Applications Development Project 3 –ADPB301

Software Requirements Specification (SRS) – Semester 2 Increment 1

I have read, understood and agree to the contents of this document. I accept full responsibility for any errors and omissions in this document.

Group number: 04 Group name: BitCoders

	Reg no	First name	Surname	Sign	Meetings held	Number attended
1	21937709	Boitshepo	Khumatake			1
2	21946168	Yaeesh	Aboobaker			1
3	22007697	Chittesh	Ramlal			1
4	22202462	Liyaqat	Paruk			1
5	22203098	Jawaad	Omar			1
6	22208259	Shayal	Narain			1
7	22218367	Avinash	Narain		1	1
8	22235718	Kushal	Maharaj			1
9	**22237677**	**Tiaksha**	**Kowlesar**			1

Business Domain	Campus Parking Management System
Business name	Futureville University

Contents

1. Executive summary

The proposed Car Parking Management System aims to streamline parking operations at our university, enhancing convenience for students and staff while optimizing space utilization. Through user-friendly features such as registration, permit issuance, real-time availability checks, and advanced booking options, the system will alleviate parking woes. Integration of payment gateways, violation tracking, and robust reporting mechanisms ensures efficient management. With a focus on user experience and administrative control, the system promises to revolutionize campus parking.

2. Business processes (List all Business processes for the project)

No	Business process	Brief description
1.	Register User and Vehicle	Users register themselves and their vehicles in the system to access parking services.
2.	Issue Parking Permit	The system issues parking permits to registered vehicles, possibly with specific conditions (e.g., time, lot).
3.	Allocate Parking Spot	Allocates parking spaces to vehicles based on permit type, availability, and other criteria.
4.	Check Parking Availability in Real-Time	Provides users with real-time information on parking lot occupancy to find available spaces.
5.	Reserve Parking Spot	Allows users to reserve parking spaces in advance, ensuring availability upon arrival.
6.	Generate Reports and Analytics	Generates reports and analytics on various aspects such as usage patterns, peak times, and revenue.
7.	Collect Feedback	Collects feedback from users on their parking experience to improve service quality.
8.	Record Patrol Activities	Manages and optimizes the routes taken by patrols for checking parking violations and security.
9.	Record Violations	Manages the process of issuing parking violations and tracking their resolution.
10.	Notify Users	Sends notifications to users about important information, such as parking availability, booking confirmations, and violations.
11.	Integrate Payment Process	Relevant parties provide payment details and are involved in various transactions for various reasons

No	Use Case Name		Brief Description	Full Name	
		Sem / Inc			Completed Yes / No
12.	Record Non-Organizational Visitors		The Visitation System for non-organizational visitors is designed to allow external visitors access to the parking space for a limited time. Visitor/Vehicle details and the purpose for the visit are recorded and they are given a physical card to differentiate themselves from other drivers.		
13.	Manage Stock and Equipment Inventory		Requesting and overseeing of stock orders as well as maintaining of equipment involved in the car park		

3. Business use cases (List all Business use cases in sequence for the project)

| No	Use Case Name	Sem / Inc	Brief Description	Full Name	Completed Yes / No
1	Issue Parking Permit	1/1	Issuing and Renewal of virtual parking permits ranging from a term to a year.	Liyaqat Paruk with Jawaad Omar	Yes
2	Process Payment	1/1	Integration for permit purchase, fine payments.	Boitshepo Khumatake with Yaeesh Aboobaker	Yes
3	Reserve Parking Space	1/1	Reservation of parking spaces in advance for students or visitors.	Kushal Maharaj with Chittesh Ramlal	Yes
4	Submit Feedback	1/1	Channel for students to submit suggestions.	Avinash Narain with Shayal Narain	Yes
5	Review Feedback	1/1	Admins and Attendants review staff/student feedback.	Tia Kowlesar with Shayal Narain	Yes
6	Allocate Parking Spot	1/1	Spots assigned based on availability.	Yaeesh Aboobaker with Chittesh Ramlal	Yes
7	Check In	1/1	Scan code to validate parking permit upon vehicle entry to ensure only authorized vehicles enter the lot.	Jawaad Omar with Tia Kowlesar	Yes

8	Check Out	1/1	Scan QR code or Numeric Code on departure, parking space is made available.	Jawaad Omar with Avinash Narain	Yes
9	Track Visitations	1/1	Guards use the visitations panel to track and manage non-organization visitors, ensuring security.	Liyaqat Pharuk with Boitshepo Khumatake	Yes
10	Issue Parking Violation	1/2	Guards issue violations to students breaking parking rules.	Tiaksha Kowlesar with Kushal Maharaj	Yes
11	Settle Violation	1/2	Students settle a violation by submitting an Appeal or Paying it off.	Avinash Narain with Shayal Narain	Yes
12	Schedule Shifts	1/2	Activity and shift status of guards is tracked.	Liyaqat Paruk	Yes
13	Blacklist Visitor	1/2	Blacklist a visitor's name or vehicle so they can never enter the parking lot again until blacklist is revoked.	Jawaad Omar with Boitshepo Khumatake	Yes
14	Book Event	1/2	User can book a parking section for an event, requesting a booking then paying it off.	Chittesh Ramlal with Yaeesh Aboobaker	Yes
15	Report Fault	1/2	User can report a fault, admin assigns a technician to the fault, and admin can view progress on fault.	Avinash Narain and Tiaksha Kowlesar	Yes
16	Report Lost Parking Permits	2/1	Report lost permits and request reissuance.	Boitshepo Khumatake	
17	Request Stock Order	2/1	Initiate a request for ordering new stock items.	Avinash Narain	
18	Confirm Stock Order Delivery	2/1	Verify the delivery and receipt of ordered stock items.	Liyaqat Paruk	
19	Issue Payments to Suppliers/Contractors	2/1	Process payments for received goods and services from suppliers and contractors.	Jawaad Omar	
20	Schedule Equipment Maintenance	2/1	Plan and schedule regular maintenance for equipment.	Avinash Narain	
21	Assign Personnel to Equipment Maintenance	2/1	Assign staff to carry out scheduled equipment maintenance.	Tiaksha Kowlesar	
22	Assign inspectors to Track Maintenance Progress	2/1	Assign inspectors to track equipment maintenance progress	Avinash Narain	

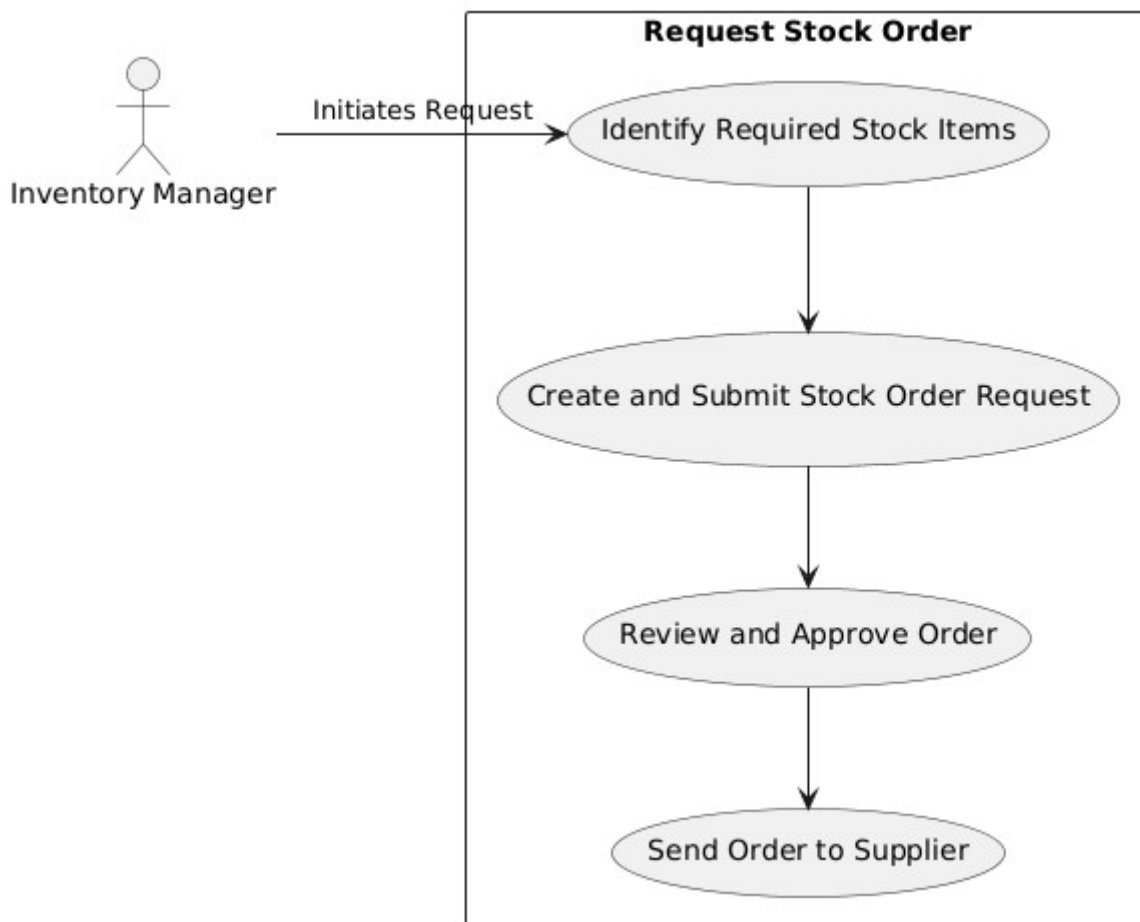| 23 | Track Equipment Maintenance Progress | 2/1 | Monitor the progress and status of ongoing equipment maintenance. | Kushal Maharaj | |
| 24 | Confirm Equipment Maintenance Completion | 2/1 | Verify the completion of maintenance tasks on equipment. | Liyaqat Paruk | |
| 25 | Decommission Equipment | 2/1 | Retire and dispose of equipment that is no longer functional or needed. | Jawaad Omar | |

4. Use case description

*Give a detailed description for each **business use case** identified above. Do not include CRUD operations here.*

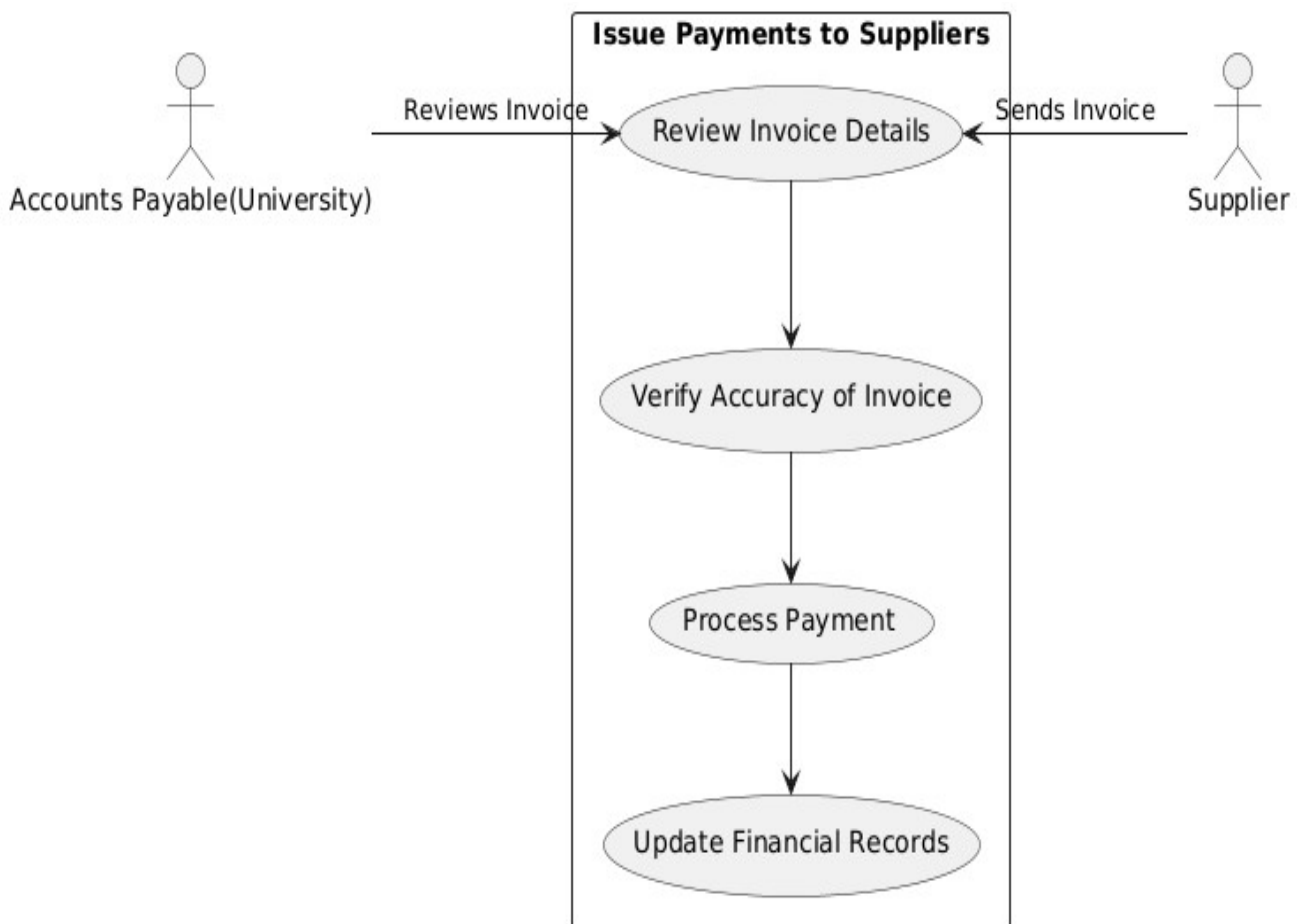| Use Case Number:	16
Use Case Name:	Report Lost Parking Permits
Brief Description:	Report lost permits and request reissuance.
Triggering Event:	A user reports a lost permit.
Actors:	Permit Holder
Preconditions:	A permit is reported as lost.
Flow of Activities:	1. Receive report of lost permit. 2. Verify permit details. 3. Process request for reissuance. 4. Issue a new permit.

Report Lost Parking Permits

Permit Holder — Reports Lost Permit → Receive Report of Lost Permit → Verify Permit Details → Process Request for Reissuance → Issue New Permit
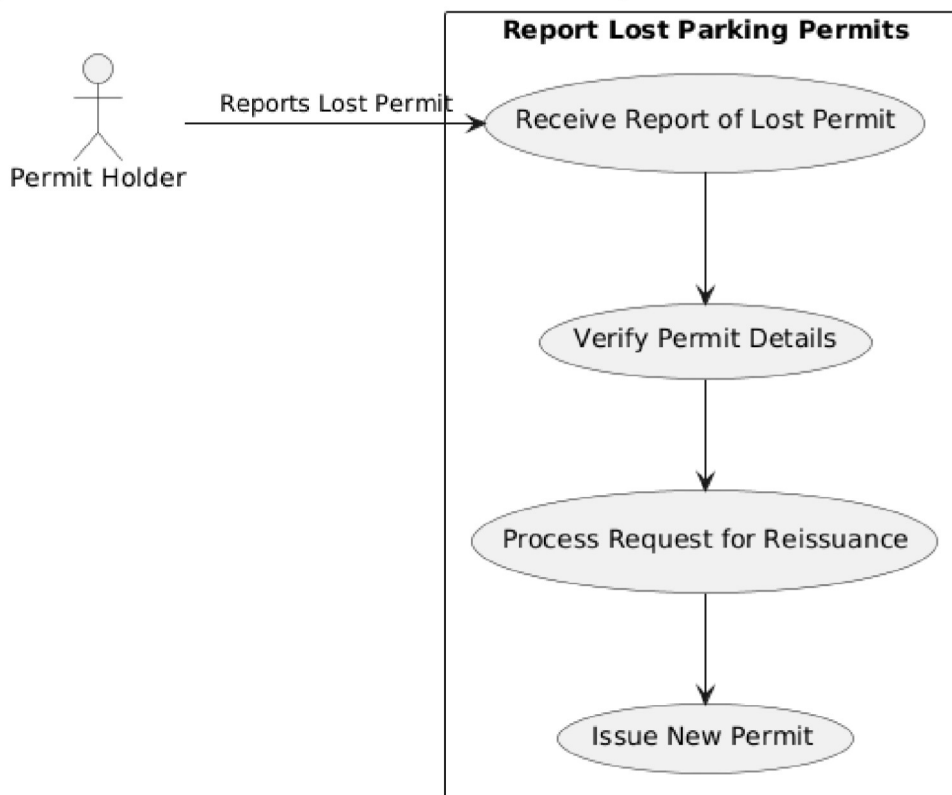
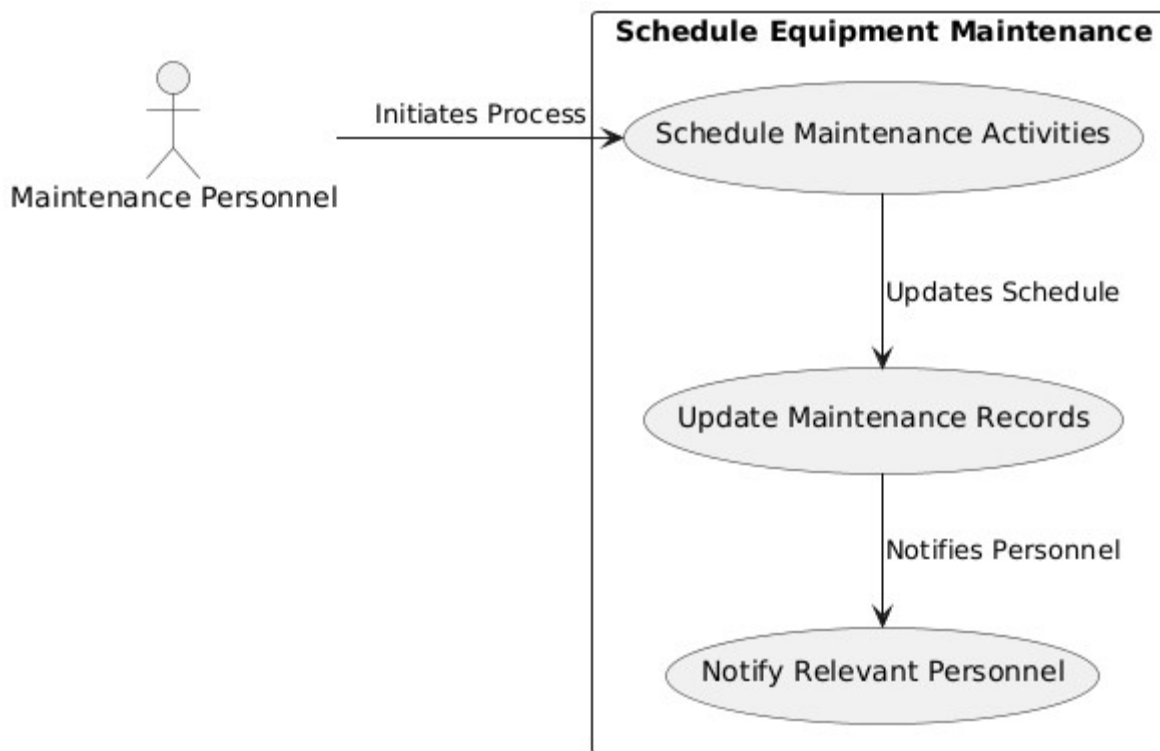| Use Case Number:	17
Use Case Name:	Request Stock Order
Brief Description:	Initiate a request for ordering new stock items.
Triggering Event:	Need for new stock items is identified.
Actors:	Inventory Manager
Preconditions:	Stock levels are low or items are out of stock.
Flow of Activities:	1. Identify required stock items. 2. Create and submit stock order request. 3. Review and approve order. 4. Send order to supplier.

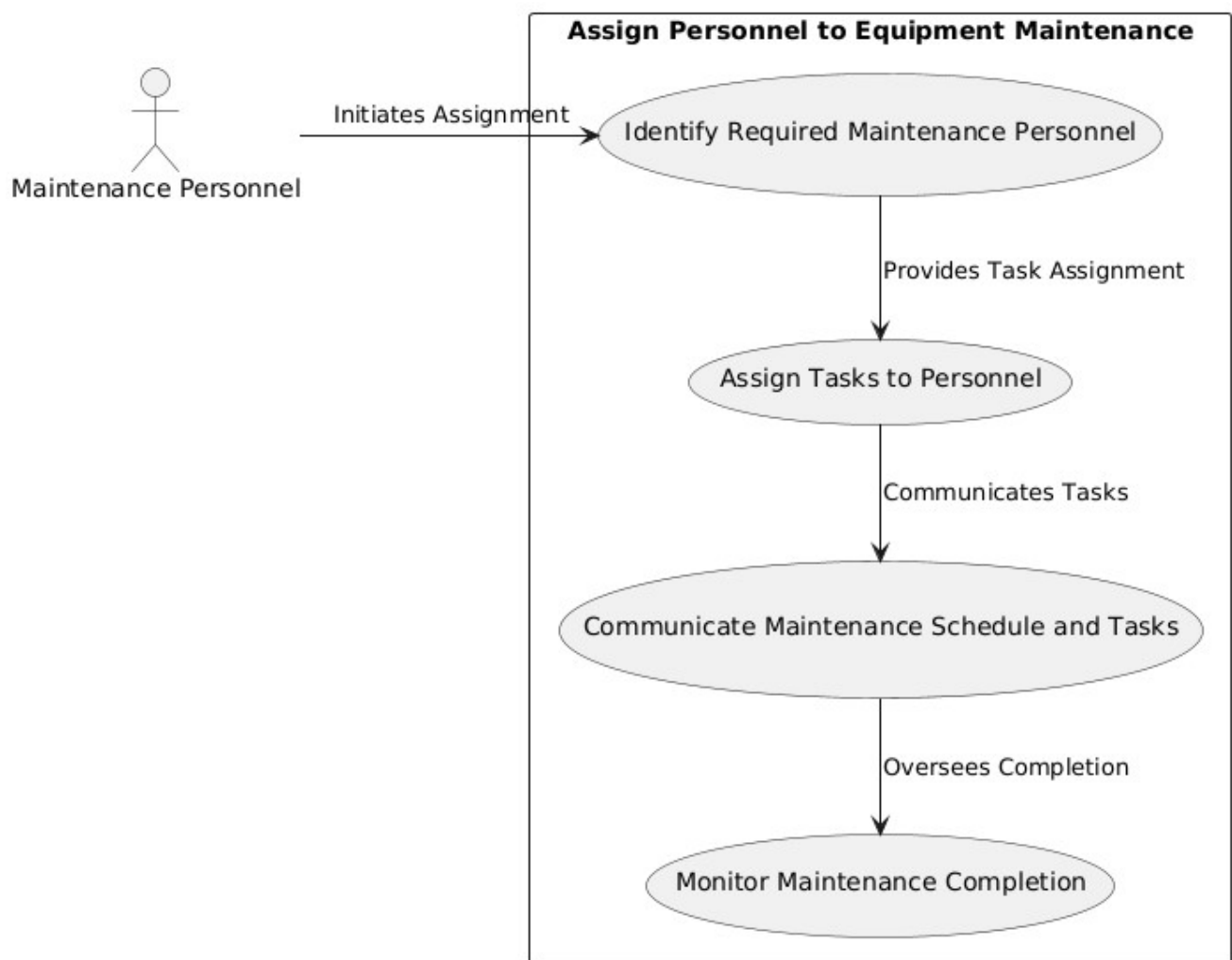|	
Use Case Number:	18
Use Case Name:	Confirm Stock Order Delivery
Brief Description:	Verify the delivery and receipt of ordered stock items.
Triggering Event:	Stock order delivery is completed.
Actors:	Inventory Manager, Supplier
Preconditions:	Stock order has been delivered.
Flow of Activities:	1. Inspect received stock items. 2. Confirm delivery against the order. 3. Update inventory records. 4. Address any discrepancies with the supplier.
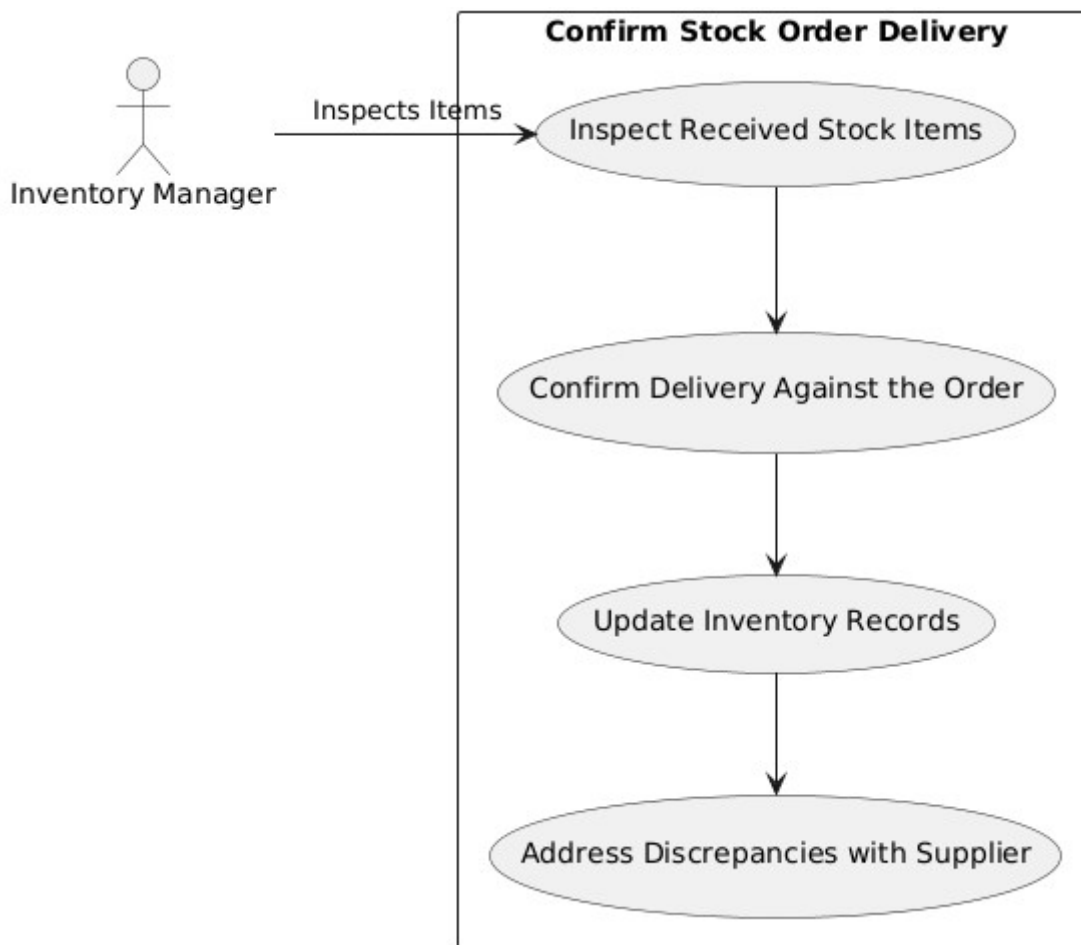
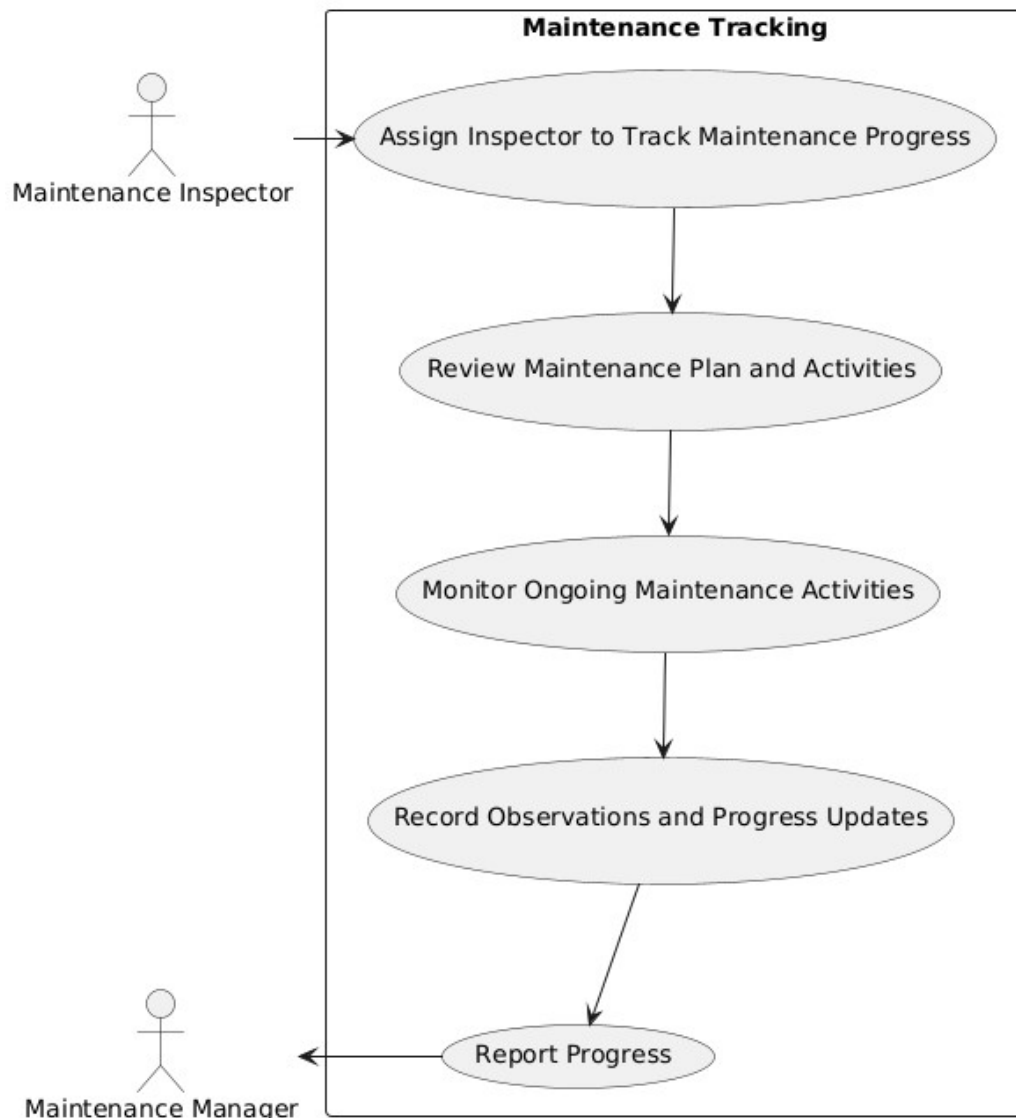| Use Case Number:	19
Use Case Name:	Issue Payments to Suppliers
Brief Description:	Process payments for received goods and services from suppliers
Triggering Event:	Receipt of an invoice from a supplier/contractor.
Actors:	Accounts Payable (University), Supplier
Preconditions:	Invoice is received and approved for payment.
Flow of Activities:	1. Review invoice details. 2. Verify the accuracy of the invoice. 3. Process payment. 4. Update financial records.

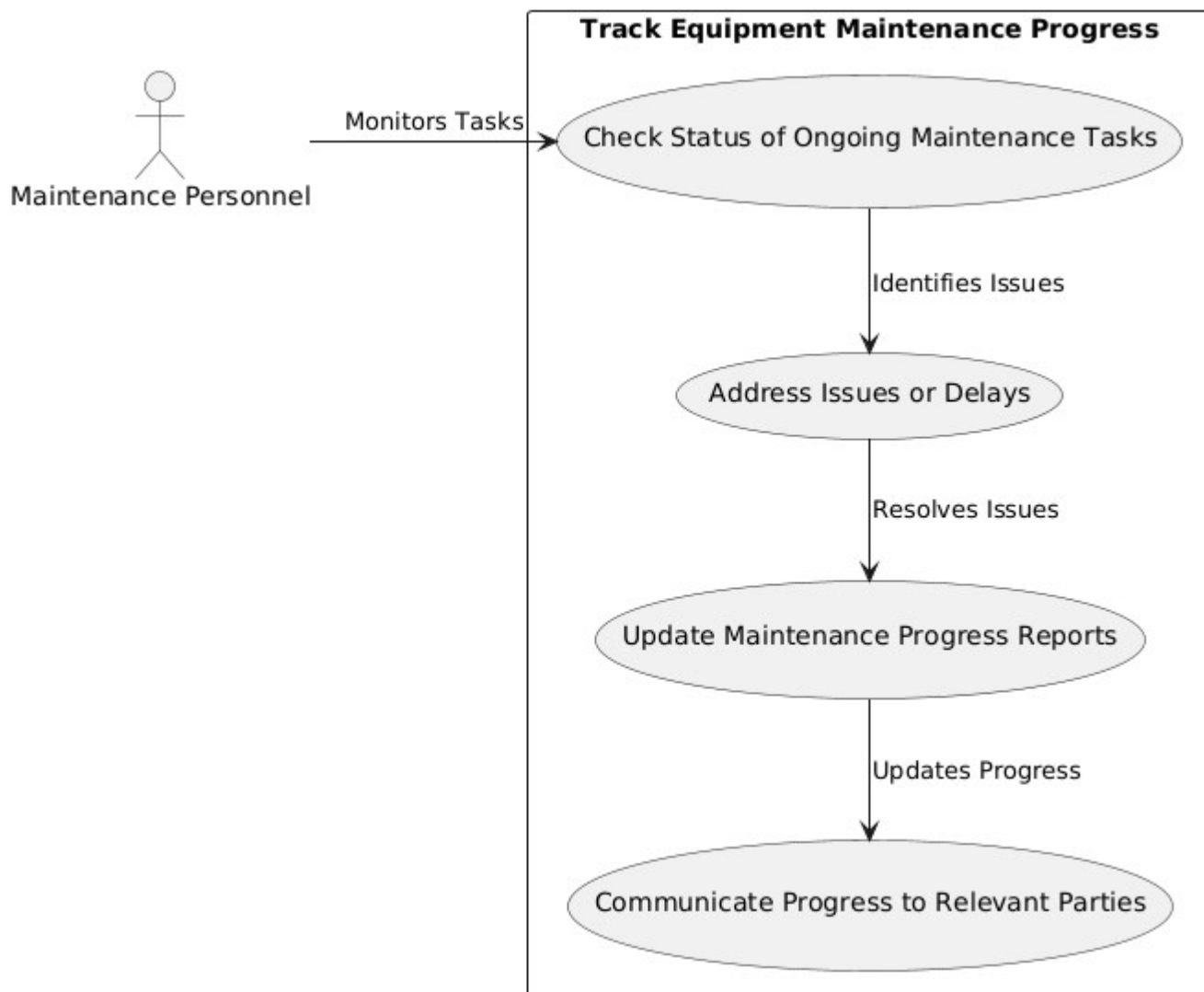| Use Case Number:	20
Use Case Name:	Schedule Equipment Maintenance
Brief Description:	Plan and schedule regular maintenance for equipment.
Triggering Event:	Equipment maintenance needs to be performed.
Actors:	Maintenance Personnel
Preconditions:	Equipment maintenance schedule is required.
Flow of Activities:	1. Determine maintenance needs and intervals. 2. Schedule maintenance activities. 3. Update maintenance records.

Schedule Equipment Maintenance

Maintenance Personnel

Initiates Process

Schedule Maintenance Activities

Updates Schedule

Update Maintenance Records

Notifies Personnel

Notify Relevant Personnel

Use Case Number:	21
Use Case Name:	Assign Personnel to Equipment Maintenance
Brief Description:	Assign staff to carry out scheduled equipment maintenance.
Triggering Event:	Maintenance schedule is finalized.
Actors:	Maintenance Personnel
Preconditions:	Maintenance activities are scheduled.
Flow of Activities:	1. Identify required maintenance personnel. 2. Assign tasks to personnel. 3. Communicate maintenance schedule and tasks. 4. Monitor maintenance completion.

Assign Personnel to Equipment Maintenance

Maintenance Personnel

Initiates Assignment

Identify Required Maintenance Personnel

Provides Task Assignment

Assign Tasks to Personnel

Communicates Tasks

Communicate Maintenance Schedule and Tasks

Oversees Completion

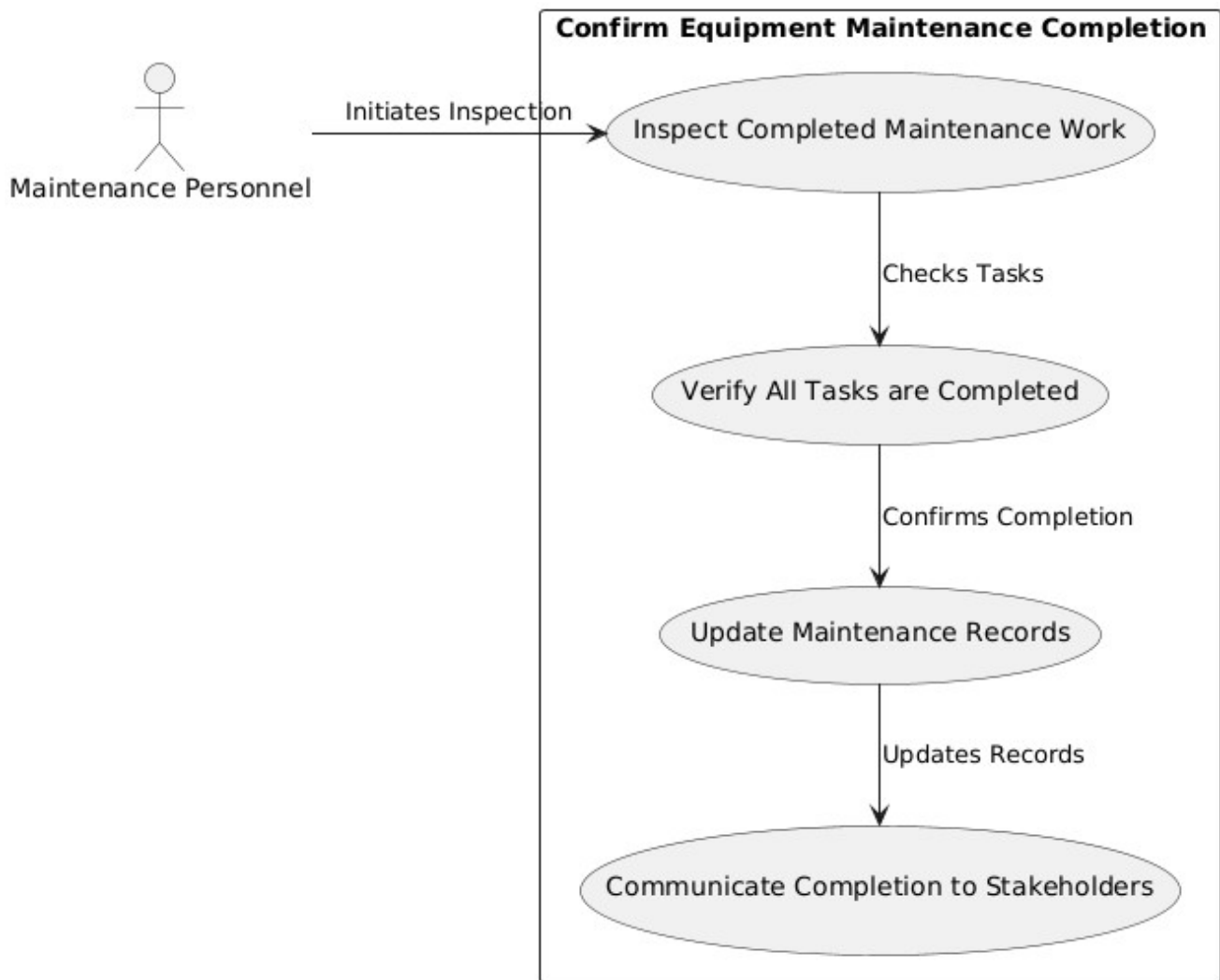Monitor Maintenance Completion

| Use Case Number:	22
Use Case Name:	Assign Inspectors to Track Maintenance Progress
Brief Description:	Assign inspectors to track equipment maintenance progress
Triggering Event:	Maintenance work is initiated or scheduled.
Actors:	Maintenance Inspector
Preconditions:	Maintenance activities are planned or ongoing.
Flow of Activities:	1. Assign an inspector to track maintenance progress. 2. Inspector reviews maintenance plan and activities. 3. Inspector monitors ongoing maintenance activities. 4. Inspector records observations and progress updates. 5. Report progress to the Maintenance Manager or relevant authorities.

Use Case Number:	23
Use Case Name:	Track Equipment Maintenance Progress
Brief Description:	Monitor the progress and status of ongoing equipment maintenance.
Triggering Event:	Equipment maintenance is in progress.
Actors:	Maintenance Personnel
Preconditions:	Maintenance tasks are assigned and underway.
Flow of Activities:	1. Check the status of ongoing maintenance tasks. 2. Address any issues or delays. 3. Update maintenance progress reports. 4. Communicate progress to relevant parties.

Use Case Number:	24
Use Case Name:	Confirm Equipment Maintenance Completion
Brief Description:	Verify the completion of maintenance tasks on equipment.
Triggering Event:	Equipment maintenance is completed.
Actors:	Maintenance Personnel
Preconditions:	Maintenance tasks are finished.
Flow of Activities:	1. Inspect completed maintenance work. 2. Verify that all tasks are completed. 3. Update maintenance records. 4. Communicate completion to relevant stakeholders.

Use Case Number:	25
Use Case Name:	Decommission Equipment
Brief Description:	Retire and dispose of equipment that is no longer functional or needed.
Triggering Event:	Equipment is deemed obsolete or non-functional.
Actors:	Maintenance Personnel
Preconditions:	Equipment is no longer in use.
Flow of Activities:	1. Evaluate equipment for decommissioning. 2. Remove equipment from inventory. 3. Dispose of or recycle equipment. 4. Update equipment records.
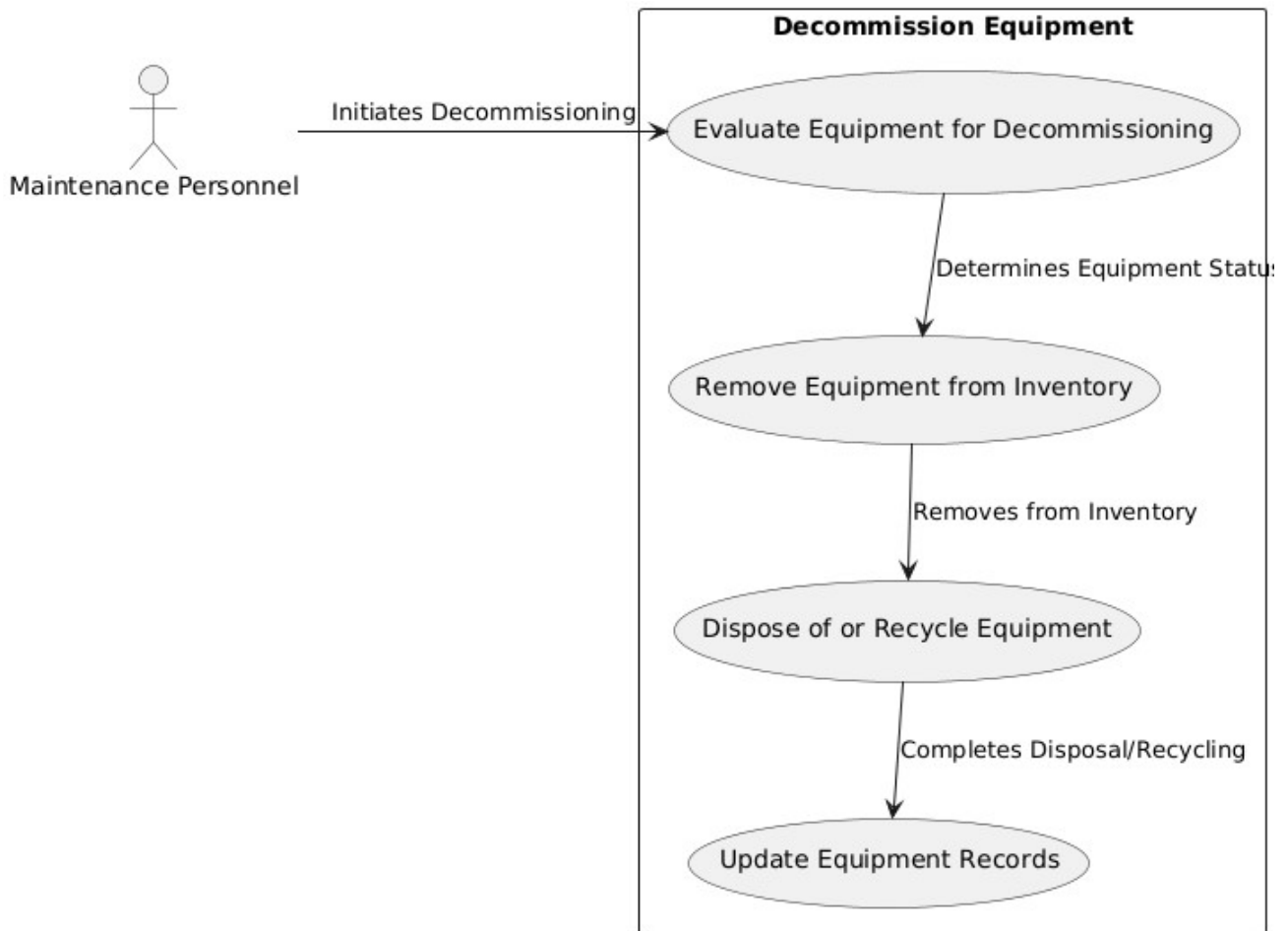
5. Minutes of meeting

Date: 25/07/2024

Time: 09h00 – 11h30

Present: All members were present

Absent: There were no absentees

Agenda:

- Review semester 1 car parking system
- Formulate use cases for semester 2
- Investigate specific subsystems
- Investigate potential improvements

Minutes:

- The meeting was called to order at 09h00 by Avinash Narain.
- A guard training subsystem was discussed and proved to be a valuable idea
- Discussion on expansion to maintenance subsystem was conducted
- Role of equipment and equipment maintenance was discussed
- The meeting concluded at 11h30 with the no further meetings being scheduled for the time being