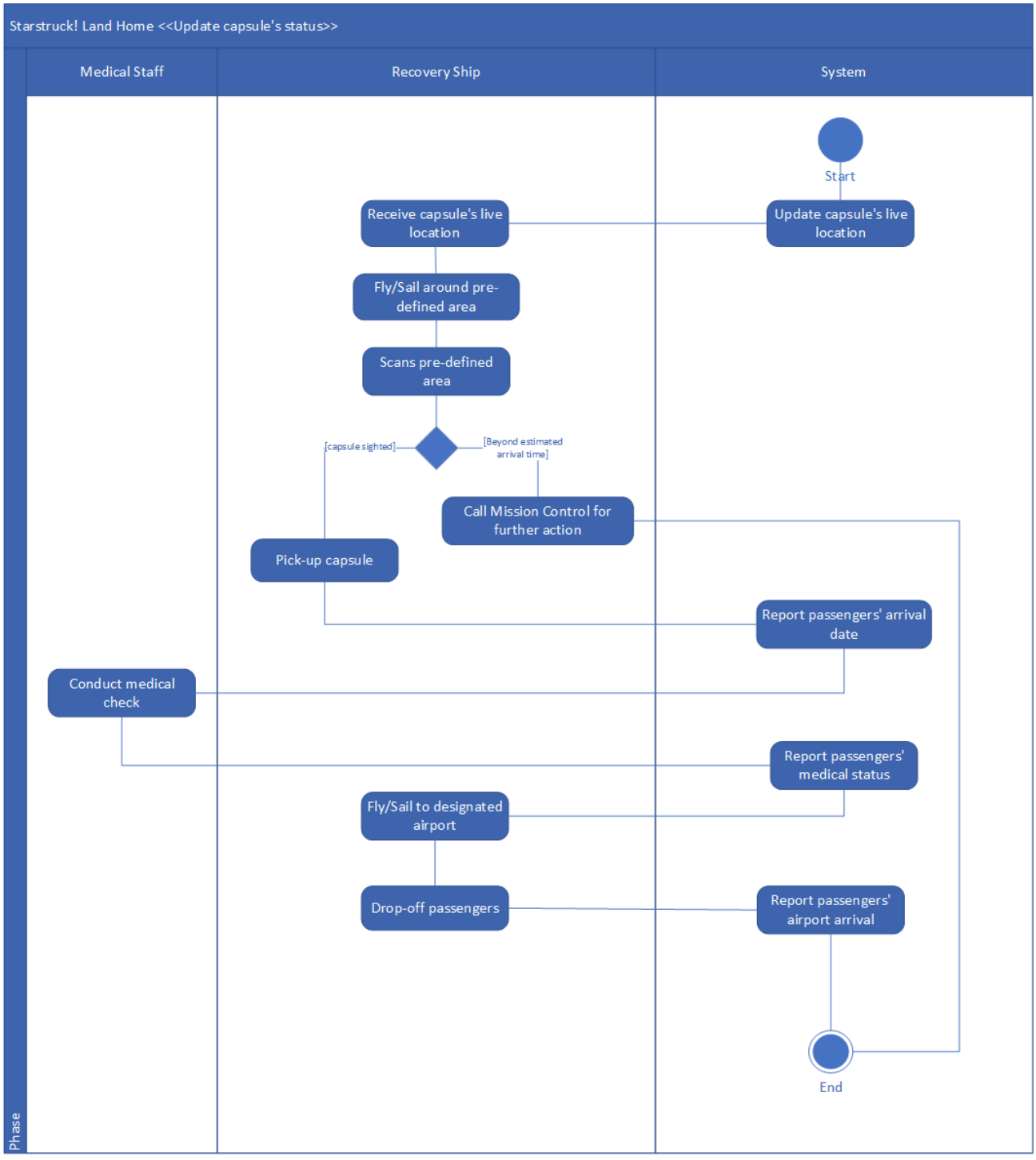
The *Abort Flight* activity diagram starts when the safety engineer detected a problem within the system and requests the system to alert an emergency to mission control, crew's commander, as well as requests to see details and severity level of the problem. Once the system received the requests, it will alert an emergency and return details, severity level to the safety engineer. The safety engineer will then check the severity level and requests to abort the flight automatically or manually depending on the severity level of the problem. Received the request from the safety engineer, the system will start an abort log and process if the safety engineer requested to abort the flight automatically or manually. After the processing, if the request was to abort automatically, the system will activate the launch escape system automatically. On the other hand, if the request was to abort manually, then the system will notify the crew's commander to activate the launch escape system. However, as an exception, the crew's commander might not receive the notification from the system under any circumstance, the system will try to send the notification 3 times and if the crew's commander still does not receive the notification, then the system will have to abort automatically, which means it will activate the launch escape system by itself. Furthermore, in case the crew's commander received the notification, but the crew's commander had problem with activating the launch escape system under any circumstance, the crew's commander will then request the system to abort automatically. After the launch escape system was activated either by the system or the crew's commander, the system will alert activation of the launch escape system and report the rocket status to the mission control and crew's commander. At the same time, the system calculates the sufficient altitude level to jettison. After that, the system will alert about

the ejecting of the capsule to the passengers on board and mission control. Then, the system ejects the capsule from the rocket. Once that done, the system will close the abort log, it will save the abort log into the audit log and relevant flight log, the system will then update and save all final records.



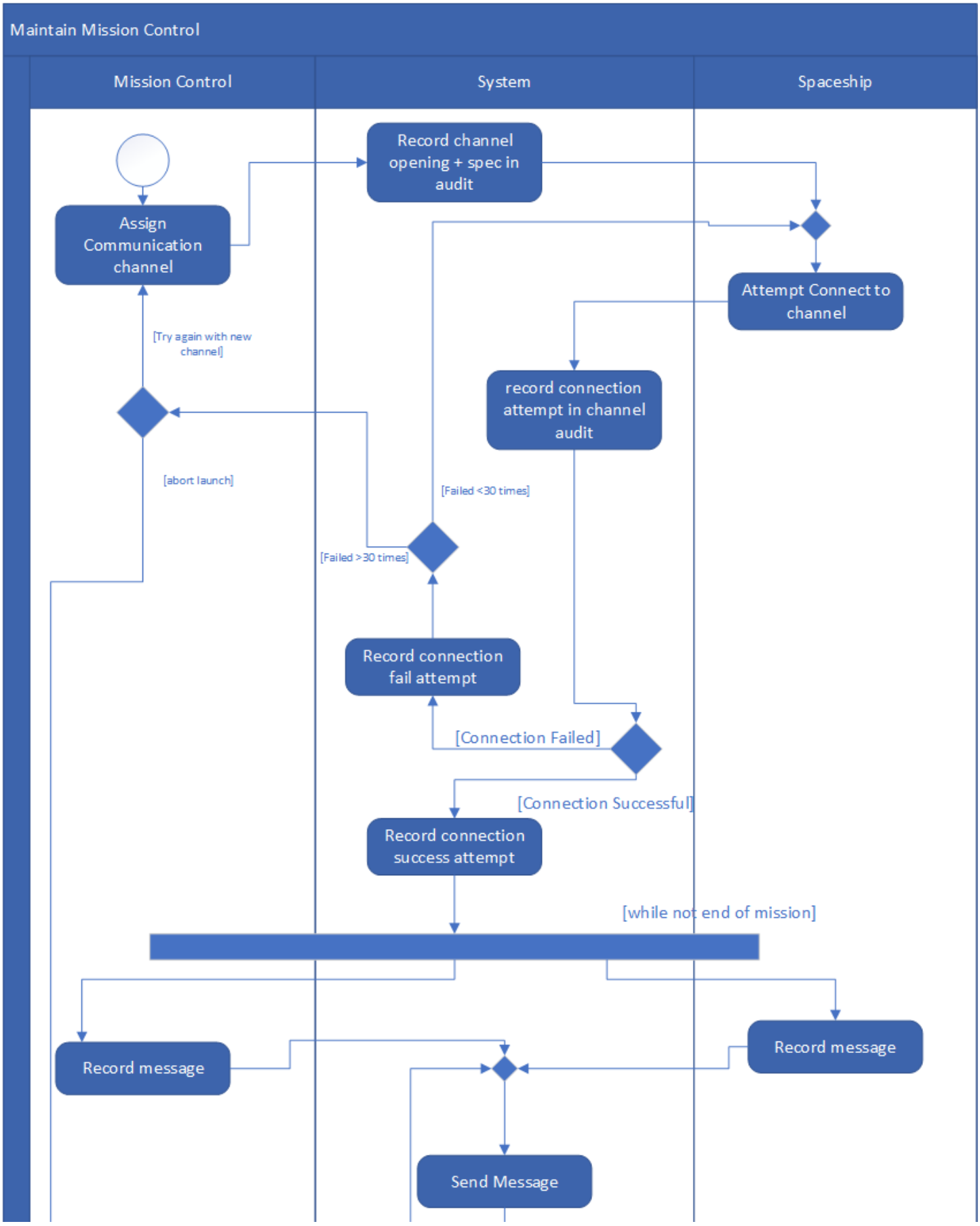
The *Provide Flight Services* activity diagram begins with the flight attendant entering the customer ID of the customer making the request for a flight service, causing the system to generate a request log. Once the request type is specified and the requested item is checked to be available, it will notify the flight attendant which item is to be taken, which is recorded in the log for traceability. However, if the item is unavailable (out of stock, for example), the log will be discarded and the attendant notified. The flight attendant then provides the customer with the item, and the log remains open until it is returned and logged into the system. Once this occurs, the system will issue a bill as necessary, depending on the item requested. If a bill is generated, it will be paid for by the customer upon landing. The completed purchase is stored in the log.

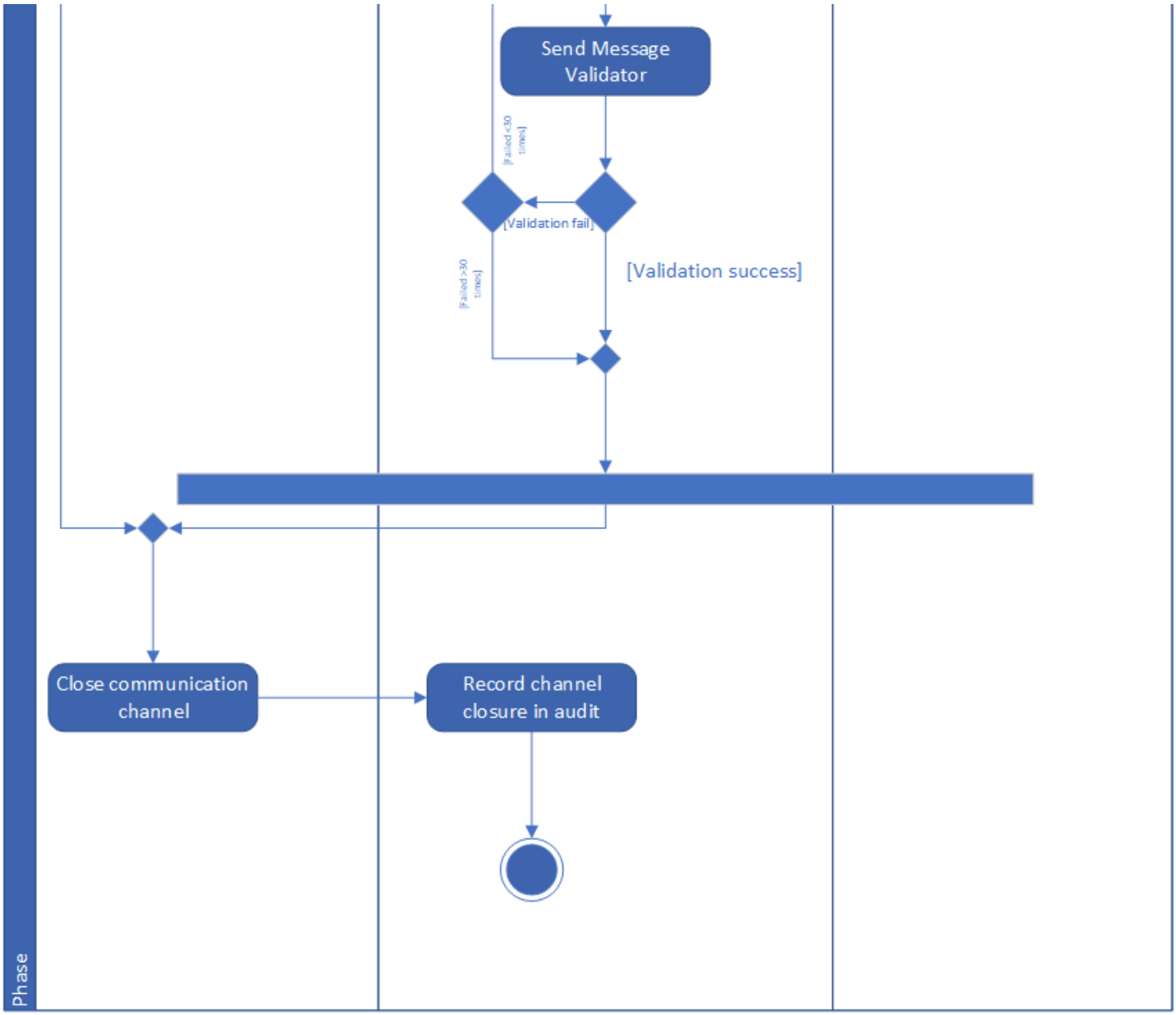
By Amanda Patricia Viray



The activity diagram of *Update capsule's status* shows how it starts by the system notifying and updating the Recovery Ship the live location of the re-entry capsule module so that the Recovery Ship can pick-up the module and drop the passengers off to the designated airport that is indicated in the Booking system. In between the pick-up and drop-off, the medical staff inside the Recovery Ship shall conduct their medical check and report it into the system the passengers' medical status. Furthermore, if the capsule has not landed in the predefined area, the Recovery Ship must contact the Mission Control HQ for further actions and ends the process of *Update capsule's status*. Therefore, the system is taking record of what the Recovery Ship is reporting regarding the capsule's arrival, drop-off, medical check, and updating where the capsule is.

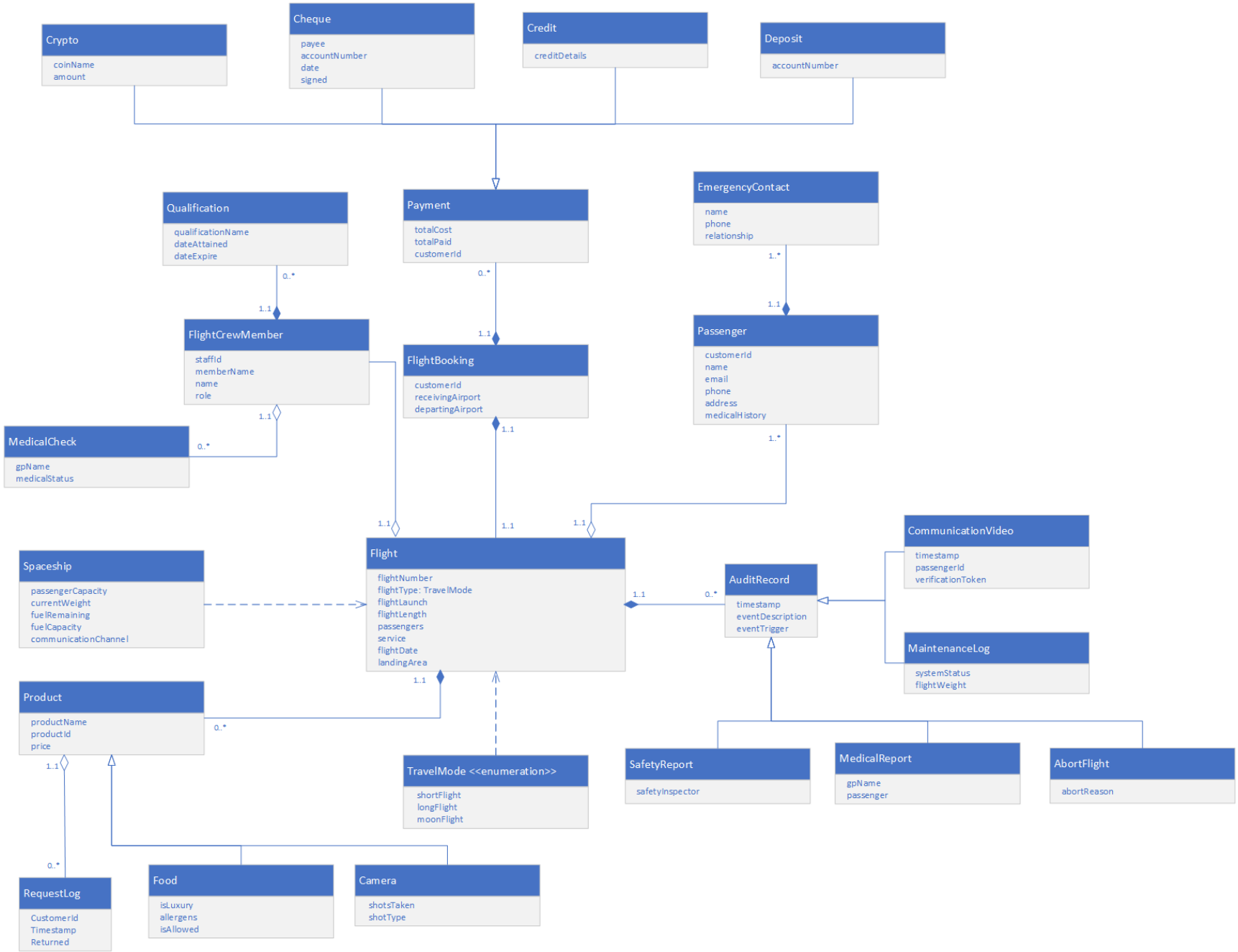
By Oliver Robin





The Maintain Mission Control activity diagram starts out with Mission Control creating and assigning a communication channel between them and the spaceship. When the channel is opened, the opening event alongside the details of the channel. Attributes of the channel including elements such as its target frequency. From there the ship must be able to create a stable connection to the channel before the take off. If a connection does not succeed, disconnect, and try again. If this fails more than 30 times (which would indicate something larger is at play) close the channel and abort launch until further notice. regardless the attempt, record each attempt into the audit log, the record including an identifier for the channel, spaceship, and the result of the connection. Upon a successful connection, communication is enabled both ways. Either Mission control will send a message to the ship or the ship sends a message to Mission Control, possibly to be forwarded to friends / family if requested by a passenger. The message either being a video or audio message. Once a message is made, it is sent to the other end of the channel alongside a verification token which is the SHA256 hash encode of the message. If the other side of the channel is able to match this hash that would mean the message was received correctly. If it cannot be matched, the message is resent with another verification token. If the message fails to send 30 times the message stops trying to be sent and passengers are notified of a possibly compromised communication status. Upon successful send and receive, the system waits for the next message or the mission to be classed and "ended", however Starstuck defines mission end. When the mission is classed and done, the communication channel is closed and put into idle for its next use. This closure is also logged like the opening log.

DOMAIN CLASS DIAGRAM



TEAM MANAGEMENT

Meeting Notes

Meeting 1

Place: Library L338 / Online March 8, 2022 / 1:00 PM – 2:00PM ---> 7 PM - 8PM

In attendance

- Amanda Patricia Viray
- Dean Brownlie
- Noah Cook
- Lachlan Higgins
- Oliver Robin
- Gia Thu Tran

Apologies - None

Agenda

- Remind the team:
  - Discussion and agreement made of the grade expectations of all group members
  - To finalise the *Pre-Action Plan*
  - Assign roles of members and get to know their strengths, how they work, their values, and their plans of contribution and results
  - Read Assessment Specifications and Team Management Procedures
  - Assignment 1 (20%) is due in 19 days / 2 weeks and 5 days.
- Draft a MS Teams Activity Report – Manage Teams > Analytics
- Task 2 (From Lab 1 Sheet) Prior Research
- Date, time, and place for next meeting – Every Tuesday at 11am - **hybrid**

Action sheet

Task	Responsible	Due	Notes
Project Management – MS Teams, MS Project Gantt Chart, and Meeting Minutes.	Amanda	8/03/22	In charge of managing the team, documenting the meetings, and organising the project to meet the deadline.
Introduction	Lachlan	11/03/22	Draft out the introduction of the report
Business Rules	Dean, Gia Thu, Noah, Oliver	13/03/22	Draft out the business rules from the Starstruck! specification.
Gather use case findings	The Killer Lemur	8/03/22	Find use cases from the specification and verify with academic tutor to proceed use case report and diagram.

Meeting 2

Place: Library L321a Date/Time: March 15, 2022 / 11 AM – 12:50 PM

In attendance

- Amanda Patricia Viray
- Dean Brownlie - Online
- Noah Cook
- Lachlan Higgins
- Oliver Robin
- Gia Thu Tran

Apologies - None

Agenda

- Daily Standup | Progress update on each members tasks for 15 mins (2-3 mins per member) - priority on Introduction, Business Rules, Use Case Diagrams, Activity Diagrams to be complete by Friday of March 18!
    - What have you done since the last meeting/standup?
    - What will you do before the next meeting/standup?
    - Is there anything on your way that stops you from performing work?
- Any questions regarding previous lectures/labs/assessment?
- Look through tasks together to give feedbacks/suggestions for improvement on the following order: Introduction, Business Rules, Use Case Diagrams, Activity Diagrams.
- Date, time, and place for next meeting – Same time and place
- Matters for consideration at next meeting
    - Activity Diagrams, use case descriptions, and Business rules must be finalised
    - Domain Class Diagram progressed
    - Conclusion will start after everyone is done
    - Gantt chart must be updated
    - Frequently update reference list - APA

Action sheet

Task	Responsible	Due	Notes
Use Case Diagram Descriptions Delegation			
Book Flight	Lachlan	18/03/22	
Pay Flight	Noah	18/03/22	
Attend Flight Service	Dean	18/03/22	
Maintain Mission Control	Oliver	18/03/22	
Prepare Flight	Gia Thu	18/03/22	
Land Pre-defined Area	Amanda	18/03/22	

Team Management and Deadlines			
Submit to Keiran on today's draft use case diagrams	Amanda	Today	Done after meeting
Finalise the draft use case diagrams	Everyone	Today	Done during meeting
Business Rules review	Everyone	Today	Done during meeting
Review Introduction	Everyone	Today	Done during meeting
Update Gantt Chart and Meeting Notes	Amanda	Today	Done during meeting

Meeting 3

Place: Library L321a Date/Time: Date/Time: March 22, 2022 / 11 AM – 1 PM

In attendance

- Amanda Patricia Viray
- Dean Brownlie - Online
- Noah Cook
- Lachlan Higgins
- Gia Thu Tran

Apologies

- Oliver Robin (Late)

Agenda

Matters arising from previous meeting

- Use Case Descriptions
- Activity Diagrams

Action sheet

Task	Responsible	Due	Notes
Ask Kieran about ethical business rule breaking Australia consumer law.	Whole team	Friday 26th	Business must provide refund if it is their fault
Create Domain Class Diagrams	Everybody, individually	Friday 26th	This will be completed in next team meeting. Start thinking and make a small draft.

Meeting 4

Place: Online Date/Time: 29/03/2022 - 11am-1pm

In attendance

- Amanda Patricia Viray
- Noah Cook
- Lachlan Higgins
- Gia Thu Tran
- Dean Brownlie
- Oliver Robin

Apologies

- None

Agenda

- Go over 'Use Case Descriptions'
- Create Domain class diagram
- Next Meeting: 1st April

Action sheet

Task	Responsible	Due	Notes
Fix up introduction	Lachlan	1st April	Make introduction more specific.
Post activity diagrams	Everyone	1st April	Put completed activity diagrams onto MS Teams
Finalise Use Case Descriptions	Everyone	1st April	Make Use Case Description ready to be put into report.

MS Teams Analysis Report

Summary

6	10	1
Users	Apps	Meetings

Engagement

13	48	8	40
Posts	Replies	Mentions	Reactions

Active users

6 Active users

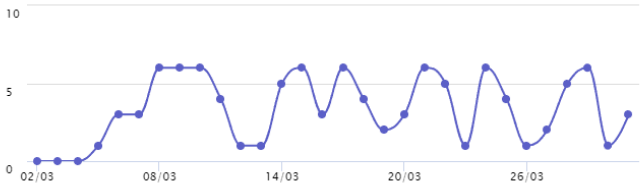
0 Inactive users

Role

6 Owners + Members

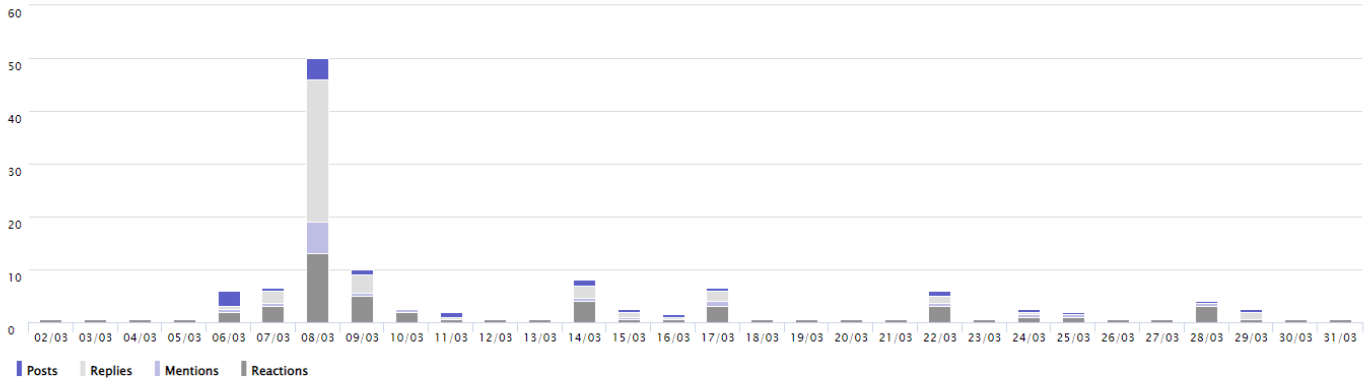
0 Guests

Active users



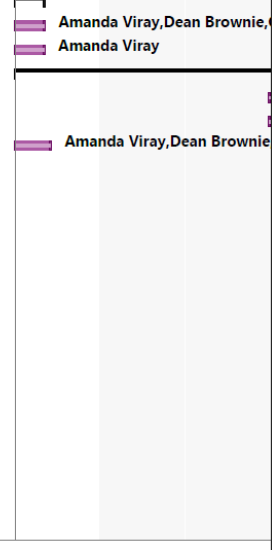
Meetings

Engagement

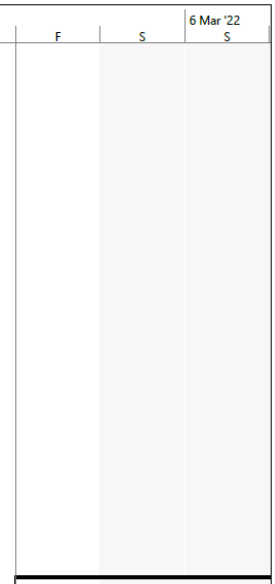


MS Project Gantt Chart

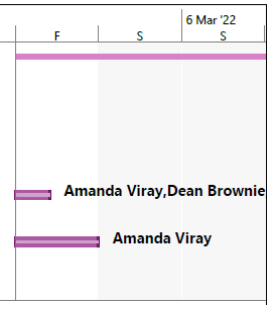
ID	Task Mode	Task Name	Duration	Start	Finish	Predece
1		**Project Initiation**	**0.04 days**	**Fri 4/03/22**	**Fri 4/03/22**	
2		The Killer Lemur Group Formation	20 mins	Fri 4/03/22	Fri 4/03/22	
3		MS Teams Creation	10 mins	Fri 4/03/22	Fri 4/03/22	
4		**Project Planning**	**2.13 days**	**Fri 4/03/22**	**Tue 8/03/22**	
5		Create and Share Report Draft	5 mins	Mon 7/03/22	Mon 7/03/22	
6		Set-up MS Teams Organisation	1 hr	Mon 7/03/22	Mon 7/03/22	
7		Group Pre-Plan	2 hrs	Fri 4/03/22	Fri 4/03/22	
8		Draft Report Findings	1 hr	Tue 8/03/22	Tue 8/03/22	
9		**Report**	**19 days**	**Wed 9/03/22**	**Sat 2/04/22**	4
10		Introduction	3 days	Wed 9/03/22	Fri 11/03/22	
11		Introduction QA	10 mins	Tue 15/03/22	Tue 15/03/22	10
12		**Business Rules**	**10 days**	**Wed 9/03/22**	**Tue 22/03/2**	
13		Scenario Rules	3 hrs	Fri 11/03/22	Fri 11/03/22	
14		Work, Health, and Safety Rules	3 hrs	Fri 11/03/22	Fri 11/03/22	
15		Other Legislation and Standards	3 hrs	Fri 11/03/22	Fri 11/03/22	
16		Ethical, Security, and Privacy Rules	3 hrs	Fri 11/03/22	Fri 11/03/22	
17		Business Rules QA	30 mins	Tue 15/03/22	Tue 15/03/22	13,14,
18		QA	1 hr	Tue 22/03/22	Tue 22/03/22	17
19		**Use Case Diagrams**	**6.25 days**	**Mon 14/03/2**	**Tue 22/03/2**	
20		Draft use case diagrams	2 hrs	Mon 14/03/2	Mon 14/03/2	
21		Finalise use case diagrams	1 hr	Tue 15/03/22	Tue 15/03/22	20
22		Use Case Approval	5 mins	Fri 18/03/22	Fri 18/03/22	
23		Book Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	22

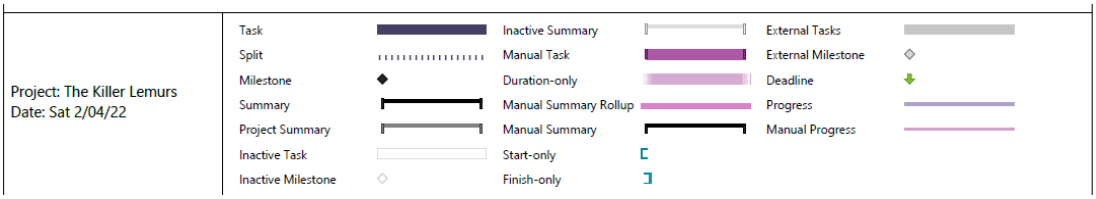


ID	Task Mode	Task Name	Duration	Start	Finish	Predece
24		Pay Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	22
25		Abort Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	22
26		Attend Flight Service	2 hrs	Tue 22/03/22	Tue 22/03/22	22
27		Land Home	2 hrs	Thu 17/03/22	Thu 17/03/22	22
28		Maintain Mission Control	2 hrs	Thu 17/03/22	Thu 17/03/22	22
29		QA (UML Use Case)	1 hr	Tue 22/03/22	Tue 22/03/22	
30		**Activity Diagrams**	**8 days**	**Wed 16/03/2**	**Fri 25/03/22**	**22**
31		Book Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	23
32		Pay Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	24
33		Abort Flight	2 hrs	Tue 22/03/22	Tue 22/03/22	25
34		Attend Flight Service	2 hrs	Tue 22/03/22	Tue 22/03/22	26
35		Land Home	2 hrs	Fri 18/03/22	Fri 18/03/22	27
36		Maintain Mission Control	2 hrs	Tue 22/03/22	Tue 22/03/22	28
37		QA (UML Activity)	1 hr	Fri 25/03/22	Fri 25/03/22	
38		**Domain Class Diagrams**	**11 days**	**Mon 21/03/2**	**Sat 2/04/22**	
39		Domain Class Diagram Draft	2 hrs	Mon 21/03/2	Mon 21/03/2	
40		Finalise Domain Class Diagram	8 hrs	Fri 1/04/22	Fri 1/04/22	
41		QA Domain Class Diagram	30 mins	Sat 2/04/22	Sat 2/04/22	
42		Conclusion	1 day	Fri 25/03/22	Fri 25/03/22	
43		References Compilation	1 day	Sun 27/03/22	Sun 27/03/22	
44		Refinement	7 days	Fri 25/03/22	Sat 2/04/22	
45		Proofreading	1 day	Fri 1/04/22	Fri 1/04/22	
46		**Team Management**	**21 days**	**Fri 4/03/22**	**Sat 2/04/22**	

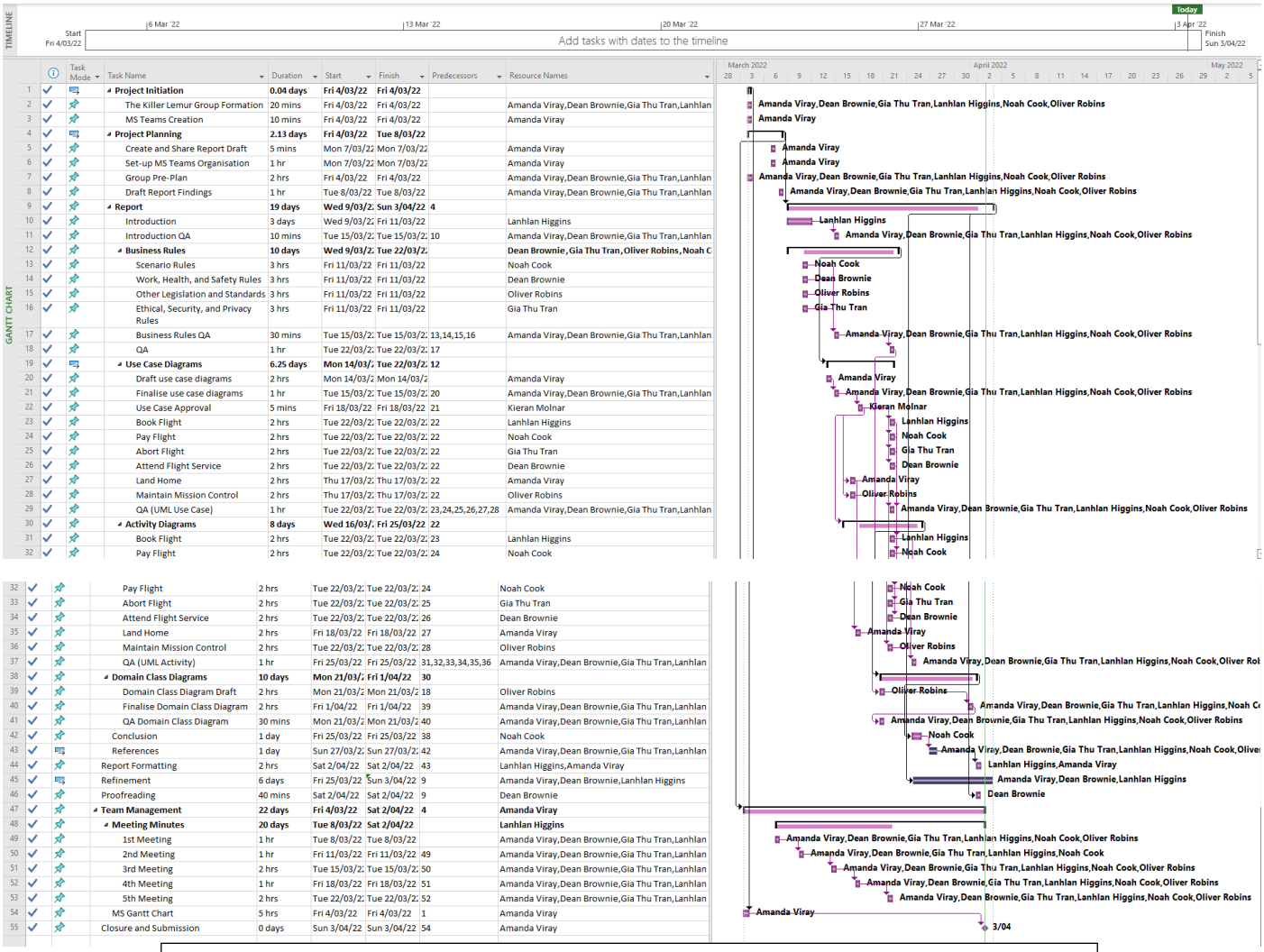


ID	Task Mode	Task Name	Duration	Start	Finish	Predece
47		**Meeting Minutes**	**20 days**	**Tue 8/03/22**	**Sat 2/04/22**	
48		1st Meeting	1 hr	Tue 8/03/22	Tue 8/03/22	
49		2nd Meeting	1 hr	Fri 11/03/22	Fri 11/03/22	
50		3rd Meeting	2 hrs	Tue 15/03/22	Tue 15/03/22	
51		4th Meeting	1 hr	Fri 18/03/22	Fri 18/03/22	
52		5th Meeting	2 hrs	Tue 22/03/22	Tue 22/03/22	
53		6th Meeting	2 hrs	Fri 4/03/22	Fri 4/03/22	
54		7th Meeting	4 hrs	Sat 2/04/22	Sat 2/04/22	
55		MS Gantt Chart	8 hrs	Fri 4/03/22	Fri 4/03/22	
56		Report Formatting	2 hrs	Sat 2/04/22	Sat 2/04/22	
57		Closure and Submission	2 days	Fri 1/04/22	Sat 2/04/22	





Zoom-In View of The Killer Lemurs Gantt Chart



	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Project Initiation**	**0.04 days**	**Fri 4/03/22**	**Fri 4/03/22**		
2		The Killer Lemur Group Formation	20 mins	Fri 4/03/22	Fri 4/03/22		Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
3		MS Teams Creation	10 mins	Fri 4/03/22	Fri 4/03/22		Amanda Viray
4		**Project Planning**	**2.13 days**	**Fri 4/03/22**	**Tue 8/03/22**		
5		Create and Share Report Draft	5 mins	Mon 7/03/22	Mon 7/03/22		Amanda Viray
6		Set-up MS Teams Organisation	1 hr	Mon 7/03/22	Mon 7/03/22		Amanda Viray
7		Group Pre-Plan	2 hrs	Fri 4/03/22	Fri 4/03/22		Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
8		Draft Report Findings	1 hr	Tue 8/03/22	Tue 8/03/22		Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
9		**Report**	**19 days**	**Wed 9/03/2**	**Sun 3/04/22**	**4**	
10		Introduction	3 days	Wed 9/03/2	Fri 11/03/22		Lanhlan Higgins
11		Introduction QA	10 mins	Tue 15/03/2	Tue 15/03/2	10	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
12		**Business Rules**	**10 days**	**Wed 9/03/2**	**Tue 22/03/2**		**Dean Brownie,Gia Thu Tran,Oliver Robins,Noah C**
13		Scenario Rules	3 hrs	Fri 11/03/22	Fri 11/03/22		Noah Cook
14		Work, Health, and Safety Rules	3 hrs	Fri 11/03/22	Fri 11/03/22		Dean Brownie
15		Other Legislation and Standards	3 hrs	Fri 11/03/22	Fri 11/03/22		Oliver Robins
16		Ethical, Security, and Privacy Rules	3 hrs	Fri 11/03/22	Fri 11/03/22		Gia Thu Tran
17		Business Rules QA	30 mins	Tue 15/03/2	Tue 15/03/2	13,14,15,16	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
18		QA	1 hr	Tue 22/03/2	Tue 22/03/2	17	
19		**Use Case Diagrams**	**6.25 days**	**Mon 14/03/**	**Tue 22/03/2**	**12**	
20		Draft use case diagrams	2 hrs	Mon 14/03/2	Mon 14/03/2		Amanda Viray
21		Finalise use case diagrams	1 hr	Tue 15/03/2	Tue 15/03/2	20	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
22		Use Case Approval	5 mins	Fri 18/03/22	Fri 18/03/22	21	Kieran Molnar
23		Book Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	22	Lanhlan Higgins
24		Pay Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	22	Noah Cook
25		Abort Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	22	Gia Thu Tran
26		Attend Flight Service	2 hrs	Tue 22/03/2	Tue 22/03/2	22	Dean Brownie
27		Land Home	2 hrs	Thu 17/03/2	Thu 17/03/2	22	Amanda Viray
28		Maintain Mission Control	2 hrs	Thu 17/03/2	Thu 17/03/2	22	Oliver Robins
29		QA (UML Use Case)	1 hr	Tue 22/03/2	Tue 22/03/2	23,24,25,26,27,28	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
30		**Activity Diagrams**	**8 days**	**Wed 16/03/**	**Fri 25/03/22**	**22**	
31		Book Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	23	Lanhlan Higgins
32		Pay Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	24	Noah Cook
33		Abort Flight	2 hrs	Tue 22/03/2	Tue 22/03/2	25	Gia Thu Tran
34		Attend Flight Service	2 hrs	Tue 22/03/2	Tue 22/03/2	26	Dean Brownie
35		Land Home	2 hrs	Fri 18/03/22	Fri 18/03/22	27	Amanda Viray
36		Maintain Mission Control	2 hrs	Tue 22/03/2	Tue 22/03/2	28	Oliver Robins
37		QA (UML Activity)	1 hr	Fri 25/03/22	Fri 25/03/22	31,32,33,34,35,36	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
38		**Domain Class Diagrams**	**10 days**	**Mon 21/03/**	**Fri 1/04/22**	**30**	
39		Domain Class Diagram Draft	2 hrs	Mon 21/03/2	Mon 21/03/2	18	Oliver Robins
40		Finalise Domain Class Diagram	2 hrs	Fri 1/04/22	Fri 1/04/22	39	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
41		QA Domain Class Diagram	30 mins	Mon 21/03/2	Mon 21/03/2	40	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
42		Conclusion	1 day	Fri 25/03/22	Fri 25/03/22	38	Noah Cook
43		References	1 day	Sun 27/03/2	Sun 27/03/2	42	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
44		Report Formatting	2 hrs	Sat 2/04/22	Sat 2/04/22	43	Lanhlan Higgins,Amanda Viray
45		Refinement	6 days	Fri 25/03/22	Sun 3/04/22	9	Amanda Viray,Dean Brownie,Lanhlan Higgins
46		Proofreading	40 mins	Sat 2/04/22	Sat 2/04/22	9	Dean Brownie
47		**Team Management**	**22 days**	**Fri 4/03/22**	**Sat 2/04/22**	**4**	**Amanda Viray**
48		**Meeting Minutes**	**20 days**	**Tue 8/03/22**	**Sat 2/04/22**		**Lanhlan Higgins**
49		1st Meeting	1 hr	Tue 8/03/22	Tue 8/03/22		Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
50		2nd Meeting	1 hr	Fri 11/03/22	Fri 11/03/22	49	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
51		3rd Meeting	2 hrs	Tue 15/03/2	Tue 15/03/2	50	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
52		4th Meeting	1 hr	Fri 18/03/22	Fri 18/03/22	51	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
53		5th Meeting	2 hrs	Tue 22/03/2	Tue 22/03/2	52	Amanda Viray,Dean Brownie,Gia Thu Tran,Lanhlan
54		MS Gantt Chart	5 hrs	Fri 4/03/22	Fri 4/03/22	1	Amanda Viray
55		Closure and Submission	0 days	Sun 3/04/22	Sun 3/04/22	54	Amanda Viray

Zoom-Out View of The Killer Lemurs Gantt Chart

Team Pre-Action Plan

"Whenever anyone goes to his or her associates and says: "This is *what* I am good at. This is *how* I work. These are my *values*. This is the contribution I plan to concentrate on and the results I plan to deliver" the response is *always*: "This is most helpful. But why haven't you told me *earlier*?"" (Drucker, 1999 p.187).

Course Code: SENG2130	**Course Name: System Analysis and Design Group**
Name: The Killer Lemurs	

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Discussion and agreement made of the grade expectations of all group members	Yes or No
MS Teams site created by lab w3	Yes or No
1st Meeting completed by lab w3	Yes or No

Project Action Plan

Event	**Agreed Action**
Team member not participating in discussions regularly	Action 1 – The group should remember, message, and encourage the student(s) and help them if needed. Action 2 – Contact the student (email/MS Teams) on their behavior and remind them of how it will affect their peer review. Action 3 - Bring the issue to the lecturer/tutor.
Team member not completing work	Action 1 – The group should encourage the student and help if needed. Action 2 – Contact the student (email/MS Teams) on their behavior and remind them of how it will affect their peer review. Action 3 - Bring the issue to the lecturer/tutor.

Event	Agreed Action
Team member dropping out	Action 1 – Contact the student who dropped out and ask for information and their work, so the group continues with previous task. Action 2 – Team meeting to reallocate the dropout's tasks evenly Action 3 – Inform the lecturer/tutor on the group member changes.
Discussions not achieving goals	Action 1 – Refocus on priorities and tasks that are important; refer to the meeting agenda. Action 2 – Contact lecturer/tutor for guidance.
Conflict between members (please include as many areas of conflict as you foresee)	**Workload** – Review and make the task more achievable for the group member. **Personal** – Have the group members discuss their problems with one another, alongside a mediator. If still unsolved within members, raise conflict to the course coordinator and tutor. **Attendance** – Contact member on the attendance inconsistency. If still not attending, raise issue to course coordinator and tutor. Try to schedule meetings on more convenient days (as much as possible).
Member not contributing in a timely manner	Action 1 – Inform them about their effect on the teamwork's progress and peer assessment. Action 2 – Formal warning from the group. Action 3 – Alert course coordinator/demonstrator.
Member dominating group	Pre-action – Consult with other members, get their opinions on the member in question. Action 1 – Remind the person of their role and responsibilities.

Event	Agreed Action
	Action 2 – Formal warning, request that they change their ways. Action 3 – Alert course coordinator/demonstrator

Who will do what in this group work?

Task	**Person(s) responsible**
Team Management	Amanda
Introduction	Lachlan
Business Rules	Dean, Oliver, Gia Thu, Noah
Use Case Diagrams	Everyone
Activity Diagrams	Everyone
Conclusion	Noah
Quality Assurance	Everyone
Report Formatting	Lachlan

Date shown in Lab Class: March 4, 2022 (Friday) Date: March 8, 2022

CONCLUSION

What was completed?

Within the span of the time the group was given, we have successfully completed all the necessary tasks in order to create the Space Flight Management System for ‘Starstruck!’. This includes tasks such as creating business rules to follow, use case diagrams, activity diagrams, domain class diagrams, quality insurances and certain team management tasks such as a Gantt chart which was used to make sure everyone was sticking to a schedule.

How did each section of the report achieve the report objectives?

Each section of the report successfully achieved all the objectives as they all sufficiently follow the criteria given to us based on the requirement specifications and the marking guidelines. Every diagram uses the correct shapes and is all based on the requirements given to us by the client.

What are your recommendations for the client?

The group collectively recommends that the client should proceed with the development of the system and make the client understand the business rules and diagrams.

REFERENCES

Australian Space Agency. (2019). *Flight Safety Code*. Canberra: Commonwealth of Australia.

NSW Government. (2022). How to stay COVID Safe at work. Retrieved from https://www.nsw.gov.au/covid-19/business/rules-guidance/keeping-workers-safe

Safe Work Australia. (n.d.). *Managing Risks.* Retrieved from https://www.safeworkaustralia.gov.au/safety-topic/managing-health-and-safety/identify-assess-and-control-hazards/managing-risks

SafeWork NSW. (n.d.). *Legal obligations.* Retrieved from https://www.safework.nsw.gov.au/legal-obligations

State Insurance Regulatory Authority. (n.d.). *Workers compensation insurance*. Retrieved from https://www.sira.nsw.gov.au/insurance-coverage/workers-compensation-insurance

Steering Group. (2007, September). IADC Space Debris Mitigation Guidelines [Review of IADC Space Debris Mitigation Guidelines]. INTER-AGENCY SPACE DEBRIS COORDINATION COMMITTEE. https://www.unoosa.org/documents/pdf/spacelaw/sd/IADC-2002-01-IADC-Space_Debris-Guidelines-Revision1.pdf

WorkSafe ACT. (n.d.). *Role of work health and safety inspectors*. Retrieved from https://www.worksafe.act.gov.au/health-and-safety-portal/managing-safety/role-of-work-health-and-safety-inspectors

Mejía-Kaiser, M. Space Law and Hazardous Space Debris. *Oxford Research Encyclopedia of Planetary Science.* Retrieved 14 Mar. 2022, from https://oxfordre.com/planetaryscience/view/10.1093/acrefore/9780190647926.001.0001/acrefore-9780190647926-e-70.

Government of Australia - Office of the Australia Information Commissioner. (n.d.). *The Privacy Act: Australian Privacy Principles*. Retrieved from https://www.oaic.gov.au/privacy/the-privacy-act

Australia Government - Department of Home Affairs. (2020, May 11). *TravelSECURE: Security screening process.* Retrieved from https://www.homeaffairs.gov.au/about-us/what-we-do/travelsecure/passenger-screening

Australian Competition & Consumer Commission. (n.d.). *Compensation for damages & loss.* Retrieved from https://www.accc.gov.au/consumers/consumer-rights-guarantees/compensation-for-damages-loss

Australian Competition & Consumer Commission. (n.d.). *Flight delays and cancellations: The Australia Consumer Law and flights.* Retrieved from https://www.accc.gov.au/consumers/health-home-travel/flight-delays-cancellations#airline-compensation-policies

Drucker, P. F. (1999) Managing oneself, In *Management challenges for the 21st century*, Butterworth-Heinemann, Oxford, pp. 163-195.