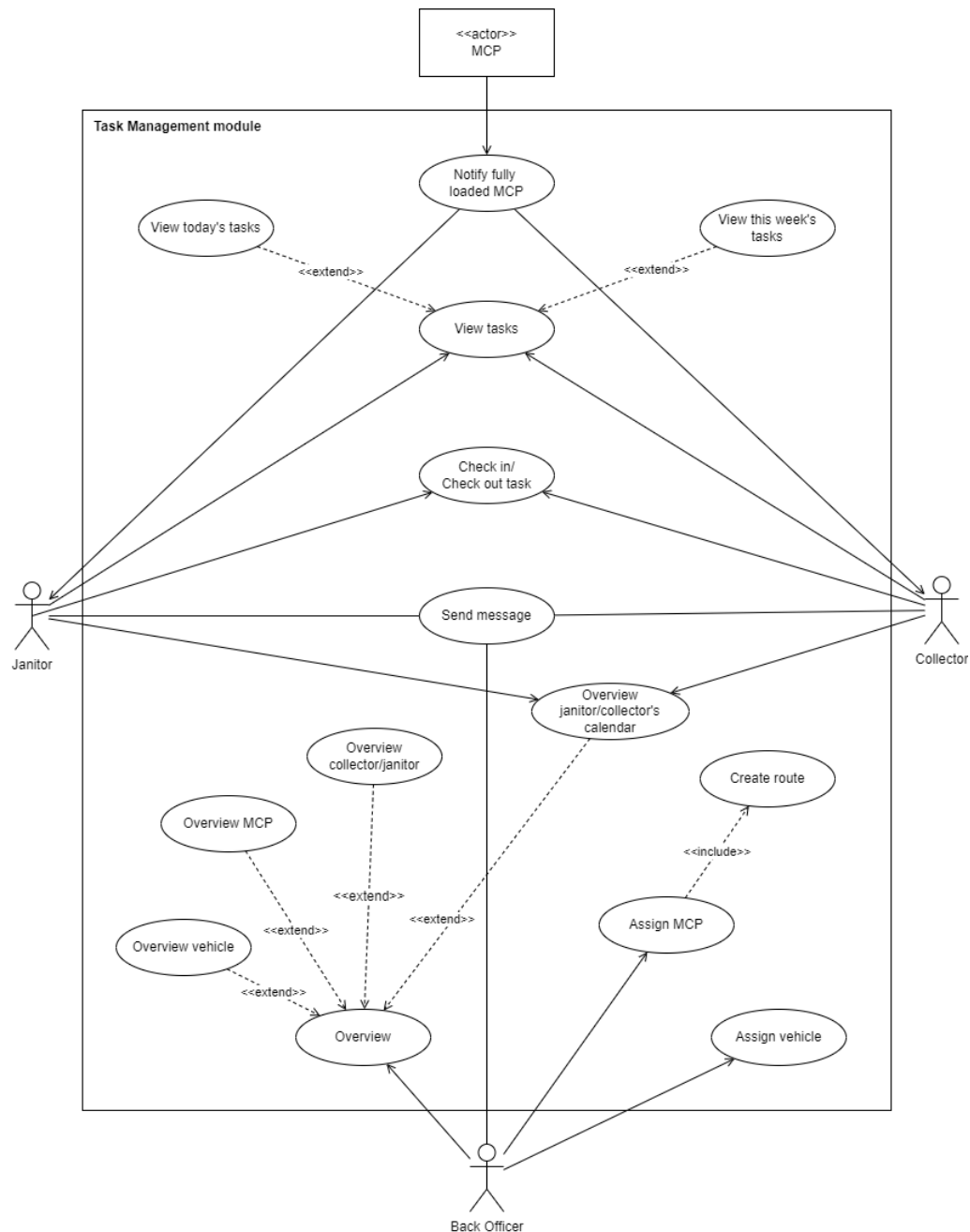# 3 Task 1.3

> ◖ **Question 3.** For the Task assignment module, draw its use-case diagram and describe the use-case using a table format

⊘ Solution

3.1 Use-case diagram for Task assignment module

3.2   Table description of each use case

a. Overview collectors/janitors:

Use-case ID	U1.
Use-case name	Overview collectors/janitors.
Use-case overview	To provide information about collectors/janitors.
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	Users click the "Detailed info" button.
Steps	1. Retrieve corresponding information. 2. Display information on the screen of users' devices.
Post conditions	The required information is displayed on the screen of users' devices.
Exception flow	None.

b. Overview collectors/janitors' work calendar:

Use-case ID	U2.
Use-case name	Overview collectors/janitors' work calendar.
Use-case overview	To provide information about collectors and janitors' schedules.
Actors	Back officers, collectors, janitors.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	When a user press the "Detailed Info" button .
Steps	1. Check the user's privilege. 2. If the user is a back officer, display all calendars. If the user is a collector/janitor, display only their calendar.
Post conditions	The requested calendar(s) is displayed.
Exception flow	None.

c. Overview vehicle:

Use-case ID	U3.
Use-case name	Overview vehicle.
Use-case overview	To provide information about vehicles and their technical details (weight, capacity, fuel consumption, etc).
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is available. 3. Users click the "Vehicles' overview" button. 4. Internet connection is available.
Trigger	Users click the "Get overview" button.
Steps	1. Users choose vehicles from the list of vehicles. 2. The system creates a list of selected vehicles. 3. Retrieve the information of vehicles in the list from the database. 4. Display all information on the screen of users' devices.
Post conditions	Required information are displayed on the screen of users' devices.
Exception flow	If the list of selected vehicles is empty then a "Please select at least one vehicle" message is displayed.

d. Overview MCP:

Use-case ID	U4.
Use-case name	Overview MCP.
Use-case overview	To provide information about Major Collecting Points (MCPs) and their current capacity.
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is connected to MCPs. 3. Internet connection is available.
Trigger	Users click the "MCPs' overview" button.
Steps	1. Retrieve all MCPs' information and capacity. 2. Display all information on the screen of users' devices. 3. Update MCPs' capacity every 15 minutes, then retrieve new capacities from the database and overwrite the old capacities with the new ones.
Post conditions	Required information are displayed on the screen of users' devices and are updated every 15 minutes.
Exception flow	None

e. Assign vehicle:

Use-case ID	U5.
Use-case name	Assign vehicle.
Use-case overview	To assign vehicles to janitors and collectors.
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is available. 3. Users click the "Info modify" button. 4. Internet connection is available.
Trigger	Users click the "Apply changes" button.
Steps	1. Users choose vehicles to assign to janitors/collectors. 2. Update the corresponding information in the database. 3. Change the information displayed on the screen of users' devices.
Post conditions	1. A "Assignment has been completed" message is displayed. 2. The information in the database are updated. 3. The displayed information are updated.
Exception flow	If the vehicle is not available, a "Vehicle is not available" message is displayed.

f. Assign MCP:

Use-case ID	U6.
Use-case name	Assign MCP.
Use-case overview	To assign janitors and collectors to the MCPs.
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is available. 3. Users click the "Info modify" button. 4. Internet connection is available.
Trigger	Users click the "Apply changes" button.
Steps	1. Users choose MCPs to assign to the janitors/collectors. 2. Update the corresponding information in the database. 3. Change the information displayed on the screen of users' devices.
Post conditions	1. A "Assignment has been completed" message is displayed. 2. The information in the database are updated. 3. The displayed information are updated.
Exception flow	None.

g. Create route:

Use-case ID	U7.
Use-case name	Create route.
Use-case overview	To create the optimized routes in term of fuel consumption and travel distance.
Actors	Back officers.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	When a collector is assigned to new MCPs.
Steps	1. Retrieve all relevant routes' information from the database. 2. Create the optimal routes from the given data. 3. Update the corresponding information in the database. 4. Change the information displayed on the screen of users' devices.
Post conditions	1. The information in the database is updated. 2. Displayed information is updated.
Exception flow	None.

h. Send message:

Use-case ID	U8.
Use-case name	Send message.
Use-case overview	To allow communication between back officers, collectors, and janitors.
Actors	Back officers, collectors, janitors.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	A user types out their message, then press "Send" .
Steps	1. The user choose their recipient. 2. The user type their message. 3. The user press "Send".
Post conditions	1. The message is sent. 2. Whether the recipient is online or not, the message still arrives at their mailbox. 3. The message is retained as a copy in the sender "Sent" box.
Exception flow	When the message sending procedure is interrupted (weak Internet connection,. . .), a message is displayed to inform the user about the incident and suggest them to try again.

i. View tasks:

Use-case ID	U9.
Use-case name	View tasks.
Use-case overview	To allow collectors and janitors to see in detail their daily/weekly task in one view.
Actors	Collectors, janitors.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	A janitor/collector press the "View daily/weekly tasks" button.
Steps	1. The user choose whether they want to see their daily or weekly tasks. 2. The tasks are represented.
Post conditions	The user is fully informed of their daily/weekly tasks.
Exception flow	When there is no task, a message is displayed (so that the user doesn't think their app is malfunctioning).

j. Check in/check out task:

Use-case ID	U10.
Use-case name	Check in/check out task.
Use-case overview	To allow collectors and janitors to inform the system about their arrival/departure.
Actors	Collectors, janitors.
Preconditions	1. The system is running. 2. Database is available. 3. Internet connection is available.
Trigger	A janitor/collector press the "Check in" button when they start their duty and press the "Check out" button when they finish their work.
Steps	1. The user press the button. 2. Based on their initial status, the system will perform the task automatically. If the user hasn't checked in, the system will perform check in function and vice versa.
Post conditions	1. The user is checked in/checked out. 2. Their check in/check out timestamp is saved.
Exception flow	None.

k. Notify fully loaded MCP:

Use-case ID	U11.
Use-case name	Notify fully loaded MCP.
Use-case overview	Automatically inform (nearest/most optimal) janitors and collectors when a MCP is fully loaded.
Actors	Collectors, janitors.
Preconditions	1. The system is running. 2. Database is available. 3. The MCP is online and connected. 4. Internet connection is available.
Trigger	An MCP is fully loaded.
Steps	Periodically dispatch message to appropriate collectors and janitors until the MCP is unloaded.
Post conditions	The appropriate collectors/janitors are informed about the MCP.
Exception flow	None.