VIET NAM NATIONAL UNIVERSITY - HO CHI MINH CITY
UNIVERSITY OF TECHNOLOGY
FACULTY OF COMPUTER SCIENCE AND ENGINEERING

Software Engineering (CO3001)

URBAN WASTE COLLECTION AID - UWC 2.0

Task 3: Architecture design

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Ho Chi Minh City, September - 2022

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Nguyễn Tấn Thanh	Modules for system - Describe input, output and function
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Lê Bảo Quốc	Draw "Login" Component diagram and describe it
Lê Ngọc Hòa	Draw "Dashboard" Component diagram and describe it
Lữ Hoàng Anh	Draw "Coordinate" Component diagram and describe it
Nguyễn Thanh Sang	Draw "Communication" Component diagram and describe it

2 Describe an architectural approach

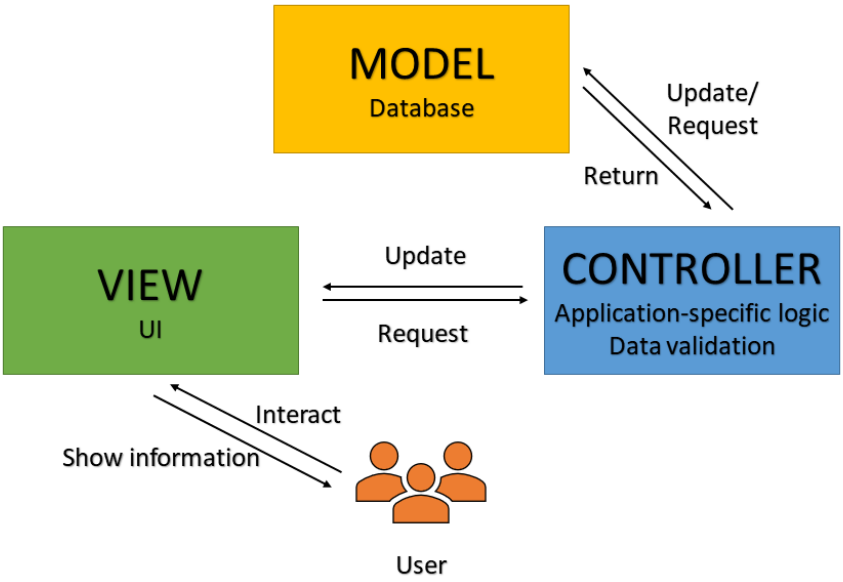

Figure 1: MVC Module

+ Model: Provide methods to query database and return information to Controller. Database stores data about MCPs, People, Vehicles,...
+ View: Show interfaces contain information to User, receive interaction from User and send request to Controller.
+ Controller: Receive request from User, get information from Model and update necessary data to View and update changes/send request to Model.
    - Application-specific logic includes specific functions for the system such as set calendars, assign jobs, create routes,...
    - Data validation checks the accuracy and quality of data before using, importing or otherwise processing data. For example: account, password,...

3 Component Diagram

3.1 Login

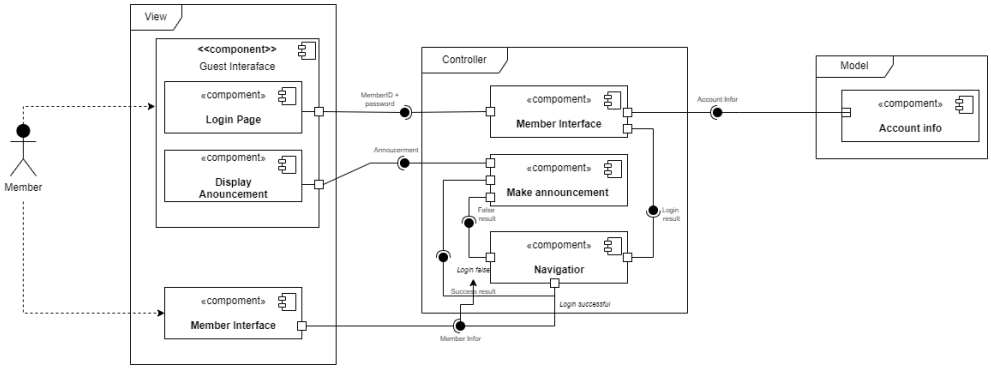

Figure 2: The component diagram of login

Description

- In the interface for the application there is a login page. Members (back officers, collectors and janitors) who already have an account and want to login will enter their memberID and password on this page.
- The employees (Collectors and Janitors) can view their tasks when the Task Management Controller starts to do “RenderTask” after taking them from Task List.
- Their work calendar is planned by “Scheduling Controller” and it will update this time into “Task Management”.
- Besides, they can check-in and check-out by confirming through the button. Next, their attendance will be recorded in the Account Model by “Account Management Controller”

3.2 Dashboard

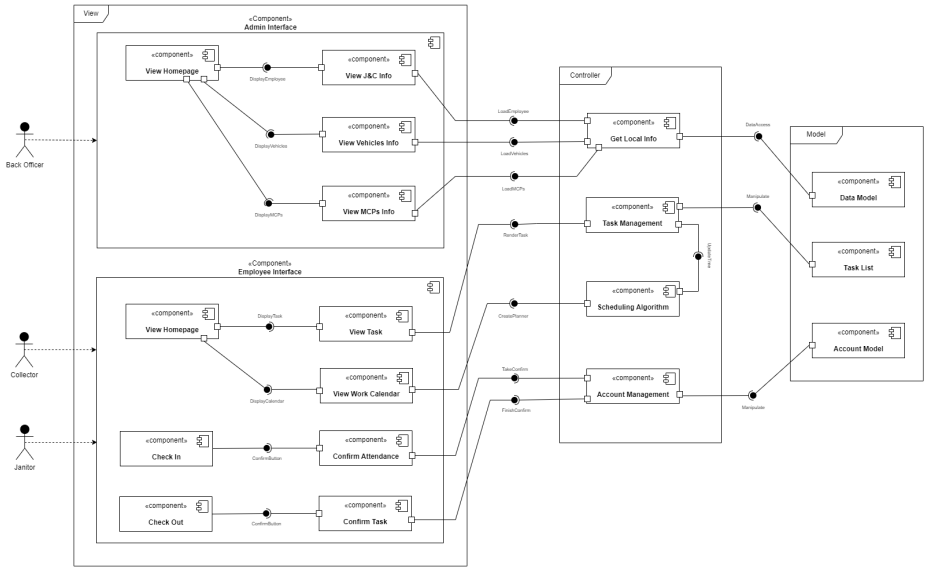

Figure 3: The component diagram of dashboard

Description

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- The employees (Collectors and Janitors) can view their tasks when the Task Management Controller starts to do “RenderTask” after taking them from Task List.
- Their work calendar is planned by “Scheduling Controller” and it will update this time into “Task Management”.
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3.3 Coordinate

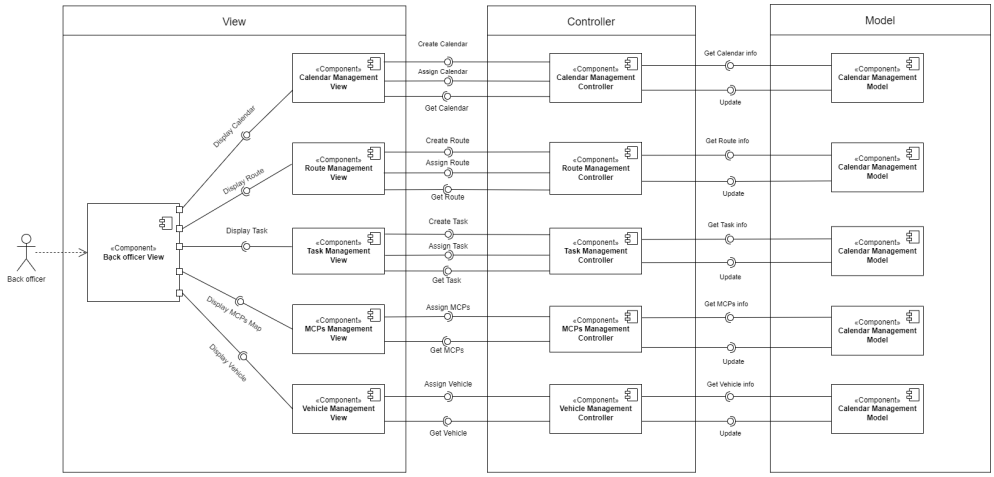

Figure 4: The component diagram of coordinate

Description

- If officers successfully log in to the system, View component will display its components' view.
- Calendar management View provides Create and Assign interfaces while it requires Get Calendar from Calendar management Controller. The new or updated data of the calendar is saved to Database in Model component through Update interface provided by Controller, apart from this, Model also provide Get calendar info interface to Controller.
- Similarly, the rest of View Component has the aforementioned steps.

3.4 Communication

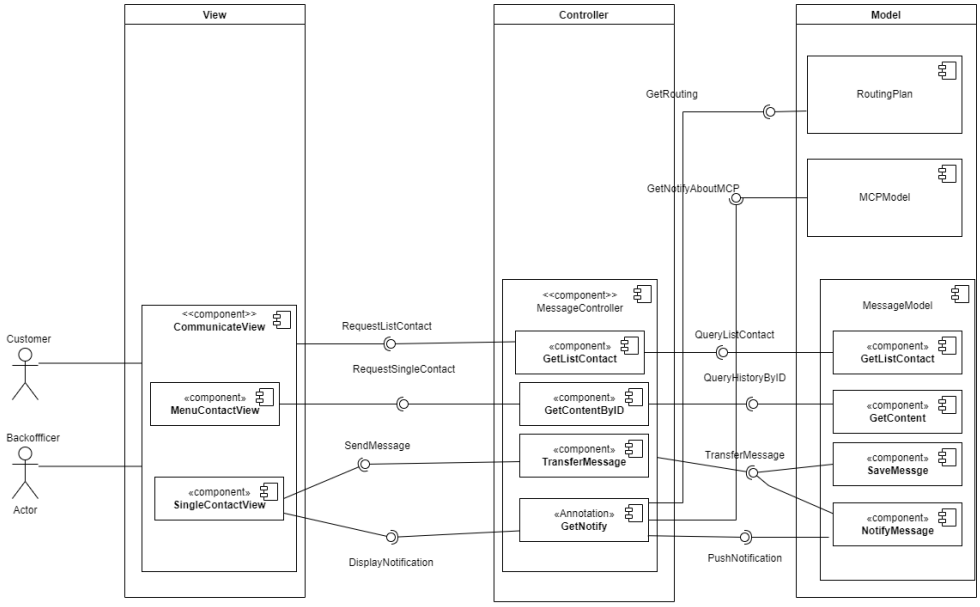

Figure 5: The component diagram of communication

Description

- In the user interface for the application there is a login page. Members (back officers, collectors and janitors) who already have an account click on icon of messenger the list contact will popup
- The user will choose objective to view and send message
- The user choose bot user to get user's calendar of this day or receive notification automatically about MCPs here

4 Deployment diagram

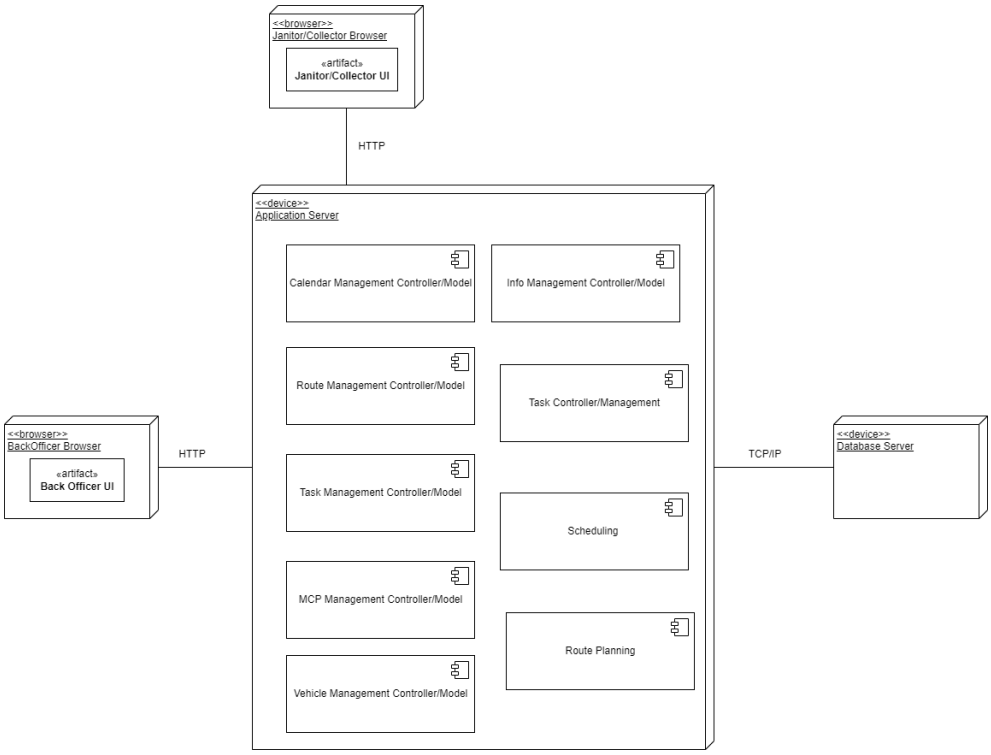

Figure 6: The deployment diagram

Description

- Application Server: the server that contains the implemented application. Includes model and controller components.
- Database Server: connected to Application Server via TCP/IP protocol, has the function to store the necessary databases for the application.
- Collector/Janitor Browser : connected to Application Server via HTTP protocol, is a browser for collectors and janitors used to access the application, manifested by Janitor/Collector UI.
- Back Officer Browser: connected to Application Server via HTTP protocol, is a browser for back officers used to access the application, manifested by Back Officer UI.