Gas Station System

Online Gas Station

Epoka University

Requirements Specification
Version 3.1

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1. Executive Summary

1.1 Project Overview

Any business can be successful only when there is a consistent management of organizational and financial data with an efficient information system. Most of the companies have seen a drift in the process of workflow due to the accuracy and reliability. This raised the need to innovate and develop a system that can be implemented to make information accurate, that can be quickly accessed on demand. An effective information system can entitle a business with better planning, decision-making and hence desired results. Our system aims the same. Managing a gas station is really tough and as a result gaining a competitive advantage in this industry is very difficult.
Offering the cheapest rates when the gas prices are on the rise is obviously the cherry on top which attracts costumers but behind such an easy-appearing solution lies a top management level applied in all sections of the business. For this reason, an online system that covers the work and needs of all the possible users is crucial to achieve prosperity. This system will keep record of the ongoing activities of the station like gas sale, gas meter, generator consumption and monthly credit billing and accounts book preparations up to profit/loss and balance sheet. The system provides features for point of sale, monitoring, inventory, payables, and purchases. The online system will be fully controllable by the administrator which in our case is also the owner as demanded by him. He will have access to his managers and economists which will register and check employee's performance, inventory and financial reports. Every employee can clock in/out, check his/her hours, and other features according to the type of job of each employee.

1.2 Purpose and Scope of this Specification

The scope of this project is an online system that supports the administration of all the activities of the gas station through its managers, economists as well as through the existing employees. The system requests users to log in to use the system. After the authentication, the system allows each user to view their respective features based on their type of job in the business. The system restricts users from accessing other features depending on the user's level of permissions.
The purpose of the Software Requirements Specification is to outline the requirements for the online system to be built for the gas station.
The implementation of a new database system is part of the project. The system accepts data from the files of previous inventory system and the new data added by the user one after the other or by bulk operation.
Issues of website security, other than password, files and data protection within the site, are not part of this project.

2. Product/Service Description

"GEGA Oil" is a gas station in Albania which sells fuel and other products to drivers and passengers. As a business which has a very long time operating in our country but also having a lot of branches, it has faced difficulties in keeping a real time, fair and constant organization of all its operating activities. So a good system will be a

great help not only for each party of the business, from the headquarters and down to the employees as well.
Our idea consists in an online system that covers the activities of the entire business and keeps records of the work of each user. Saying so, our system is a friendly, functional and practical system for each user. We strongly believe that from all the research done from the team this system will be a great one in improving the management of the business and achieving a competitive advantage in its industry.

2.1 Product Context

Our online system aims to provide help on all of its activities of the existing business "GEGA Oil". The software is related only and directly with the business, it operates in behalf of the business, keeping data only related to the business and the services/products it provides in its relationship with the employees, suppliers or customers. It is to be used by all business employees whose functionalities will differ based on their type of job.

2.2 User Characteristics

The administrator:
Since the administrator in our case is the owner this means that he will have control over each and every data or report generated or kept in the database of the system.

- Is able to create and delete accounts for the employees and the economist/manager
- Is able to see and manage financial reports, such as balance sheet, income statement, cash flow statement, inventory etc.
- Is able to see and edit the inventory
- Is able to see and edit the list of suppliers, and products
- Is able to see and edit the list of orders and purchases
- Is able to see and edit payrolls
- Is able to see, manage and edit the list of the employees

The manager:

- Reviews users
- Is able to add users (employees, suppliers) and edit them
- Is able to see and edit purchases, orders, suppliers and products list
- Is able to see and edit payrolls
- Is able to see and edit inventory
- Reviews comments made from employees
- Reviews financial reports
- Reviews clients of the business that have an account in the system

The economist:

- Is able to see, create and edit financial reports
- Is able to see, create and edit the inventory
- Is able to see and edit the list of products and can add new products
- Is able to create, view and edit payrolls
- Is able to see and edit the purchases list, can add new purchase
- Is able to see and edit the orders list and also to add new orders based on the receipts taken from the cashier's and fuel attendant's account

- Has access to employees' accounts

The client:

- Is able to see the products available for sale
- Is able to see points for each product
- Is able to calculate points for all products purchased
- Is able to get discount based on points calculated
- Is able to see his points balance and the future discounts available
- Is able to order a product online

The employees:
Their access and visibility will depend on their job position.
Fuel attendant:

- Is able to see the gas pumps, the left amount of fuel on each of them
- Is able to see product list with details for each product
- Is able to register and see its receipts
- Is able to close his/her shift
- Is able to check his working hours
- Is able to see his wage
- Reports extra hours of work
- Is able to change or reset his password
- Is able to make comments

Cashier:

- Is able to register and see its receipts
- Is able to open/close his/her shift
- Is able to check his working hours
- Is able to see his wage
- Is able to enter new comment and see all the comments made by him/her
- Reports extra hours of work
- Can change or reset his password

Janitor/Security:

- Is able to open/close his/her shift
- Is able to check his working hours
- Is able to see his wage
- Reports extra hours of work
- Is able to enter new comment and see all the comments made by him/her
- Is able to change or reset his password

Fuel delivery driver

- Is able to see the list of orders and edit some of the details for each order
- Is able to see and edit some details from the list of purchases to be made
- Reports extra hours of work
- Closes/opens shift
- Makes new comments, views all comments made from him
- Is able to see wage transactions
- Is able to change or reset his password

2.3 Assumptions

On this software:

- It is assumed that the gas station has all data necessary related to its employees/suppliers.
- It is assumed that all users have Internet Connection.
- It is assumed that each user has a personal account in the system.
- It is assumed that all data in the system will be fully managed and confidentially controlled by the administrator.
- It is assumed that the manager and the economist will have access to certain data of employees, suppliers and products.
- It is assumed that each supplier that will be part of the system has been registered and verified as a business.
- It is assumed that the administrator/manager/economist can make any necessary changes and can use the data stored in the database of the system in regard to the functionalities that the system allows them to do, according to the type of user that they perform in the system. Changes may include employees and/or suppliers/products.
- It is assumed that employees (not including manager and economis) can have access only to their personal data and no other data.

2.4 Constraints

The system will have the following constraints:

- The administrator and the employees must login using their respective username and password
- Users must have basic knowledge on the usage of web applications in order to use this system efficiently
- A pc/laptop is needed to access this gas station system
- A stable internet connection is required to access the system
- This web application must be accessed through a modern web browser such as Chrome, Firefox, Internet Explorer 10+, and Microsoft Edge

2.5 Dependencies

List dependencies that affect the requirements:

- The administrator is the only one that has the authority to delete employee accounts
- The administrator must specify a series of attributes for the employees such as ID, First Name, Last Name, Username, Job Position, Email and Phone number and a Default Password

- Access to the system is restricted only to the pre-assigned usernames by the admin and to the clients who themselves can open their respective accounts
- Only the economist, manager and admin are able to manage the financial reports
- List of products and purchases cannot be generated if no orders and no purchases have been made
- The economist cannot generate reports/ statistics or payrolls if the employees have not entered data according to their job position and have not updated their activity
- The manager cannot give compensation to the employees if they have not updated their extra shift hours
- The manager cannot verify the employee's working hours and shifts if the employees do not confirm their respective shift
- The employees cannot confirm shifts that have already taken place
- The fuel attendant is the only employee that has access toward the fuel dispensers
- The cashier and the fuel attendant are obliged to register the receipts

3. Requirements

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed / Approved
BR_01	The system should have different accounts, each with a username and a password.	All accounts of the users will be stored in the database and their passwords will be hashed.	1	24.04.2020	**Kimberli Troka**
BR_02	The software works as an online system used by 4 main users: the administrator, the manager, the economist and the employees.	This is the main web application which will be used by all users.	1	24.04.2020	**Sheila Pinari**

BR_03	The administrator is the user with the most functionalities and privileges.	The administrator can view, control, delete and modify all the other users' accounts, documents generated and receipts collected.	1	24.04.2020	**Kimberli Troka**
BR_04	All documents generated within the business and reported in the system will be available at any time only to the users they were created from, to the manager and administrator.	Documents are an important part of the business and they should be available to the directive staff in order for decisions to be taken.	1	24.04.2020	**Kimberli Troka**
BR_05	System gives the right only to the administrator and manager to add other/new users.	Other users represent a type of job provided by the business which currently are: economist, cashier, fuel attendant, driver, janitor, security. Another user is a client.	~~1~~	24.04.2020	**Kimberli Troka**
BR_06	The manager is responsible for the employees, their accounts and functionalities.	The manager should be in day-to-day contact with all employees checking on their reported hours, extra hours and daily reports/comments if any.	~~1~~	24.04.2020	**Kimberli Troka**
BR_07	Each new employee to be added in the system is registered by the manager or the administrator by taking his/her personal data, experience and so creating their accounts.	Personal data entered in the system is stored in the database of the system accessible only to the employee himself and to the administrator/manager.	~~2~~	24.04.2020	**Kimberli Troka**
BR_08	The manager, economist and admin have full control over the products and orders.	Every time the business signs a contract with a supplier or client, the product/order list is updated.	~~1~~	24.04.2020	**Kimberli Troka**
BR_09	The manager, admin is provided with a list of all orders of the day, week, etc.	From the list of orders, he signs new contracts with the suppliers over new products to be purchased which only the manager and administrator has contact with.	~~2~~	24.04.2020	**Kimberli Troka**
BR_10	The economist supervises the contracts over new products purchased and sets the necessary features for the products to be sold within the business.	Every economic aspect is supervised by the economist including here contracts but also basic aspects like the price or taxation of the products to be sold.	~~1~~	24.04.2020	**Sheila Pinari**
BR_11	The economist prepares financial reports which analyze the wellbeing of the business at a specific moment in time.	Every report is checked by the manager/administrator who then take decisions.	~~1~~	24.04.2020	**Sheila Pinari**
BR_12	The economist gets a view of the employee's accounts which includes only their hours of working and wages.	Every wage payment of each employee is prepared by the economist and then checked by the manager.	~~2~~	24.04.2020	**Sheila Pinari**

BR_13	The economist checks the inventory and reports its balance when preparing the inventory document of the business.	Every change in the list of products is reflected in the inventory and so every time it gets updated by the economist.	~~2~~	24.04.2020	**Sheila Pinari**
BR_14	The administrator, manager or economist can create new empty documents based on their main tasks.	If the current document opened by them contains unsaved changes then the system allows these users to save changes before closing the document.	~~2~~	24.04.2020	**Klea Uka**
BR_15	The system allows the 3 main users to save the opened document into a file.	This document can also be exported to an Excel/ Word file in order to be accessible even offline.	~~2~~	24.04.2020	**Klea Uka**
BR_16	The system allows the 3 main users to attach images, graphs or lists to the document opened.	The system allows users to save attachments to the file before closing the document.	~~2~~	24.04.2020	**Klea Uka**
BR_17	Each list that is accessible from the account of a user or generated by them maintains data in ascending/descending order chosen by the users themselves, and according to the date-time created.	This makes data from lists quickly accessible from their users.	~~2~~	24.04.2020	**Ada Dedja**
BR_18	Each change made anywhere in the system shall contain author, date & time, and description of the change.	The system shall allow users to expand and collapse all changes in the History pane.	~~2~~	24.04.2020	**Ada Dedja**
BR_19	The system should display updated values within 2s after user triggers the edit operation.	This will be a maximum edit response time, the optimal time is 1s.	~~2~~	24.04.2020	**Ada Dedja**
BR_20	Every user that has access to the New operation shall have his work registered by system while the operation is ongoing.	The user may discard or save the changes made in the window opened by the New operation.	~~2~~	24.04.2020	**Ada Dedja**
BR_21	Logout operation shall close the account of the user and not make it accessible for him anymore.	To go back online, every user shall enter the username and password.	~~1~~	24.04.2020	**Devis Myteveli**
BR_22	The system shall encrypt the persistent system data.	All personal data is protected based on regulatory and security requirements.	~~1~~	24.04.2020	**Kimberli Troka**
BR_23	The system shall sanitize any data input or imported by users.	All data is maintained within a sense of security and does not exploit the security holes.	~~1~~	24.04.2020	**Kimberli Troka**
BR_24	When logout operation performed, the system transfers the user to the home page.	“Logged out successfully” will be displayed and system updates the information in Audit file.	~~1~~	24.04.2020	**Devis Myteveli**
BR_25	If a user is logged in but not performing any action, system must be terminated automatically.	System terminates the session if unused for 30 minutes.	~~1~~	24.04.2020	**Devis Myteveli**
BR_26	Cashier can view the list of products purchased and currently in the inventory of the	A list with all products and their respective price, quantity and taxation is	~~1~~	24.04.2020	**Ada Dedja**

	business.	available for the cashier.			
BR_27	Cashier and the fuel attendant can generate receipts.	Each receipt is supervised by the economist by checking on each item sold.	~~1~~	24.04.2020	**Ada Dedja**
BR_28	Each employee representing a user in the system shall report their daily hours of working.	Every employee starting its shift must clock in and clock out in order for his/her hours to be recorded by the system. In this way not only the standard working day hours are recorded but also any other extra hour.	~~2~~	24.04.2020	**Devis Myteveli**
BR_29	Specific users have access to an edit operation.	User clicks on Edit link next to the record which he/she wants to modify within their scopes and functionalities in the system.	~~2~~	24.04.2020	**Klea Uka**
BR_30	After accessing Edit, system opens the window of the record chosen to be edited.	After user starts editing, he can click on Submit to save changes or cancel to abort changes.	~~2~~	24.04.2020	**Klea Uka**
BR_31	When Submit is pressed, system checks if barcode (of a supplier/product) is unique.	If yes, system updates the action in the appropriate database.	~~2~~	24.04.2020	**Kimberli Troka**
BR_32	If barcode is not unique, system displays an error message.	System asks user to repeat changes again.	~~2~~	24.04.2020	**Kimberli Troka**
BR_33	Cashier and fuel attendant can edit their receipts being generated.	Changes include products being sold or their quantity.	~~2~~	24.04.2020	**Ada Dedja**
BR_34	The administrator and the manager can edit the list of employees, suppliers, products and the content of documents.	Every document generated by user can be edited by the administrator or the manager.	~~2~~	24.04.2020	**Kimberli Troka**
BR_35	The economist can edit the content of the documents, reports made by himself only.	Every edit made is viewed by the manager and the administrator.	~~2~~	24.04.2020	**Sheila Pinari**
BR_36	The fuel attendant has access to the fuel amount available.	Every time a fuel receipt is recorded the amount changes as well.	~~2~~	24.04.2020	**Ada Dedja**
BR_37	The driver has an option to see orders from clients coming into the business and their locations.	Orders list shows the driver only the kind of products ordered and the amount to be transported to the client.	~~2~~	24.04.2020	**Klea Uka**
BR_38	The driver has an option to see deliveries, incoming products in the business.	The delivery list shows all products to be collected from suppliers and delivered in the business within the shift.	~~2~~	24.04.2020	**Klea Uka**
BR_39	The driver can edit its deliveries or orders.	He can open the list containing orders/deliveries and tick the ones already completed. Information is directly transmitted to the manager under the driver's account.	~~2~~	24.04.2020	**Klea Uka**

BR_40	Janitor and Security are basic users of the system.	They can clock in/out, see hours worked and wage balance.	~~3~~	24.04.2020	**Klea Uka**
BR_41	Cashier, fuel attendant, driver, janitor and security employees have access to a Comment operation.	Comment opens a window where each user can report any unusual activity recorded during their shift or any requests. Every change made in the window is recorded automatically in their account and viewed by the manager.	~~3~~	24.04.2020	**Devis Myteveli**
BR_42	Every user that has access to open a window that contains information (so the document) can also print it.	The device in which they operate should be connected to a printer and if not, the document can be downloaded in their device instead.	~~3~~	24.04.2020	**Kimberli Troka**
BR_43	In the homepage a New operation is present, and the operation can be performed only the administrator or the manager.	Every other user can just view the information inserted.	~~2~~	24.04.2020	**Sheila Pinari**
BR_44	A New operation is present at each account of the users also.	This time New opens an exact window as the one it has near where users can insert new data and submit it.	~~2~~	24.04.2020	**Sheila Pinari**
BR_45	In the homepage, when a user clicks login after entering the username and password the respective account will be opened only if data entered matches the database data.	If information is true, system opens the session of the account. If not than it displays “Login Failure” information, which stands for either a database error or an invalid username/password.	~~1~~	24.04.2020	**Devis Myteveli**
BR_46	Each client is registered in the system.	Each client’s username, password and credit card (if he uses a credit card to pay instead of cash) information is stored in the database.	~~1~~	24.04.2020	**Sheila Pinari**
BR_47	Client performs a human or robot control test.	Client should fill it in order to be sent to his/her respective account’s page.	~~2~~	24.04.2020	**Sheila Pinari**
BR_48	Client can view the products list and make orders from it.	The products shown are the ones the business has in storage and available for sale.	~~2~~	24.04.2020	**Sheila Pinari**
BR_49	Each product is associated with a number of points.	Every time the client purchases a product its number of points is also registered and added up.	~~2~~	24.04.2020	**Kimberli Troka**
BR_50	A certain number of points is associated with a discount amount.	The discount amount in the price of the products purchased is determined by the number of points	~~2~~	24.04.2020	**Kimberli Troka**

		collected by each client.			
BR_51	When making a new order, the payment details are required to be filled from the client.	All credit card details necessary to make the payment online or he can visit the shop instead.	~~2~~	24.04.2020	**Sheila Pinari**
BR_52	Each product is stored based on its name or id.	Each product is placed into categories based on its id/name.	~~1~~	24.04.2020	**Kimberli Troka**
BR_53	Every new supplier is registered based on its id or name.	In the registration of each supplier, data like name, id, contract beginning and ending date and other contract details are stored in the database.	~~1~~	24.04.2020	**Kimberli Troka**
BR_54	Each user, except client and admin, can access the information regarding their wage from their account.	They can view all transactions made during their working time in the business and their latest transaction made.	~~3~~	24.04.2020	**Klea Uka**
BR_55	For each extra hour a compensation will be calculated for each employee.	At their extra hours, employees can see their total extra hours worked, the compensation per hour and the full compensation.	~~3~~	24.04.2020	**Ada Dedja**
BR_56	Each user can change his/her password.	This can be done by entering the old password, typing a new one, confirming it and saving the changes made.	~~2~~	24.04.2020	**Devis Myteveli**
BR_57	**If a user has problems with his/her password, he/she can reset it at any moment**	**The database system will save their email as well associated with their confidential information, so they can reset password through a confirmation email.**	~~1~~	**24.04.2020**	**Devis Myteveli**

3.2 Non-Functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

To construct a good user interface, the specific target group should be specified first. The online gas station will be built to ease day to day operations for the staff of our

chosen business and help the administrator/owner have a better control over employees and their contribution to the business on a daily basis.

1. Login credentials

In the first page of the web app, the login interface will show the logo of the chosen gas station and below it will consist of the two text fields where each user will log in by their username along with password. If any of the users does not remember their password, they can access Reset Password and through their email they will find a solution. In case the user (only client can do this, if the user is an employee he will be added to the system by the manager or admin himself) doesn't have an existing account, he will be able to sign up by clicking Create a New Account, by providing an email, username and password and after their information is verified by the manager their account will be activated.

2. Home page

In this page, users will be able to enter their side of the application. Every user will be able to access their account by entering true information of username and password. These are the users of the system as well as the staff of the business:

- Economist
- Fuel attendant
- Administrator
- Janitor
- Security
- Cashier
- Manager
- Driver

The home page includes all the operations that can be performed by the specific user through his/her account:

- The economist's page will include reports (all financial reports required for a business created by the economist), inventory (inventory document prepared by the economist at specific date-times), payrolls (payroll sheets prepared for each of the employees), the list of products, orders and purchases, list of employees, and economist's main information as a user like all users/employees of the business have: wage, working hours, extra hours, the change of password operation and logout.
- The fuel attendant's page will include several features. He will be able to view the list of products and more importantly of gas and oil tank amounts. Clicking on the fuel products will generate their actual amounts and other details such as price. He will be able to view his wage and enter his shift, the working hours plus the extra ones. He can enter and print receipts for each customer's order, either online or not online.
- The administrator will have access to every user's information, he can add, edit, delete or view their information and data entered in their respective accounts. He has full access to the information related to the shop of the business such as the list of products/orders/purchases/suppliers, and to the financial management of the business and of each employee.
- The janitor will be able to enter shift hours (the working hours or extra ones), report anything unusual during his/her shift or any requests regarding the job. Anytime there's something wrong janitor can change the password.
- Security guards will enter their shift and view wage transactions and also have the Comment section to report any unusual activity of the night in charge or any requests regarding their job in general.

- Manager will be able to view, edit the economist and each employee' activity. He will have full control over the products on sale, purchases, business suppliers and of orders recorded by the cashier and the invoices taken by the fuel attendant. Manager controls online orders as well by reviewing clients' accounts who are online customers of the business. Manager reports his own working hours, views wage transactions, changes his account's password.
- Cashier will be able to have a full view of the product lists, their prices and amount of taxes applied on each item if any. He can generate, edit or save new receipts based on orders of the moment or online orders. He will have to report his full hours or extra and check his wage, access Comments section.
- Driver' main page of his/her account will give him access to the list of orders to be shipped and of orders to be purchased. He can edit both lists by marking products as shipped or purchased. Driver reports his working hours, extra ones, views wage transactions, accesses Comments section, changes his password. Another user of the system but not part of the staff is:
  - Client, in the main page views products purchased from the business and points collected up to that moment or makes a new order online through his/her account by selecting wanted products and checking each product's price, points and discount to be claimed.

3.2.1.2 Usability

The GUI should be easy to learn and use by users of any technical background. A built-in help feature should be available in all pages, to guide the users with the available functions on that page. An easy to understand documentation should be provided with the system.

Privacy

The gas station system will be designed in order to have relevant information and alerts regarding privacy issues and for them to be easily accessible and visible at all time. However, the information and alerts must be displayed in a way that does not disturb the user or affect his workload. Each employee's personal information should be visible only by him and accessed easily at any time.

Accessibility

The information should maintain an extensive and universally acceptable form, and it must be compliant with accessibility standards. Inaccessibility can slow the company's process and cause financial losses since employees cannot access their information or interact with their supervisor.

Consistency

The gas station should be consistent at both levels of visuality and functionality. The elements must be designed accordingly to the globally recognized patterns and guidelines. Consistency is an important component of our system because patterns of inconsistency may trigger feelings of frustration and cause misunderstandings between users.

Adaptability

The system will be adaptable to user interaction with the interface. So when a user logs in for the first time their username and password are remembered by the system. The adaptability should apply in cases where settings are changed and the system has to adapt and prioritize the new regulations.

Learnability

The learnability of the software is a crucial element and very significant aspect of user interactivity. The easier it is for the user to learn and understand the system the

better their performance and efficiency. By having an easy to learn software, we help user reduce their average task time.

3.2.1.3 Efficiency

The efficiency of the system must be at the level where it ensures the interactivity of users at all times. The system should provide users with relevant information constantly so that it is reliable. Our online gas station system must be efficient meaning that administrator will easily contact his employees at any time during working hours, the economist can be in touch consistently with the fuel attendant and cashier and discuss any issues that arise through daily sales. The data in reference to inventory, reports and transactions should be automatically updated and in accordance with the actual state of the business.

3.2.1.3.1 Performance

In order to create a good performance evaluation, we should go over each of these parameters to find out what performance is our system offering:

- Response time is the average time it takes the system to reply to a request, our system must response within a 500 millisecond interval.
- Throughput is the number of tasks the system processes within a defined time interval, in our case the system should support the use of all users at once.
- System availability is the percentage of times the system is responsive to requests in difference with the percentage of times it is not. The system should be available 99.5% of the time, on average.

A quick way to test these parameters is through online pages that provide these services like gtmetrix.com, tools.pingdom.com, websiteoptimization.com etc. which also help solve optimization issues.

3.2.1.3.2 Space requirements

- Disk space, when discussing space, we need to take into consideration the number of pages the software will have and the amount of photos, interactive images, CSS files and email accounts in it. The more pages and the more files in a web page the more disk space it will need, but the number of visitors also affect space. Disk space of the software should be based on this information and considering the low prices of web hosting resources these days it can be purchased in gigabytes. On average, our software will most likely need less than 10 Gb per month including financial statements and inventory that take up more space than the other factors.
- Bandwidth, on the other hand, is the number of data a system can transfer from the website to end users. In our case, the activity of the users will be centered around the interaction between the employee and the system so bandwidth needs to be at least 20 Gb in order for the web page to support every communication and documentation needed.

3.2.1.4 Dependability

To make our website more reliable and trusted there are several things to be avoided and things to look for:

- Looking for established institutions to partner with, these institutions must be prestigious and should have been around for a while to gain recognition.
- Staying away from commercials is key, since many advertisements popping up at once makes the app uninteresting and not trusted.
- Displaying up-to-date information at all time is also important
- Check for the sites overall look, it should look professional and avoid any misspelling or sloppy writing.

3.2.1.5 Manageability/Maintainability

3.2.1.5.1 Monitoring and Operations

The system should work reliably, with automatic backup and recovery features. In case of unexpected termination of a session, the unsaved data should be recovered without loss and displayed to the respective users for saving into the system or continuing with the work. At any time, audit file and all database and mailing information are required to be updated in the backup.
The system, at any time, should be accessed only by the authenticated users. Network communications should use cryptographic protocols such as SSL. Automated responses should be restricted using CAPTCHA. The system is required to end the session automatically, when an open session is not used for a specific period of time (half an hour).

3.2.1.5.2 Maintenance

The system should be easy for the users who execute the system day to day, for the developers who wish to edit or develop further, and for the personnel who is in charge of the maintenance.

3.2.1.6 Security

The data in this gas station system is considered to be sensitive and we assure the users that we will be able to protect the data and provide a high security for this system.

3.2.1.6.1 Protection

In order to protect the system, we will take the following measures:

- The password will be encrypted using MD5 (Message-Digest Algorithm) which is a widely used hash function
- The gas station system will validate the input data

- SQL filtering will be used in order to prevent any case of SQL injection
- Each user will see only the information which is related to his respective page or role in the business
- The employees will be able to change their default password according to their choices

3.2.1.6.2 Authorization and Authentication

- The authentication will be the username, password, reCaptcha and each user will be able to log in using its respective credentials
- Only the pre-assigned employees will be able to log into the system and clients who are free to create their own accounts
- Each user is authorized to access only the corresponding information depending on the user type/job position
- If the credentials are invalid an error message, login failure will be shown to the user

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

Environmental requirements specify the operating environment of the system.

- Gas Station facilities operate for 24 hours a day and as a result we estimate that the application shall be available for access 24/7
- The program will be available through every pc/laptop device connected to internet and will be accessed through modern browsers (Chrome, Firefox, Internet Explorer 10+, and Microsoft Edge)
- The system will not be forced to encounter a downtime and downtimes will not interrupt the work process or slow it down
- Maintenance will be scheduled and it will not affect the system's functionality, unscheduled maintenance will not last more than 30 minutes

3.2.2.2 Operational Requirements

This gas station system will be a web-based application that provides the management of a filling station facility. Thus, this system should be able to allow the employees to manage their work and maintain their information on their corresponding page.
The main operations that will be provided to the manager, economist and other employees related to their respective job position are as follows:

- Accessing operations according to their specific job position

- Monitoring their working hours, wage and shift schedule
- Reviewing various financial reports (the manager, admin and the economist)
- Reporting their overtime activity

The main operations that will be available to the administrator are as follows:

- CRUD functionalities related to all the employee accounts
- Viewing and Editing inventory, the list of employees, suppliers, products, orders and purchases
- Generating and Managing financial reports/statistics, payrolls and the list of workers
- Monitoring operations

3.2.2.3 Development Requirements

1) Client-Side Programming (Front-End)
Client-side indicates to everything that is displayed or takes place on end user device. This includes what the user sees, such as text, images, and the rest of the UI, along with any actions that an application performs within the user's browser. The technologies to be used in client-side are as follows:

- HTML (Hypertext Markup Language)
- CSS (Cascading Style Sheets)
- Bootstrap 4 will be used to maintain HTML and CSS
- JS (JavaScript)
    - Execute always on client environment to save a bandwidth and make execution process fast
    - Makes the web application more interactive. Including here buttons, hover-interactivity, menu functionality, animation, and other stapes of the modern web experience
    - Is supported by all modern browser

2) Server- Side Programming (Back-End)

- Programming Language to be used: PHP
- Database: MySQL database
- Server: APACHE

3.2.3 External Requirements

3.2.3.1 Regulatory Requirements

Regulations are responsible for impacting both functional and nonfunctional requirements legacy and new system, every business must be sure that the software they purchase satisfies all the relevant rules and regulations to avoid risk of serious

brand damage, costly penalties and lost reputation resulting from noncompliance. Regulatory compliance refers to the discipline and ensures that a software follows the laws enforced by the government based on the industry standards. Our system should be licensed by the “Drejtoria e Pergjithshme e Pronesise Industriale (DPPI)” so we can operate in Albania and to be certified as compliant.

- Personal data is information that could be used to identify an employee. Many emerging laws, particularly those dealing with privacy and personal data, require that businesses themselves comply and report on compliance and any breaches that might occur. We should ensure our customer that their and our employees personal data or information entered/ reports generated are safe and protected with our system, since we need those data for login purpose also for accounting and managerial purpose.
- One of the most important developments in this area is the General Data Protection Regulation (GDPR), designed to strengthen data protection for individuals within the European Union, since one of the main requirements and duties that EU has for Albania is to follow its rules and legislation. GDPR requires that data about individuals (such as "a name, a home address, a photo, an email address, bank details, posts on social networking websites, medical information, or a computer's IP address") be maintained on servers within the EU and not transferred out of it. It also requires that companies notify individuals of any data breaches, and mandates that companies have a data protection officer (DPO). Every security policy of the system will be in full agreement with the provisions pf Law No. 9887, dated 10.03.2008 “On the Protection of Personal Data”. The Online System that we provide requires data such as a name, an address, a phone number, salary details for the employees, suppliers and clients we should maintain this data on servers and not use them out of this server for any other purpose.

3.2.3.2 Ethical Requirements

1. All users accept full responsibility for their own work.
2. All interests of the administrator, manager and economist respect the public good.
3. The ultimate effect of the work of the users will be to the public good.
4. Any actual or potential danger to the users, the public or the environment, that they believe to be associated with the software will be disclosed to the appropriate persons or authorities.
5. Software will be fair in all its related statements and documents, its methods and tools.
6. Passwords, files and information that is confidential to the employee or confidential to others is ensured according to respective policies and procedures.
7. Every property of the client, employee or supplier is used only in ways properly authorized, and with the client’s, employee’s or supplier’s knowledge and consent. Every data to be used is ensured to be accurate and derived by ethical and lawful means.

8. Every confidential information gained in their professional work is kept private where such confidentiality is consistent with the public interest and consistent with the law.
9. An adequate testing, debugging and review of the documents and the software as a whole is ensured.
10. Documents to be endorsed include only those prepared under the supervision of the administrator or within the areas of competence of a specific employee and with which the administrator is in agreement.

3.2.3.3 Legislative Requirements

3.2.3.3.1 Accounting Requirements

General

1. System enables the economist and cashier to create invoices and receipts.
2. System enables a direct deposit of their employee's net into their debit cards.
3. System provides facilities to support the entire budget process, including budget preparation, approval, amendments, change history, monitoring and reporting.
4. System tracks phases and costs associated with jobs.

Customer invoices and sales orders

1. Update fields of information for a customer's order.
2. Offer different pricing levels to different customer types based on a criteria.
3. Store credit card information; receive and track credit card payments.
4. Enter payments during invoice entry.
5. Option to print invoice on paper.
6. Generate purchase orders from the sales order screen.
7. Make some items on an invoice taxable and others non-taxable. Calculate the tax amount based on the type of item taxable.

General Ledger

1. Step-by-step verification of transactions and activity within the accounting system.
2. Generate and edit checks and deposits, transactions; make adjustments. Make sure that reconciled balance equals the financial statements.
3. Set up ledger accounts and sub-accounts.

Customer Payments

1. Receive cash/credit card payments; track credit card payments.
2. Approve and process credit cards with integrated credit card processing.
3. Edit, delete payments; enter overpayments on account.

Inventory

1. Specification on each item how the calculation of the price will be done.
2. Transfer inventory items from one location/warehouse to another.
3. Take physical inventory counts to update the on hand quantities and adjust for accuracy.
4. Give inventory items optional names/IDs for easier lookup of name variations.
5. Use multiple units of measure for default, stocking, purchasing and selling.
6. Store a picture of inventory items in the system.
7. Track suppliers and orders per item.

Ordering Products

1. Manage shipment of orders and purchases of orders made by the business itself to its supppliers.
2. Track vendor partner number by detail line.
3. Receive purchase orders receipts.

3.2.4 Portability

The system should support new versions of the related browsers. The administrative and server technologies should be standard and supported by most platforms.
To develop our Gas Online Management system, we will use PHP language as our main language for the back-end and for the front-end we will use mostly HTML, CSS, JavaScript etc. We have decided to develop an online web application system. Our program will be available on any browser that has internet connection that can be accessed from any pc, laptop, mobile devices etc. Also it will operate the same despite of the operating system, since PHP is available in any platform. Later on we hope to develop a mobile application based on our web application format.

3.3 Domain Requirements

Our Online Management System when used by admin should be able to manage employees, finance reports, products, suppliers, orders, purchases, inventory and payrolls. The admin can create, edit and delete accounts for the employees, including the manager. Also he can edit, add or delete the list of products, clients, suppliers and inventory (the updates will be stored in the database). The economist and the manager of the Gas Station will have access as well as the admin for the finance reports and statistics, for the list of the employees, suppliers, orders, purchases and clients with some features being showed only to the manager/administrator. Other users such as cashier, janitor etc. will be able to see their salary and shifts also register the start/end time of their shift. This system will work as a manager for the station where everything will be recorded in order to make it easy for the owner and employees to see their progress and manage better and easier their business and their shifts (for the employees).

4. Software Design

4.1 User Scenarios

General Scenarios

1. **User tries to log in the system by filling the username and password boxes**

User opens the online system and is asked to enter his/her credentials, which are stored in the database. After having entered credentials, he/she takes the reCaptcha test and logs in the system. The first glance is on his/her main page where all necessary commands to him as a user are displayed, these may include different options and other commands in the center of the page.

2. **User fails to log in the system**

In the case where the user opens the online system and enters his/her credentials incorrectly or incomplete, the system displays “Log in failure. Please try again”. In this case the user will have to re-enter his credentials.

3. **User logs out of the system**

Log out option is available in any window opened from any user account. In case the user wants to log out he simply presses the button and a message “Logged out successfully” will come up. He/she is directed to log in page.

4. **User wants to change his/her password**

After the user logs in the system, to change the password he/she will have to fill in the form with the information required like current password, new password and confirm the new password. Then he has to save those changes and the new password is up. He/she will not be logged out from the system, but next time he/she will try to login he/she has to enter the new password saved. If he/she wants to cancel password change, he/she can press cancel and the information is not stored.

5. **User wants to reset password**

Any user that has problems with their password and cannot login in the system, they can reset their password through Forgot Password which will require their email address. A password reset email will be sent to their inbox and the URL provided in the email will help them provide and enter a new email. After password resetting, user is directed to login page where they have to enter the username and the new password to access their system account.

6. **User wants to record his shift and enter his/her working hours**

After the user (except admin and client) logs in, to enter his/her clock-in and out hours he has to go to his/her shift window. In this section the user clocks in by putting his/her clock-in hour, enters the date, clocks out by putting his/her clock-out hour and the number of hours worked that day and submits the information entered.

7. **User views his/her latest wage transaction or all transactions**

After the user (except admin and client) logs in, he/she can view the latest wage transaction in his/her wage window. The user will be able to view the amount

deposited to his/her account, the date and time of the transaction, the user will also be able to view all
previous transactions as well.

8. **User wants to record extra working hours**

After the user (except admin and client) logs in, he/she can enter extra working hours on his/her extra window. The user is able to enter the date, when he started and finished his extra hours, compensation per hour, hours worked, but also view previous reports of extra hours that he has completed in the past and the total compensation expected to receive. He/she will have the option to cancel or save the changes as well.

Admin Scenarios

1. **Admin logs in successfully by entering true username and password information**

Admin is directed to his main page which gives him access to the shop and to the accounts of all other users of the system, their documents and other data submitted, all these by only choosing the user's account he wants to view and the system directly sends him there.

2. **Admin adds a new user to the system by creating a new account**

Admin is logged in the system. He may add a new user in the system and a new user includes these types: manager, economist, cashier, janitor, driver, security, fuel attendant. He can also add and register a new supplier or client (client can open his account by himself as well). In each case, admin has to enter the role/position that the new user (or supplier/client) will have in the business, the contract beginning/ending dates and can enter all other contract details in a written box. All information he enters can be saved and stored in the database or he may cancel it and nothing is saved.

3. **Admin can view and edit users of the system**

Admin is logged in the system. Admin has access to the accounts of users except client and can edit any data related to any of them. Every change he makes can be saved and stored in the database or he may cancel it and nothing is saved.

4. **Admin can view all data related to the shop of the business**

Admin is logged in the system. Admin has access to the full list of products, which includes all data and specific information for each product available for sale; he has access to the recent inventory document generated from the economist as well as to all previous documents stored in the database. He can view all orders coming from clients and all purchases made from the business from its suppliers.

5. **Admin can view and edit financial reports, inventory, payrolls prepared by the economist**

Admin is logged in the system. Admin is able to not only view each of the financial reports, inventory and payrolls but also edit data in each of the documents prepared by the economist. Every change made may be saved or just canceled.

6. **Admin can view and edit the orders and purchases product list**

Admin is logged in the system. Admin has access to the orders list containing all product orders from clients and to the purchases list containing all products ordered by the business to its suppliers. He can edit both lists by entering new data or changing the existing ones. Changes made can be saved or canceled.

7. **Admin can view and edit the suppliers list**

Admin is logged in the system. Admin has access to the suppliers list containing all users added by the admin or manager under the role of a supplier. He can edit the list by entering new data or changing the existing ones. Changes made can be saved or canceled.

8. **Admin can add a new product now available for sale from the shop**

Admin is logged in the system. Admin can register a new product by its name or ID and by entering all details of the product: such as the category ID, the amount available for sale, its supplier ID and all contract details of the purchase, its price without VAT, the VAT to be applied, the selling price and points for that product (points a client can collect by purchasing one item of that product). All information entered can be saved and so it is stored in the database or canceled which means it is lost.

9. **Admin can enter a new product order in the purchases list that the business wants to purchase from its suppliers**

Admin is logged in the system. He can register a new order of any product needed and that the shop is short of. The system will require the details of the product (its ID or name, amount to be purchased, price and contract details) and its supplier's ID or name. Admin can either choose to save the information entered or cancel and so lose it.

10. **Admin can delete a product from the products list**

Admin is logged in the system. He can permanently delete a product that is part of the products list. By deleting the product, all details and other records related to the product entered in the particular database are lost.

11. **Admin can delete a supplier from the suppliers list**

Admin is logged in the system. He can permanently delete a supplier's name or ID from the suppliers list. By deleting the supplier's name or ID, all details and other records related to that supplier entered in the particular database are lost.

12. **Admin can delete any employee's account**

Admin is logged in the system. He can view any of the employee's accounts and beside editing them, he can also permanently delete them. The deleted account is not part of the system anymore. Any information related or generated by that account is deleted from the database

Manager Scenarios

1. **Manager logs in successfully by entering true username and password information**

Manager is directed to his main page which gives him access to the shop and to the accounts of all other employees of the business, their documents, data submitted or comments made by any user regarding their shift or job/role in general, all these by only choosing the user's account he wants to view and the system directly sends him there. Furthermore, from his main page, manager can choose to enter his shift, extra hours, can view wage transactions, can change his password or logout from the system.

2. **Manager adds a new user to the system by creating a new account**

Manager is logged in the system. He may add a new user in the system and a new user includes these types: economist, cashier, janitor, driver, security, fuel attendant. He can also add and register a new supplier or client (client can open his account by himself as well). In each case, manager has to enter the role/position that the new user (or supplier/client) will have in the business, the contract beginning/ending dates and can enter all other contract details in a written box. All information he enters can be saved and stored in the database or he may cancel it and everything is lost.

3. **Manager can view and edit users of the system**

Manager is logged in the system. Manager has access to the accounts of users except client and can edit any data related to any of them. Every change he makes can be saved and stored in the database or he may cancel it and nothing is saved.

4. **Manager can view all data related to the shop of the business**

Manager is logged in the system. Manager has access to the full list of products, which includes all data and specific information for each product available for sale; he has access to the recent inventory document generated from the economist as well as to all previous documents stored in the database. He can view all orders coming from clients and all purchases made from the business from its suppliers.

5. **Manager can view and edit financial reports, inventory, payrolls prepared by the economist**

Manager is logged in the system. Manager is able to not only view each of the financial reports, inventory and payrolls but also edit data in each of the documents prepared by the economist. Every change made may be saved or just canceled.

6. **Manager can view and edit the orders and purchases product list**

Manager is logged in the system. Manager has access to the orders list containing all product orders from clients and to the purchases list containing all products ordered by the business to its suppliers. He can edit both lists by entering new data or changing the existing ones. Changes made can be saved or canceled.

7. **Manager can view and edit the suppliers list**

Manager is logged in the system. Manager has access to the suppliers list containing all users added by the admin or manager under the role of a supplier. He can edit

the list by entering new data or changing the existing ones. Changes made can be saved or canceled.

8. **Manager can add a new product now available for sale from the shop**

Manager is logged in the system. Manager can register a new product by its name or ID and by entering all details of the product: such as the category ID, the amount available for sale, its supplier ID and all contract details of the purchase, its price without VAT, the VAT to be applied, the selling price and points for that product (points a client can collect by purchasing one item of that product). All information entered can be saved and so stored in the database or canceled which means it is lost.

9. **Manager can enter a new product order in the purchases list that the business wants to purchase from its suppliers**

Manager is logged in the system. He can register a new order of any product needed and that the shop is short of. The system will require the details of the product (its ID or name, amount to be purchased, price and contract details) and its supplier's ID or name. The new order created is saved to the orders list in case the manager chooses to save and not cancel it.

10. **Manager can delete a product from the products list**

Manager is logged in the system. He can permanently delete a product that is part of the products list. By deleting the product, all details and other records related to the product entered in the particular database are lost.

11. **Manager can delete a supplier from the suppliers list**

Manager is logged in the system. He can permanently delete a supplier's name or ID from the suppliers list. By deleting the supplier's name or ID, all details and other records related to that supplier entered in the particular database are lost.

12. **Manager views all comments submitted from each employee regarding their shift/job**

Manager is logged in the system. Manager can view new comments as well as the whole list of comments made from each employee. A new comment is submitted from each employee whenever they have a request or want to report something unusual happened during their shift. If the comment is saved from the employee, it is directly transferred to the comments section in the account of the manager.

13. **Manager reviews all clients' accounts**

Manager is logged in the system. Manager can view all clients' accounts and so have access to their list of product purchased and to the new orders they have submitted in the system.

Economist Scenarios

1. **Economist logs in successfully by entering his/her respective credentials, username and password**

Economist is directed to his/her main page which lets him/her access reports, inventory, list of products, orders, purchases, employees and also gives him/her permission to calculate payroll for each of the employees that access the system. The main page also provides other operations such as viewing wage, recording work time and so on.

2. **Economist creates new reports by choosing the type of financial statements required**

Economist is logged in the system. He/she may select one of the financial statements displayed such as Balance Sheet, Income Statement and Cash Flow Statement. For Balance Sheet he/she must enter assets, liabilities and owner's equity in order to calculate their total amount. For Income Statement economist must enter all the revenues and expenses to find the net income, meanwhile for the cash flow statement economist must enter incoming cash and cash outflow to calculate the cash balance. Economist can either save the new report in the database or cancel it.

3. **Economist views all the recorded reports**

Economist is logged in the system. He/she may select one of the financial statements displayed on the page and can view specific reports that are saved and stored previously in the database. The list of reports shows details like number of report, the report name and the date and time which the report is saved in the system. Economist's searching time is simplified by these details.

4. **Economist can manage the inventory by adding new inventories or editing the previously saved ones**

Economist is logged in the system. He/she enters the specific information such as inventory ID, product ID, category ID, description, unit price, quantity in stock, inventory value, quantity ordered, quantity purchased, and the date and time inventory is saved. Economist can either save the new inventory in the database or cancel it. Also he/she can edit the new inventory or the older ones which are recorded and stored in the database.

5. **Economist views all the inventory documents saved and stored in the database**

Economist is logged in the system. He/she may access the list of the inventories which displays specific information like number of inventory, inventory ID and the date and time in which inventory was recorded.

6. **Economist calculates payrolls for all of the employees which are saved in the system**

Economist is logged in the system. He/she must choose a specific worker and include the entire required information of the payroll like its code, the work hours of the employee, extra work hours, payment per hour, vacation days, full transaction, and the date and time in which that payroll is prepared. Economist can either save the payroll in the database or cancel it. Also he/she can edit the previously recorded payrolls that are stored.

7. **Economist views all the prepared payrolls saved on the database**

Economist is logged in the system. He/she can access a specific document or

observe the list of all payrolls which is displayed on the page. The list includes details like the number of payroll, payroll code and the date and time which each specific payroll is recorded.

8. **Economist adds new products in the system**

Economist is logged in. He/she can register a new product by entering its specific information such number and name of product, product ID, category ID, the amount available of this product, its supplier ID, its price with and without VAT, the VAT, the selling price and the points which will be further collected by the client and calculated in order to discount the price of products.

9. **Economist accesses the list of all products which are recorded**

Economist is logged in the system. He/she can look at a product and its specific information which includes the above-mentioned details.

10. **Economist manages all orders that are made by the client**

Economist is logged in the system. He/she can access the order's details which includes the order number, product ID, customer ID, the amount ordered, price with and without VAT, the selling price, cash collected, and accounts receivable. Economist is also able to view the date and time which a specific product is ordered and/or shipped. He/she can also choose to edit any order which is displayed on the list. Economist can either save the order's information in the database or cancel it.

11. **Economist adds a new client order to the orders list**

Economist is logged in the system. Economist adds a new order to the orders list based on the new receipts registered from the cashier and fuel attendant in their accounts. This happens when the client himself did not make an online order or does not have an account at all.

12. **Economist manages all the purchases made by the business**

Economist is logged in the system. He/she can access the entire information related to the purchases made such as the number of purchase, product ID, category ID, the ID of the supplier, and the amount of the purchased product, the buying price, cash paid and accounts payable. He/she can edit the details of any purchase that may be displayed on the list and also access additional data like the date and time a product is ordered to the suppliers and/or purchased. Economist can save the purchases' information or cancel it.

13. **Economist can enter a new product order in the purchases list that the business wants to purchase from its suppliers**

Economist is logged in the system. He can register a new order of any product needed and that the shop is short of. The system will require the details of the product (its ID or name, amount to be purchased, price and contract details) and its supplier's ID or name. The new order created is saved to the orders list in case the manager chooses to save and not cancel it.

14. **Economist accesses the list of employees' accounts created by the admin or manager**

Economist is logged in the system. He/she views cashier, driver, fuel attendant, janitor, security and the employees to be registered in the future. Economist can

view specific details for each of the employees; these details are required for the preparation of different documents.

Cashier Scenarios

1.Cashier checks the full list of products available for sale
Cashier is logged in the system. He/she has access to the list of products currently being sold by the business. The list includes all products and their characteristics: product ID, category ID, price, selling price, price with tax, quantity and prices/points/discounts per product.

2.Cashier views incoming product orders from clients
Cashier is logged in the system. Cashier has access only to product orders made from clients of the business. Based on the orders list, cashier generates receipts by filling in the information taken from each order like the amount required, product required and then fills the price, price with/without VAT, points for that product and price after discount.

3.Cashier registers a new receipt
Cashier is logged in the system. He/she can generate a new receipt if a new order comes in from a client by filling the information needed in the receipt format: the quantity, product ID, description, price and total price to be paid from the client without and after the VAT is applied. System checks for product points and discount. System will check for errors while these information is submitted from cashier, for example if the quantity written by the cashier is higher than the one available in shop it will not accept the value. The new receipt with all the information can be saved in the database, canceled or edited. Cashier can view all receipts made from him listed by the receipt number and date-time.

Fuel attendant Scenarios

1. Fuel Attendant checks products available for sale
The fuel attendant is logged in the system. He has access to the list of products including their details: product id, category id, amount, price, vat, price with vat, selling price and points/discounts per product.

2.Fuel attendant views incoming fuel orders from clients
Fuel attendant is logged in the system. Fuel attendant has access only to product orders made from clients of the business. Based on the orders list, he generates receipts by filling in the information taken from each order like the amount required, product required and then fills the price, price with/without VAT, points for that product and price after discount.

3. Fuel Attendant registers a new receipt
Fuel attendant is logged in the system. He can generate a receipt for every client by including price of the product/fuel, amount and total price to be paid from the client

with and without VAT applied. System checks for product points and discount. System will check for errors while these information is submitted from the fuel attendant, for example if the quantity written by him is higher than the one available in shop it will not accept the value. The new receipt can be saved in the database, edited or canceled. Fuel attendant can view the whole list of receipts generated by him through receipt number or date-time filters.

Janitor/security Scenarios

1. Janitor/Security wants to make a new comment regarding his/her shift/job
Janitor/security is logged in the system. As well as the other employees (fuel attendant, driver, cashier), they will be able to enter in the comment section of their account anything unusual during the shift or any requests for the job. For every new comment submitted, they will have to write the topic of the comment, date-time, and the text of the comment/request. They can view all their comments made up to that moment.

Driver Scenarios

1. Driver views orders made by clients that have to be shipped from him
Driver logs in. He views all clients' orders and only the details of orders that are necessary for him like: order ID, product ID, Customer Id, amount, location. After every order he completes he can check yes at the shipped box and enter the date-time as well, or no if not shipped yet. To save changes made, he has to save them before logging out or cancel them if not to be saved.

2.Driver views product purchases made by him and brought into the business
Driver logs in. He views all contract purchases made by the business and only the details of the purchases that are necessary for him like: purchase Id, product Id, supplier Id, amount, location. After every purchase he completes he can check yes at the purchased box and enter date-time as well, or no if not purchased yet. To save changes made, he has to save them before logging out or cancel them if not to be saved.

Client Scenarios

1. **Client logs in successfully by entering his/her respective credentials, username and password**

Client is directed to his/her main page which lets him/her access the products that he/she has purchased and also order new ones. Client can view the overall points which are accumulated from his/her purchased products.

2. **Client views the products purchased and the accumulated points**

Client is logged in the system. He/she is able to view the list of all the products that he/she has bought and the specific data for each product such as the product number and ID, the date the product was purchased, its amount and price. Client can also view the total amount of points collected by the overall purchases.

3. **Clients orders new products from the business**

Client is able to choose one or more particular products and view the details of his/her order which includes the ID of the product, its price, the amount ordered, the total points the client has collected, the discount obtained from the conversion of these points, total price before and after the discount and the price to be paid. Client may choose to save or not to save the order so he can easily cancel it.

4. **A new client registers in the system**

In the main page of the system anyone who wants to become an online client of the business can open an account and Register Account gives him/her the opportunity to become part of the system. By opening an account, providing a username and password they can perform any operation that the client has in the system.

4.2 Use Cases Extended

Name **UC_01**	**Change password**
Summary	Actor wants to change password for security reasons.
Actor	Admin, manager, economist, cashier, janitor/security, driver, fuel attendant, client
Description	Actor opens password tab of his main page and enters his current password, new password and confirms new password.
Precondition	The actor must know his current password and his new passwords should match.
Alternative	The actor presses the “save” button to save the changes or the “cancel” button to cancel the changes made .
Post Condition	Password is changed if changes were saved.

Name **UC_02**	**Reset password**
Summary	Actor wants to reset password.

Actor	Admin, manager, economist, cashier, janitor/security, driver, fuel attendant, client
Description	Actor presses Forgot Password in the login page and enters his email address. A new email will be sent to him with a URL where he can enter a new password.
Precondition	The actor must have a valid email address.
Alternative	The email is not sent to the actor's account. He must try again.
Post Condition	Changes are saved in the database and the actor has a new password.

Name **UC_03**	**Register account**
Summary	Actor opens a new account.
Actor	A new client
Description	Actor is able to open a new account and be part of the system by providing an email, username and password.
Precondition	Email and username should be unique and not registered in the database before.
Alternative	No alternatives.
Post Condition	A new client account is created and its data are saved in the database.

Name **UC_04**	**Start shift**
Summary	Actor enters his clock-in/out hours.
Actor	Manager, economist, cashier, janitor/security, driver, fuel attendant
Description	Actors are able to report the shift through the form displayed in the "Shift" page containing the clock-in, clock-out sections. In the clock-in section the actor enters the date and the starting hour. In the clock-out section the actor enters the date, ending hour and the number of working hours.
Precondition	Actors must be logged in and should have filled all the necessary fields firstly.
Alternative	The changes are not saved.
Post Condition	Shift is reported.

Name **UC_05**	**View wage**
Summary	Actors are able to view wage
Actor	Manager, economist, cashier, janitor/security, driver, fuel attendant
Description	Actors can open the “View wage” tab and see the latest transactions or all of them in their accounts along with the date and time they have been made.
Precondition	Actors must be logged in and should have been employed for at least one month.
Alternative	No information will be displayed .
Post Condition	Wage transactions are displayed.

Name **UC_06**	**Extra hours**
Summary	Actors report their extra hours.
Actor	Manager, economist, cashier, janitor/security, driver, fuel attendant
Description	Actors are able to write the date, starting/ending hour, compensation/ hour, hours worked. They can view all extra hours along with the full compensation.
Precondition	The actors must be logged in first.
Alternative	Changes will not be stored.
Post Condition	Extra hours are entered and submitted in the database.

Name **UC_07.1**	**New account**
Summary	Actors can create a new account.
Actor	Admin, manager
Description	Actors can create a new account either for a new employee, supplier or for a client by entering the role of the user, contract beginning/ending date and contract details. If they press save, the account is created.
Precondition	Actors must be logged in.
Alternative	No alternatives.
Post condition	A new account is created and its information is stored in database.

Name **UC_07.2**	**View users**
Summary	Actors can see all users: employees, suppliers, clients and check their

	information.
Actor	Admin, manager
Description	Actors can see the list of all users of the system, select any of them and be redirected to the user's account and check all documents or information submitted by each user.
Precondition	Actors must be logged in.
Alternative	No alternatives.
Post condition	All documents and information from each user 's account is shown and viewed from database where they are stored.

Name **UC_07.2.1**	**Edit users**
Summary	Actors can edit any document or information entered by users.
Actor	Admin, manager
Description	Actors can edit any document or information each user has submitted in his/her account, by either saving the changes or canceling it.
Precondition	Actors must be logged in.
Alternative	Each user can update his/her account on his/her own.
Post condition	Every change made is stored in the database if actors click save or lost if they click cancel.

Name **UC_07.2.2**	**Delete user**
Summary	Actor can delete a user from the system.
Actor	Admin
Description	Actor clicks on edit users, and then delete to permanently delete a user's account from the system.
Precondition	Actor must be logged in. User must be in the system's database.
Alternative	User is not deleted because of a database error.
Post condition	The account in appropriate database is deleted.

Name **UC_07.3**	**View products**
Summary	Actors can view the whole list of

	products.
Actor	Admin, manager, economist, cashier, fuel attendant, client
Description	Actors have access to the list of products and to the amount, supplier, price and other details for each product available for sale. Client sees only the name of the product and its price/points.
Precondition	Actors must be logged in. At least one product has been added to the products list.
Alternative	No product is shown in the list.
Post condition	No post condition.

Name **UC_07.3.1**	**Edit products**
Summary	Actors edit a product registered.
Actor	Admin, manager, economist
Description	Actors click edit product and they can edit: Product ID/name, category ID, amount, supplier, contact details, price, VAT, selling price, points/product.
Precondition	Actors must be logged in. The product must be registered.
Alternative	Changes are saved if pressed save, canceled if pressed cancel.
Post condition	Any change saved is stored in the database.

Name **UC_07.3.2**	**Add a new product**
Summary	Actors register a product in the products list.
Actor	Admin, manager, economist
Description	Actor clicks “Products” on the main page or navigation bar and is redirected to the Products page. The list of the products is initially displayed for the actor to view. He/she clicks “New Product” button and adds a new product.
Precondition	Actors must be logged in. The ID/name of the new product should be unique and not registered before.
Alternative	The product is added if clicked “Save” or canceled if clicked “Cancel”.
Post condition	The new product is added to the database of the products available for sale from the business.

Name **UC_07.3.3**	**Delete product**
Summary	Actor can delete a product from the product' list.
Actor	Admin, Manager
Description	Actor clicks on edit products, and then delete to permanently delete a user's account from the system.
Precondition	Actor must be logged in. Product must be in the system's database.
Alternative	Product is not deleted because of a database error.
Post condition	Product in appropriate database is deleted.

Name **UC_07.4**	**View Inventory**
Summary	Actors can view all of the inventories displayed in a list.
Actor	Admin, manager, economist
Description	Actor clicks "Inventory" on the main page or navigation bar and is redirected to the Inventory page. Actor clicks "View all", the list of all recorded inventories is displayed and he/she selects the one he prefers.
Precondition	Actors must be logged in; they must navigate through the options and at least one inventory must have been created by the economist.
Alternative	Actor can choose to either view or edit a particular inventory displayed in the list, by clicking the "Edit" button.
Post condition	No post condition.

Name **UC_07.4.1**	**Manage inventory**
Summary	Actors manage details of the inventory document.
Actor	Admin, manager, economist
Description	Actors can edit features of the inventory: inventory ID, product ID, category ID, description, unit price, quantity in stock, inventory value, quantity ordered and purchased, date-time of the inventory; or create a new inventory document.

Precondition	Actors must be logged in. An inventory document must have been created from the economist.
Alternative	Actors can either save a new inventory by clicking the “Save” button. Cancel it by clicking the “Cancel” button or edit by clicking the “Edit” button.
Post condition	Any change saved is stored in the database.

Name **UC_07.4.2**	**Create inventory**
Summary	Add a new inventory document.
Actor	Economist
Description	Economist clicks new inventory and he is able to create a new inventory document by filling all its details.
Precondition	Economist must be logged in.
Alternative	Economist can either save it through “Save” or cancel through “Cancel”.
Post condition	A new inventory is created if changes were saved.

Name **UC_07.5**	**View orders**
Summary	Actors view all orders made from the clients to the business.
Actor	Admin, manager, economist, cashier/fuel attendant
Description	Actor clicks “Orders” on the main page or navigation bar and is redirected to the Orders page. The list of the orders is displayed for the actor to view.
Precondition	Actors must be logged in. An order from a client must be entered before.
Alternative	No alternatives.
Post condition	No post condition.

Name **UC_07.5.1**	**Edit orders**
Summary	Actors can edit orders made from clients.
Actor	Admin, manager, economist
Description	Actors can edit the details of a client’s order: order number, product ID, customer ID, amount, price, price with VAT, selling price, cash collected, accounts receivable, date-time

	ordered/shipped. Changes can be saved or canceled through save and cancel buttons.
Precondition	Actors must be logged in. Orders must have been collected before and be part of Orders List.
Alternative	Client can edit his order.
Post condition	Any change saved is stored in the database.

Name **UC_07.5.2**	**Add a client order**
Summary	Economist adds a client's order to the system.
Actor	Economist
Description	Economist creates a new client order with data take from a new receipt registered from cashier or fuel attendant.
Precondition	Economist must be logged in. A new receipt is registered from the cashier/fuel attendant.
Alternative	Client can open an account in the system and order online.
Post condition	The client's order is added to the orders list.

Name **UC_07.6**	**View purchases**
Summary	Actors view all orders completed and purchased from their suppliers.
Actor	Admin, manager, economist
Description	Actor clicks "Purchases" on the main page or navigation bar and is redirected to the Purchases page. Actors can view all purchases made and their details: purchase number, product ID, category ID, supplier ID, amount, buying price, Cash paid, accounts payable, date ordered and purchased.
Precondition	Actors must be logged in. An order of the product must be done before from the business to the supplier to then receive a purchase.
Alternative	No alternatives.
Post condition	No post condition.

Name **UC_07.6.1**	**Create a new order for purchase**
Summary	Actors fill a new order request to their suppliers.
Actor	Admin, manager, economist
Description	Actors submit a new product order by entering: product ID/name, supplier ID, amount, price and contract details. They can save the order template or cancel it.
Precondition	Actors must be logged in.
Alternative	Actor can either save a new purchase by clicking “Save” button, cancel by clicking “Cancel” button.
Post condition	The new order is stored in the “All orders” database of the system.

Name **UC_07.6.2**	**Manage Purchases**
Summary	Actors can manage all purchases made by the business
Actor	Admin, manager, economist
Description	Actor clicks “Purchases” on the main page or navigation bar and is redirected to the Purchases page. The list of the entire purchases made is initially displayed for the economist to view. He/she clicks “Edit” to edit purchases on the list.
Precondition	Actors must be logged, in he/she must have navigated through the options and must have saved the old purchases in the database.
Alternative	Actors can either save the changes by clicking “Save” button, or cancel it by clicking “Cancel” button.
Post Condition	Economist has managed older purchases.

Name **UC_07.6.3**	**Add purchase**
Summary	Actors add a new order that has been purchased from the business suppliers.
Actor	Admin, manager, economist
Description	Actors click Add Purchase after opening the Purchases list and enter all the purchase’ details.
Precondition	Actors must be logged in.
Alternative	The new purchase can be saved through Save or canceled through

	Cancel.
Post condition	A new purchase is added to the purchase list.

Name **UC_07.7**	**View comments**
Summary	Actor can view comments section.
Actor	Manager
Description	Actor views all comments made from employees on their account's comment section and the details: number, date-time, topic of the comment, and the employee who submitted the comment.
Precondition	Actor must be logged in. A comment should be submitted from any of the employees in their accounts.
Alternative	Actor opens the full user's account and sees the comment submitted from him/her in the comment section of his/her account.
Post condition	No post condition.

Name **UC_07.8**	**View Reports**
Summary	The economist can view all of the reports that are displayed in the list
Actor	Economist, admin, manager
Description	Actors click "Reports" on the main page or navigation bar and chooses one category of the three financial statements displayed. He/she is redirected to the respective page and then clicks "View All". The list of all recorded reports is shown.
Precondition	Actors must be logged in. At least one report has been created and saved from the economist.
Alternative	-
Post Condition	Actors can edit the reports they view.

Name **UC_07.8.1**	**Create Reports**
Summary	The economist can create specific reports by choosing the type of report required.
Actor	Economist
Description	Economist clicks "Reports" on the main page or navigation bar and selects the type of financial statements displayed

	(“Balance Sheet”,”Income Statement” or “Cash Flow Statement”). He/she is redirected to the respective chosen page. Economist clicks “New” and then creates the new report.
Precondition	Economist must be logged in and all of the employee’s necessary data must be saved beforehand.
Alternative	After creating the new document, Economist can choose either to save it by clicking the “Save” button, or not saving it by clicking the “Cancel” button.
Post Condition	Economist has created a new report which is saved on the database.

Name **UC_07.8.2**	**Edit Reports**
Summary	Actors edit data of reports.
Actor	Admin, manager, economist
Description	Actors choose View Reports and then click Edit to edit information entered in each of the reports created by the economist.
Precondition	Actors must be logged in. Reports should have been created and saved in order to edit.
Alternative	Edits made can be saved through Save or canceled through Cancel.
Post Condition	Report has been edited and changes are saved in database.

Name **UC_07.9**	**Prepare Payrolls**
Summary	Economist calculates the payroll for all of the employees.
Actor	Economist
Description	Economist clicks “Payrolls” on the main page or navigation bar and is redirected to the Payrolls page. Economist clicks “New”, selects the worker, fills the required data and creates the new payroll.
Precondition	Economist must be logged in and all of the employee’s necessary data must be saved beforehand.
Alternative	After creating the new document, Economist can choose either to save it by clicking the “Save” button, not saving it by clicking the “Cancel” button or

	editing it by clicking the “Edit” button.
Post Condition	Economist has created a new payroll which is saved on the database.

Name **UC_07.9.1**	**View Payrolls**
Summary	Actors can view all the payrolls that are saved and shown in the list.
Actor	Economist, admin, manager
Description	Actors click “Payrolls” on the main page or navigation bar and is redirected to the Payrolls page. Then he/she clicks “View All” , the list of all payrolls is displayed and economist can s
Precondition	Actors must be logged in; he/she must have navigated through the options payrolls must have been saved.
Alternative	Actors can either choose to simply view the chosen payroll or edit it by clicking the “Edit” button.
Post Condition	Actors have viewed the saved and stored payrolls.

Name **UC_07.9.2**	**Edit Payrolls**
Summary	Actors can edit all the payrolls that are saved.
Actor	Economist, admin, manager
Description	Actors click “Payrolls” on the main page or navigation bar and is redirected to the Payrolls page. Then he/she clicks “Edit” to edit data entered for each payroll.
Precondition	Actors must be logged in. payrolls must have been created from the economist.
Alternative	Changes made can be saved through Save or canceled through Cancel.
Post Condition	The report has been edited.

Name **UC_07.10**	**View Employees**
Summary	Economist accesses the list of employees accounts.
Actor	Economist
Description	Economist clicks “Employees” on the main page or navigation bar and is redirected to the Employees page. He/she clicks one of the employee displayed that he/she wants to access.

	Economist is redirected to the respective chosen employee page.
Precondition	Economist must be logged in he/she must have navigated through the options.
Alternative	Economist can either choose “Cashier”, “Driver”, “Fuel Attendant”, “Janitor”, or “Security”.
Post Condition	Economist has accessed the employees’ accounts.

Name **UC_07.11**	**View clients**
Summary	Actor views clients’ activity in the system.
Actor	Manager
Description	Manager is able to view all the products purchased by users through their online accounts and the new incoming orders they have made.
Precondition	Manager must be logged in. at least a client is registered in the system and has made at least one order or purchase.
Alternative	Nothing is shown.
Post Condition	Activity of clients is shown.

Name **UC_08.1**	**New product receipt**
Summary	Cashier can register a new receipt.
Actor	Cashier
Description	Cashier presses new receipt and generates a new one by filling the amount, product to be sold, description, price with/without VAT, points/product, price after discount.
Precondition	Cashier must be logged in and an order has to be registered; amount of product in the receipt should be equal or less than amount available in shop.
Alternative	Cashier can either save by pressing save, cancel by pressing cancel or edit it.
Post Condition	Receipt is stored in the database and added to the cashier’s all receipts.

Name **UC_08.2**	**New fuel receipt**
Summary	Fuel attendant can register a new

	receipt.
Actor	Fuel attendant
Description	Fuel attendant presses new receipt and generates a new one by filling the amount, fuel to be sold, price with/without VAT, points/fuel, price after discount.
Precondition	Fuel attendant must be logged in and an order has to be registered; amount of fuel in the receipt must be less or equal to the amount available.
Alternative	Fuel attendant can either save by pressing save, cancel by pressing cancel or edit it.
Post Condition	Receipt is stored in the database and added to the fuel attendant's all receipts.

Name **UC_08.3**	**View receipts**
Summary	Actors can check all receipts made by them.
Actor	Fuel attendant, Cashier, Economist
Description	Actors are able to check all receipts by clicking view all receipts. A list of all receipts generated will be displayed listed by their number and date-time.
Precondition	Actors must be logged in and at least a receipt must have been registered.
Alternative	-
Post Condition	-

Name **UC_09**	**Print document**
Summary	Actors can print documents created by them or that they have access to.
Actor	Admin, manager, economist, cashier, fuel attendant
Description	Actors have the ability to print any new or existing document in the system created or accessible by them through Print operation present in each of the document's windows.
Precondition	Actors must be logged in. A document should exist or be created.
Alternative	Document cannot be printed due to account restrictions or database problems.

Post Condition	Document is printed.

Name **UC_10**	**Make Comments**
Summary	Actors can report any event/request.
Actor	Cashier, janitor/security, driver, fuel attendant
Description	Actors comment anything unusual during the shift or any requests for the job. There will be a topic to be filled, date-time and a box to write the comment/request. Comment is saved if pressed save and canceled if pressed cancel. They can view all comments made up to that moment.
Precondition	The actors must be logged in first.
Alternative	Comments will not be saved.
Post Condition	Comments are stored and reported to the manager.

Name **UC_11.1**	**Driver views Orders**
Summary	Actor can view and mark orders.
Actor	Driver
Description	Actor can view and some of the features of clients' orders as: order number, order id, product id, customer id, amount, location of shipment, shipment condition that is marked yes or no by the actor and shipment date as well.
Precondition	Actor must be logged in first. At least a client' order has been registered from the business.
Alternative	Orders cannot be shown or edited.
Post condition	Changes made are saved in the database and order is edited.

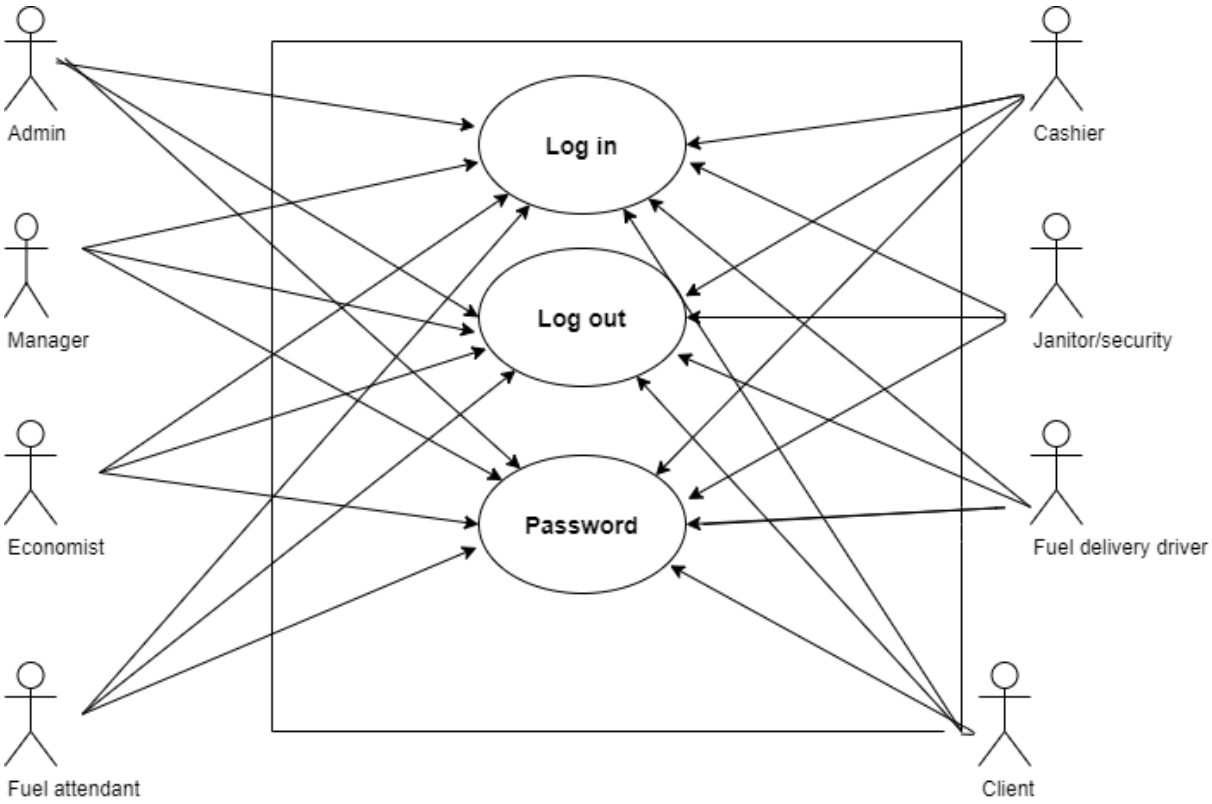
Name **UC_11.2**	**Driver views purchases**
Summary	Actor can report purchases brought into the business and mark them.
Actor	Driver
Description	Actor views purchases list and only some of their features: purchase Id, product Id, supplier Id, amount, location, purchase condition that is marked yes or no by the actor and purchase date as well.

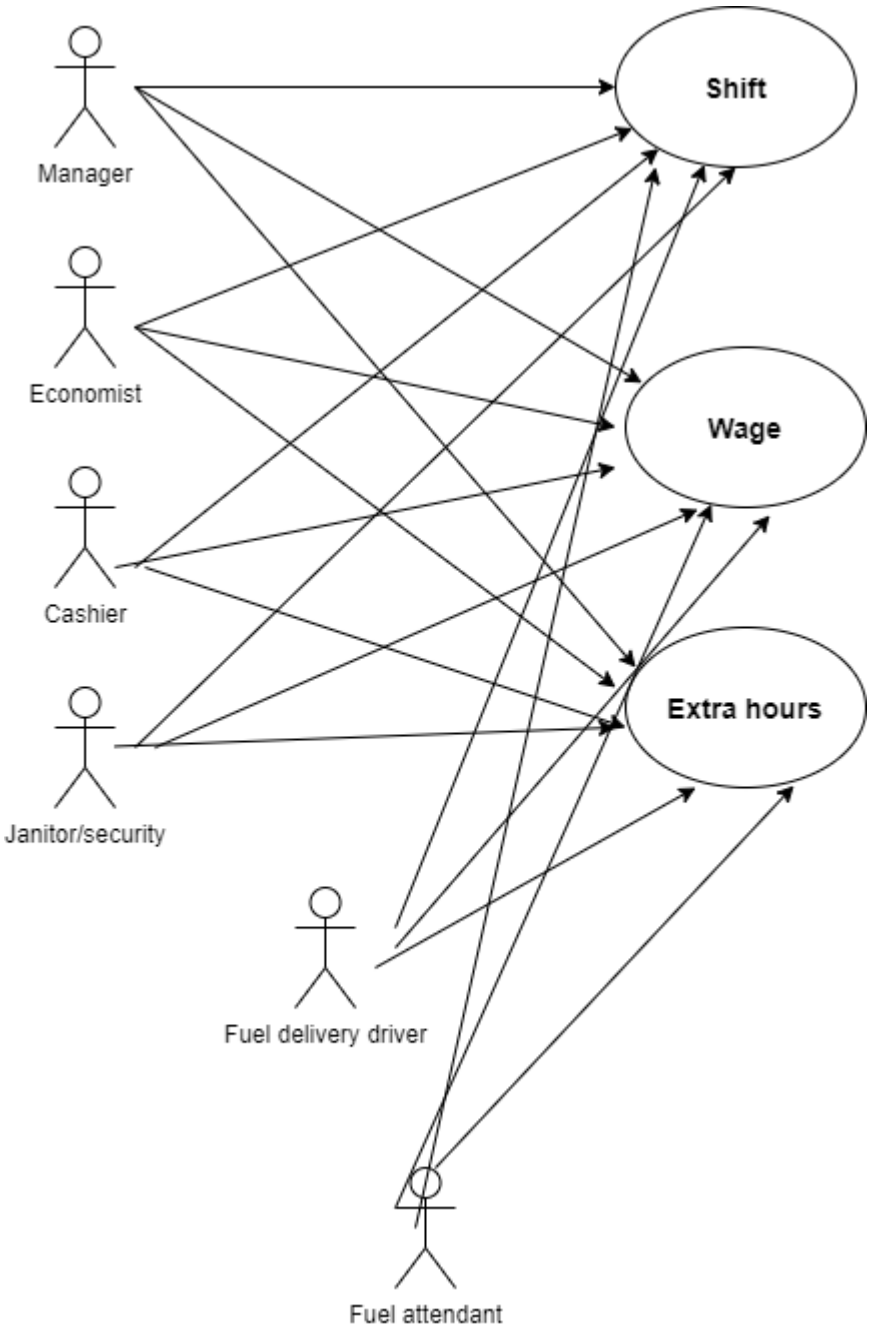
Precondition	Actor must be logged in and at least an order from the business must have been made.
Alternative	Purchases cannot be marked.
Post Condition	Edits are saved in the database.

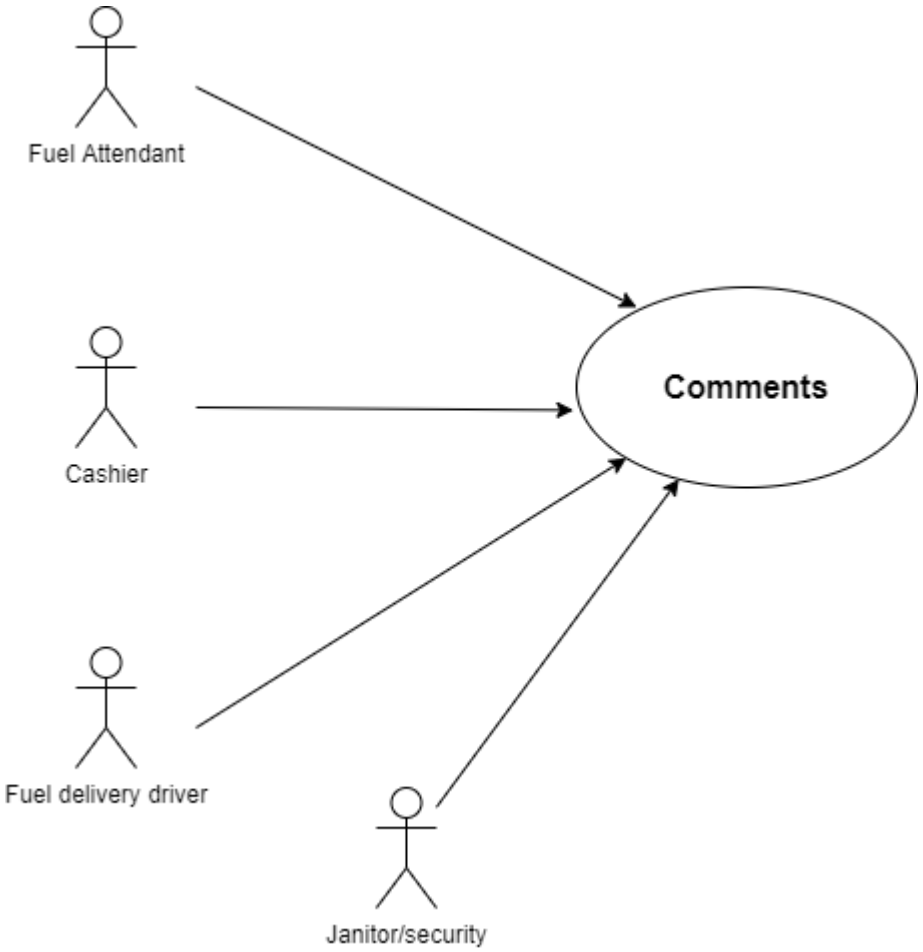
Name **UC_12.1**	**View Products/Points**
Summary	Client can view the list of products purchased and the accumulated points.
Actor	Client
Description	Client clicks “My Products” on the main page or navigation bar and is redirected to the “My Products” page. The list of purchased products and the total points collected are displayed on the page.
Precondition	Client must be logged in; he/she must have navigated through the options.
Alternative	-
Post Condition	Client has viewed his/her list of purchased products and total points collected.

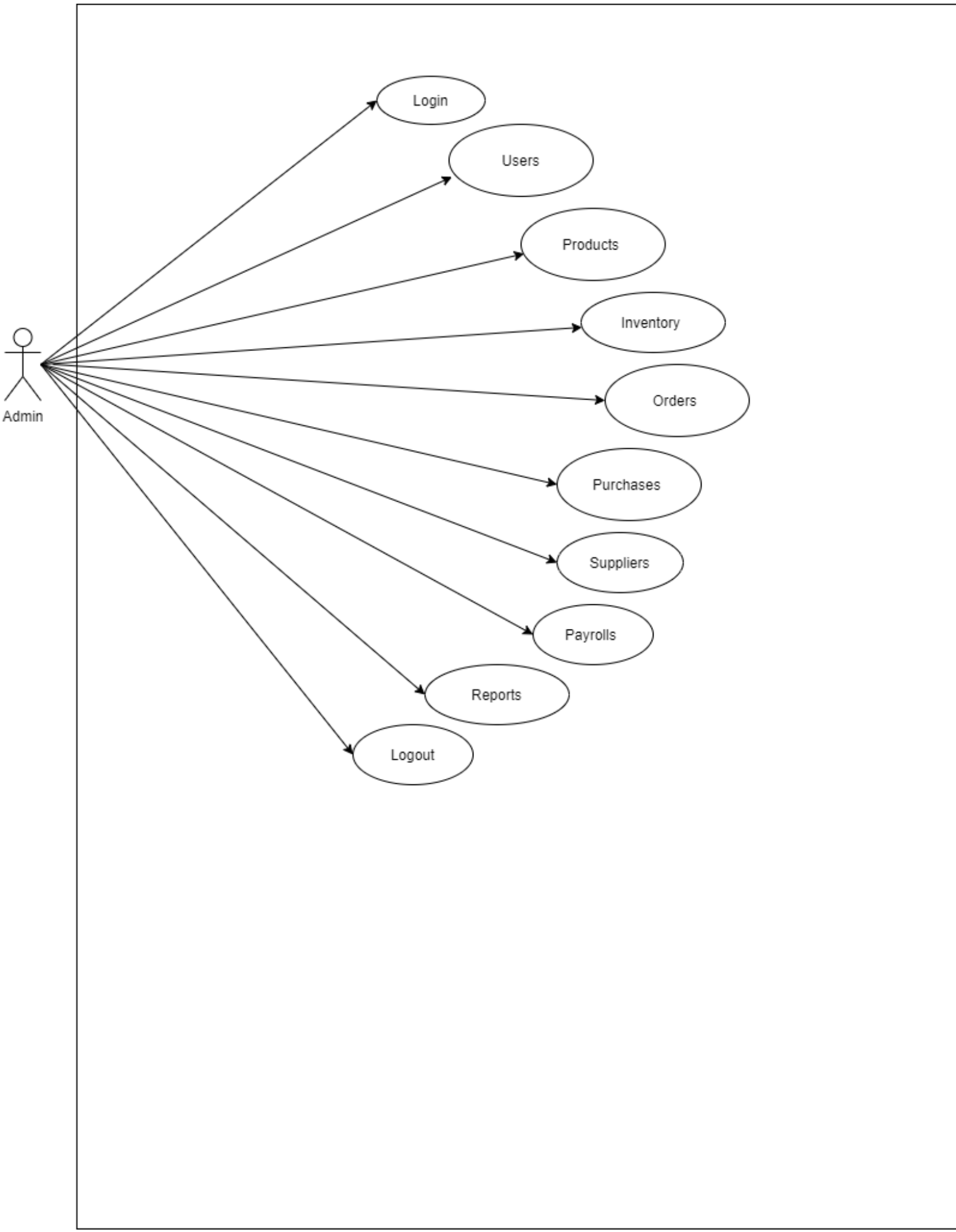
Name **UC_12.2**	**Order New Products**
Summary	Client can order one or more new products
Actor	Client
Description	Client clicks “New Order” on the main page or navigation bar and is redirected to the “New Order” page. He/she clicks “Choose” and chooses the product he/she prefers from the dropdown list.
Precondition	Client must be logged in he/she must have navigated through the options.
Alternative	Client can either order the product by clicking “Order” or cancel his/her purchase by clicking “Cancel”
Post Condition	Client has ordered a new product.

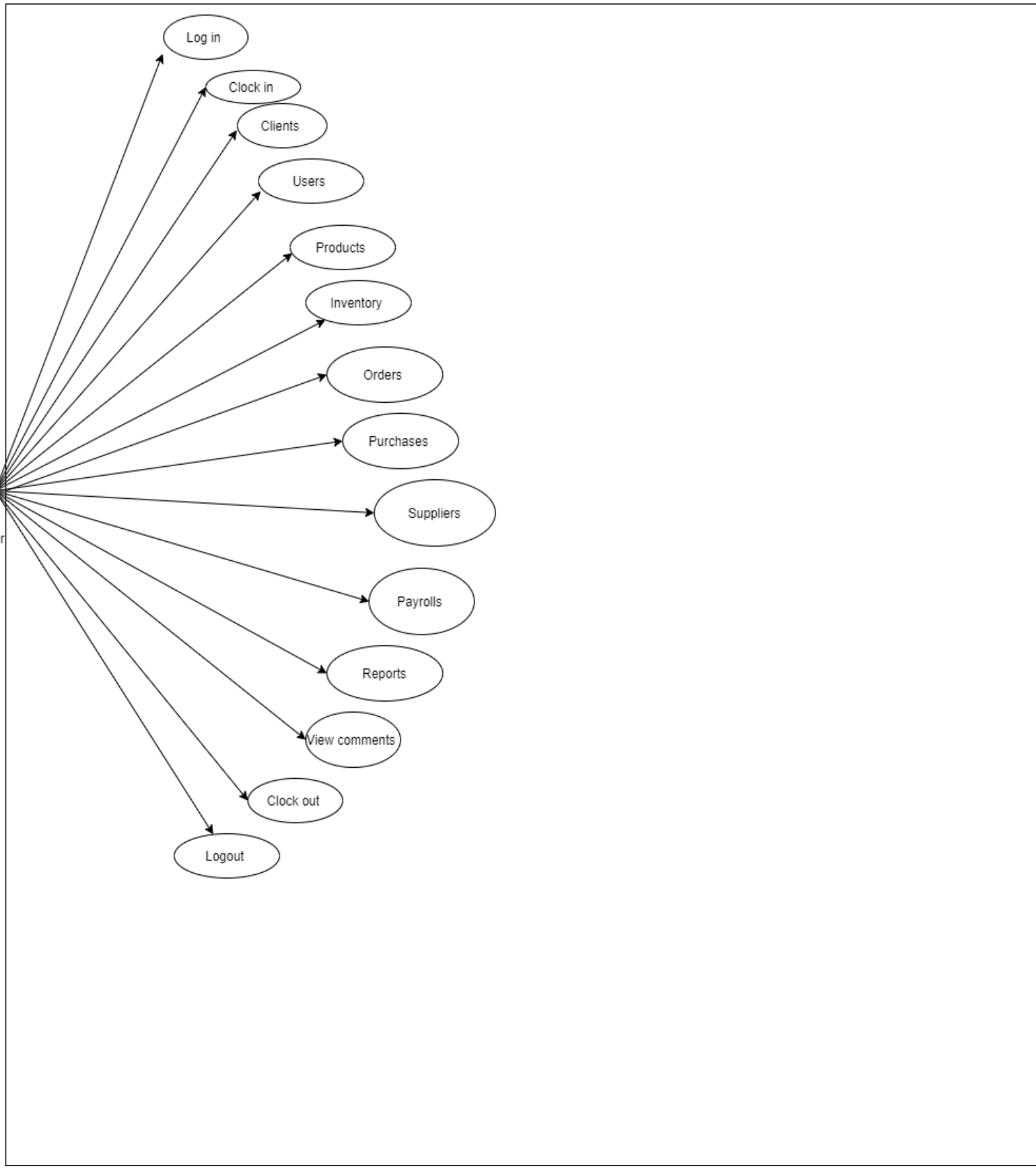
4.3 Use cases

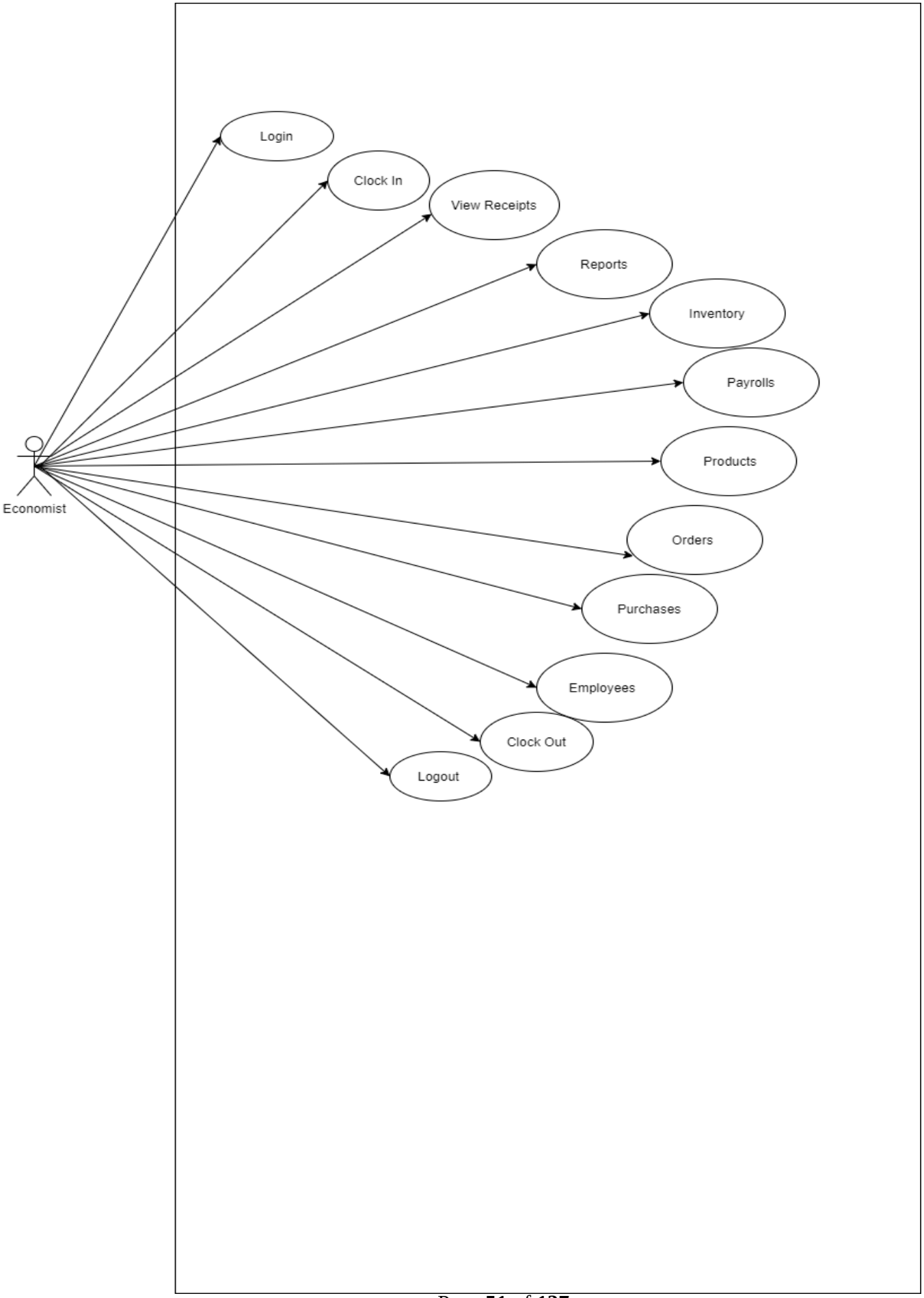

Admin
Manager
Economist
Fuel attendant
Log in
Log out
Password
Cashier
Janitor/security
Fuel delivery driver
Client

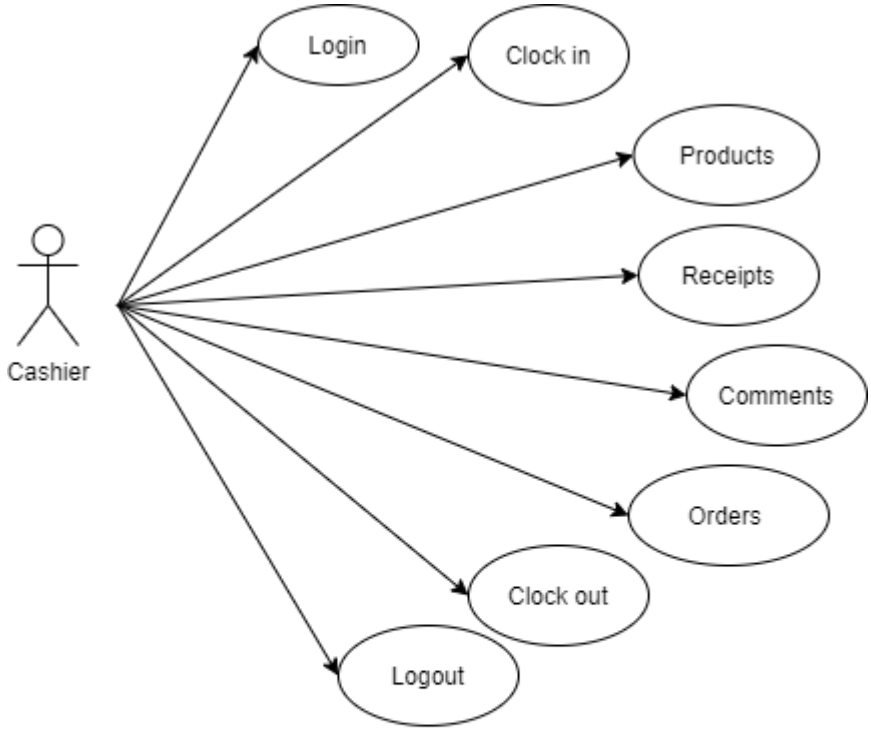

Shift
Manager
Economist
Wage
Cashier
Extra hours
Janitor/security
Fuel delivery driver
Fuel attendant

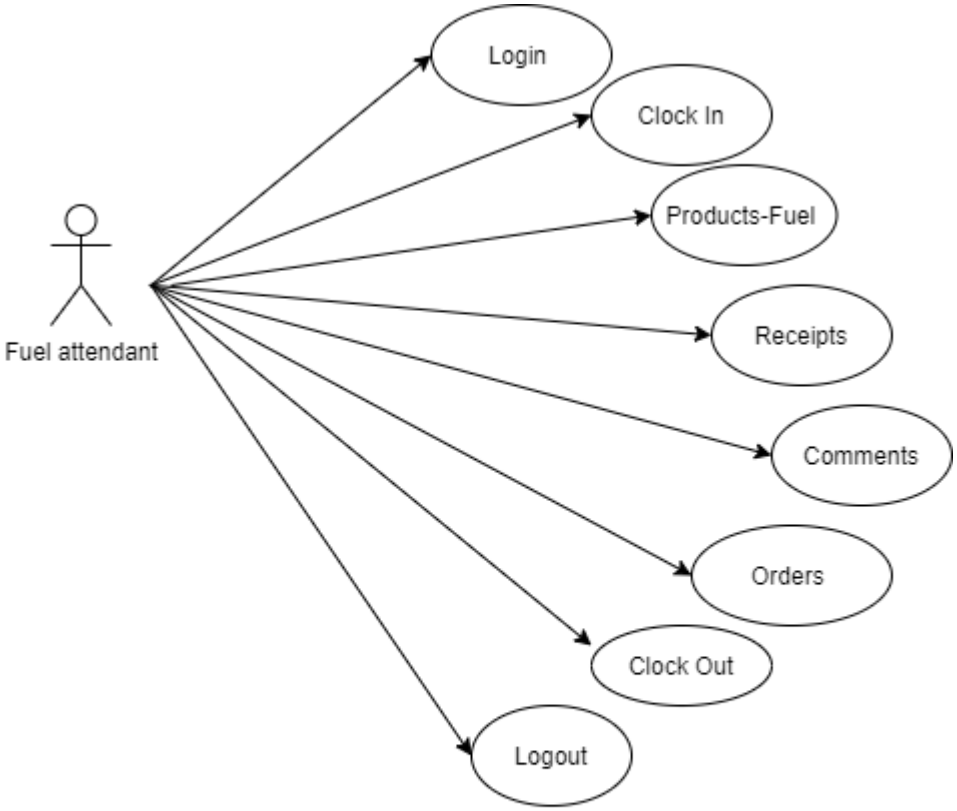

Fuel Attendant
Cashier
Fuel delivery driver
Janitor/security
Comments

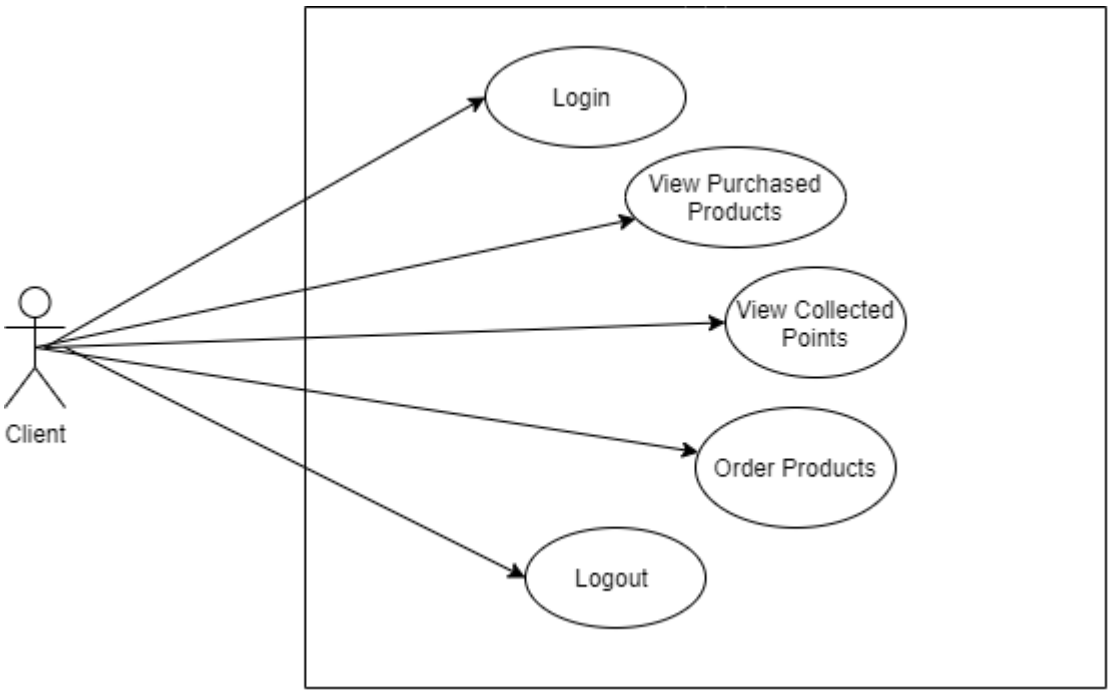

Login
Users
Products
Inventory
Orders
Purchases
Suppliers
Payrolls
Reports
Logout
Admin

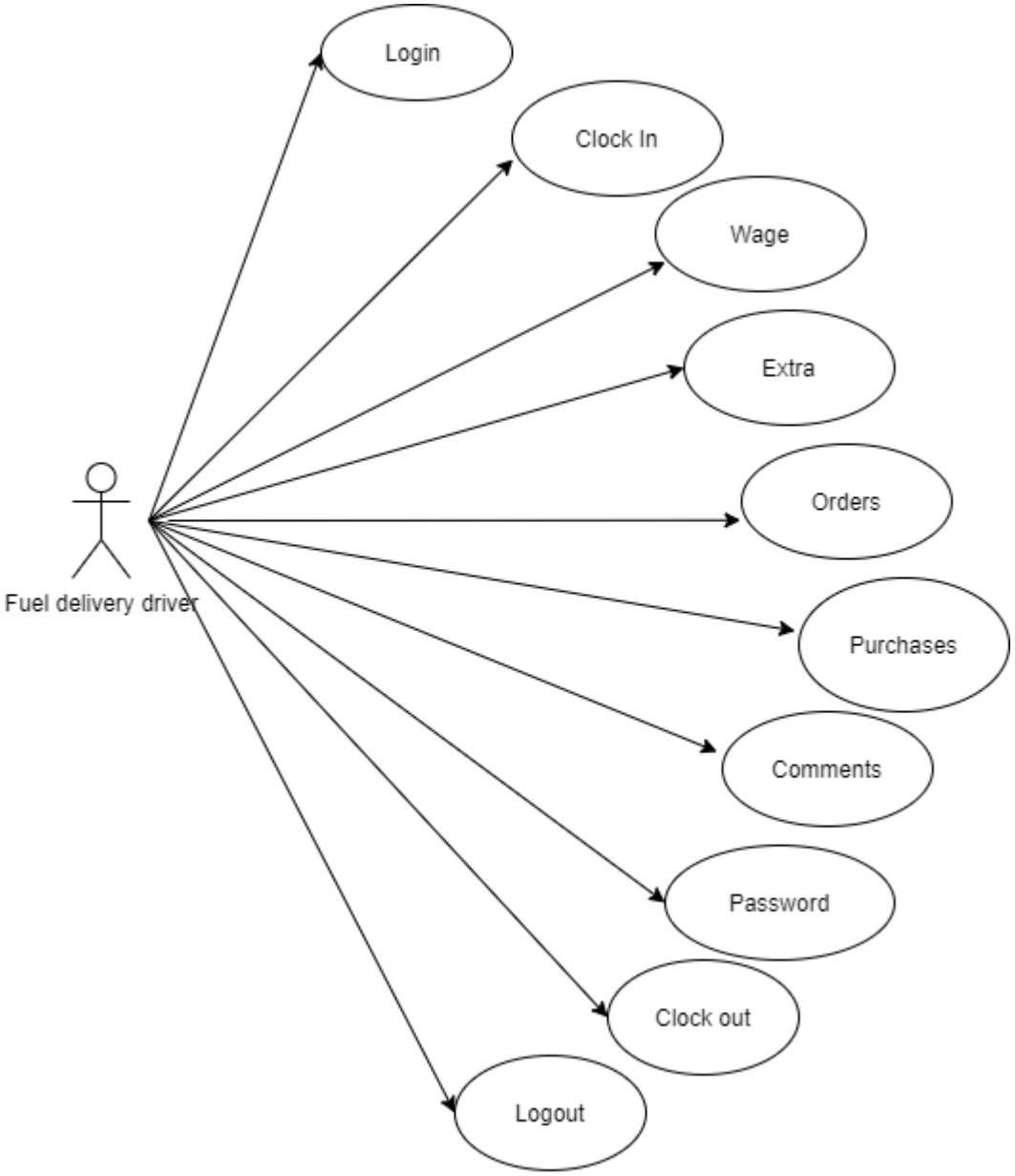

Log in
Clock in
Clients
Users
Products
Inventory
Orders
Purchases
Suppliers
Payrolls
Reports
View comments
Clock out
Logout
Manager

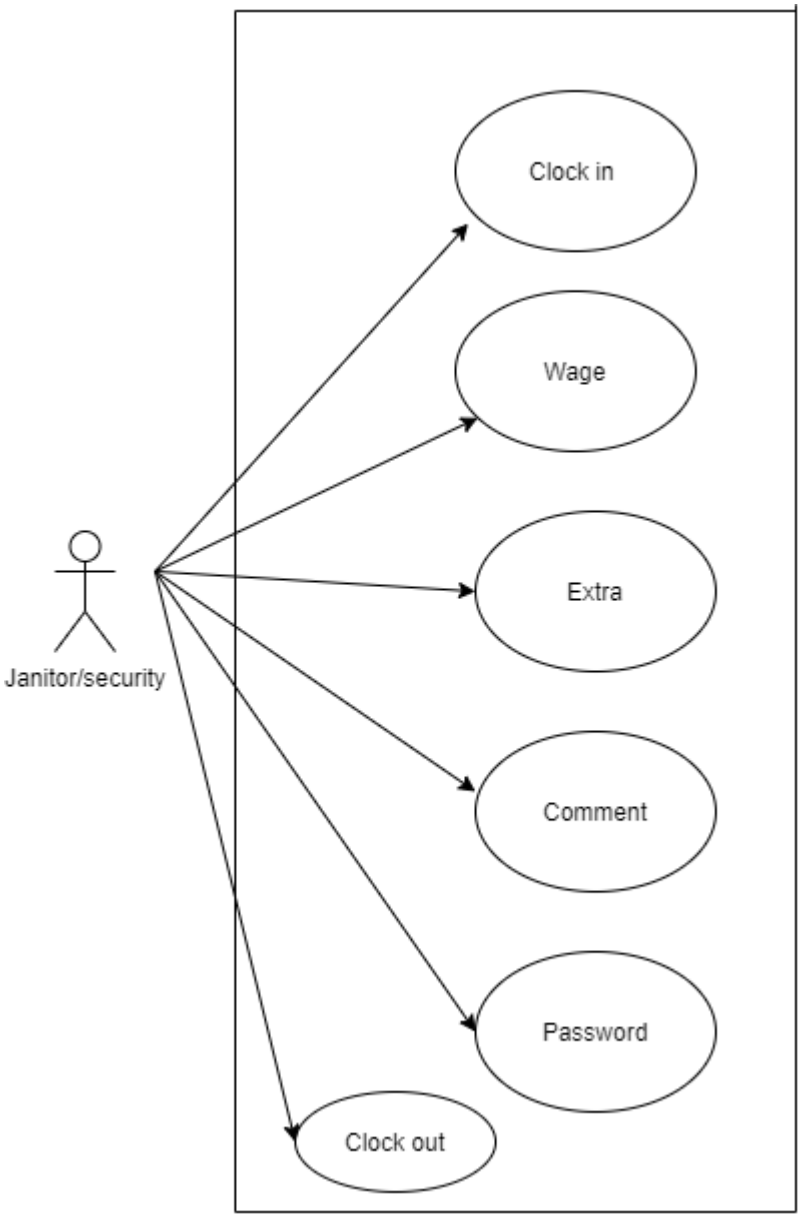

Login
Clock In
View Receipts
Reports
Inventory
Payrolls
Products
Orders
Purchases
Employees
Clock Out
Logout
Economist


Login
Clock in
Products
Receipts
Comments
Orders
Clock out
Logout
Cashier


Login
Clock In
Products-Fuel
Receipts
Comments
Orders
Clock Out
Logout
Fuel attendant

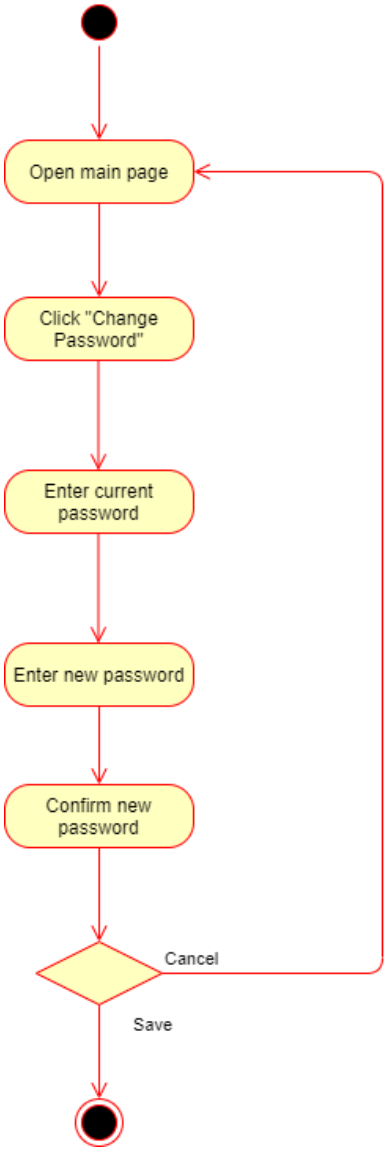

Login
View Purchased Products
View Collected Points
Order Products
Logout
Client


Login
Clock In
Wage
Extra
Orders
Purchases
Comments
Password
Clock out
Logout
Fuel delivery driver

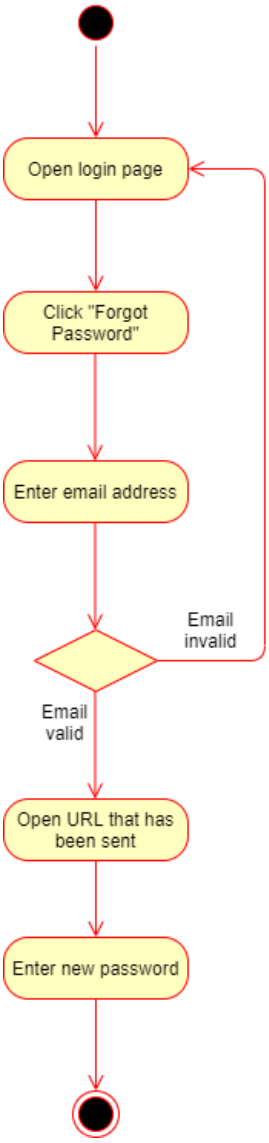

Clock in
Wage
Extra
Comment
Password
Clock out
Janitor/security

4.4 *Activity* Diagrams

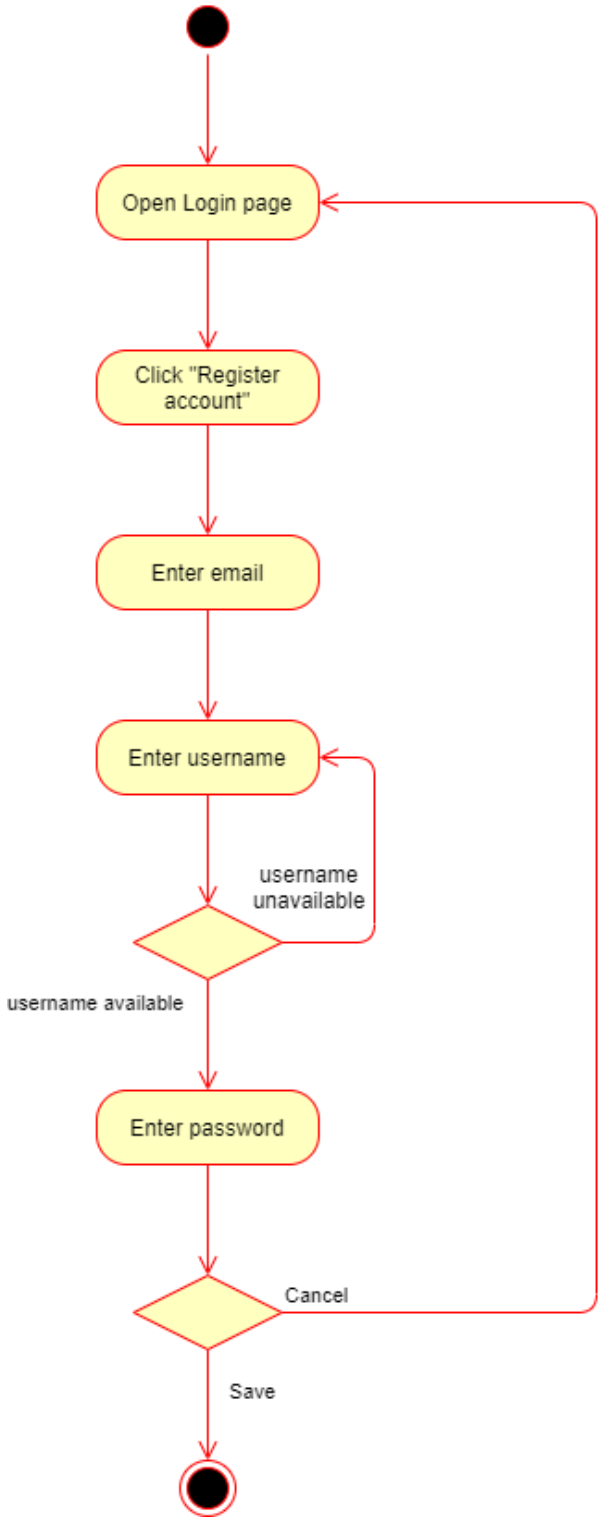
AC-01 Change password



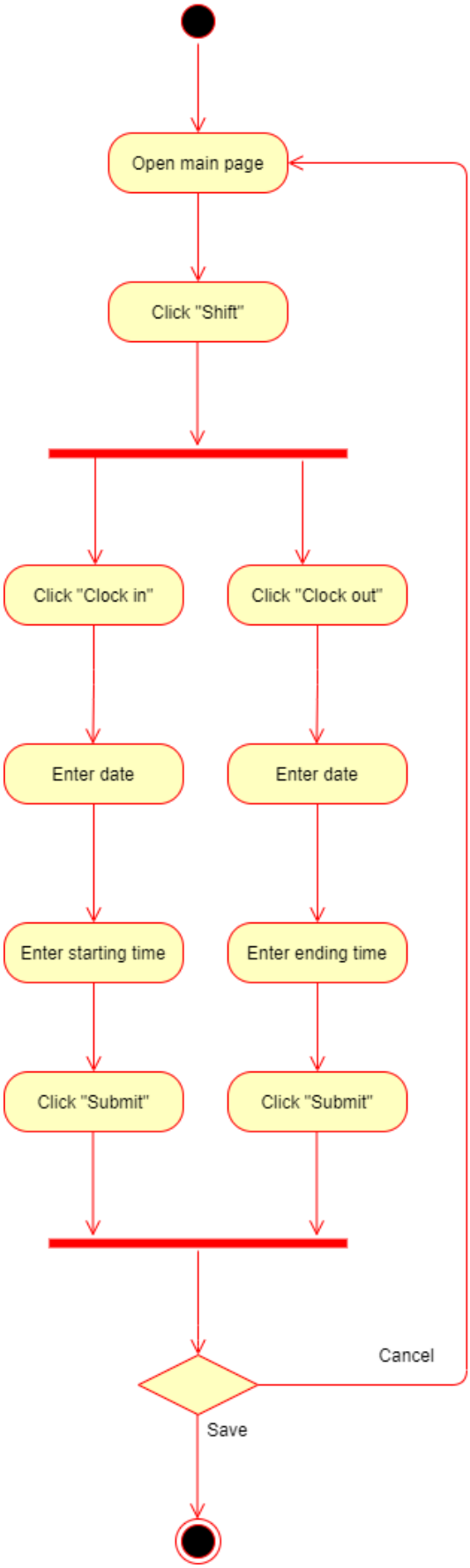
AC-02 Reset password



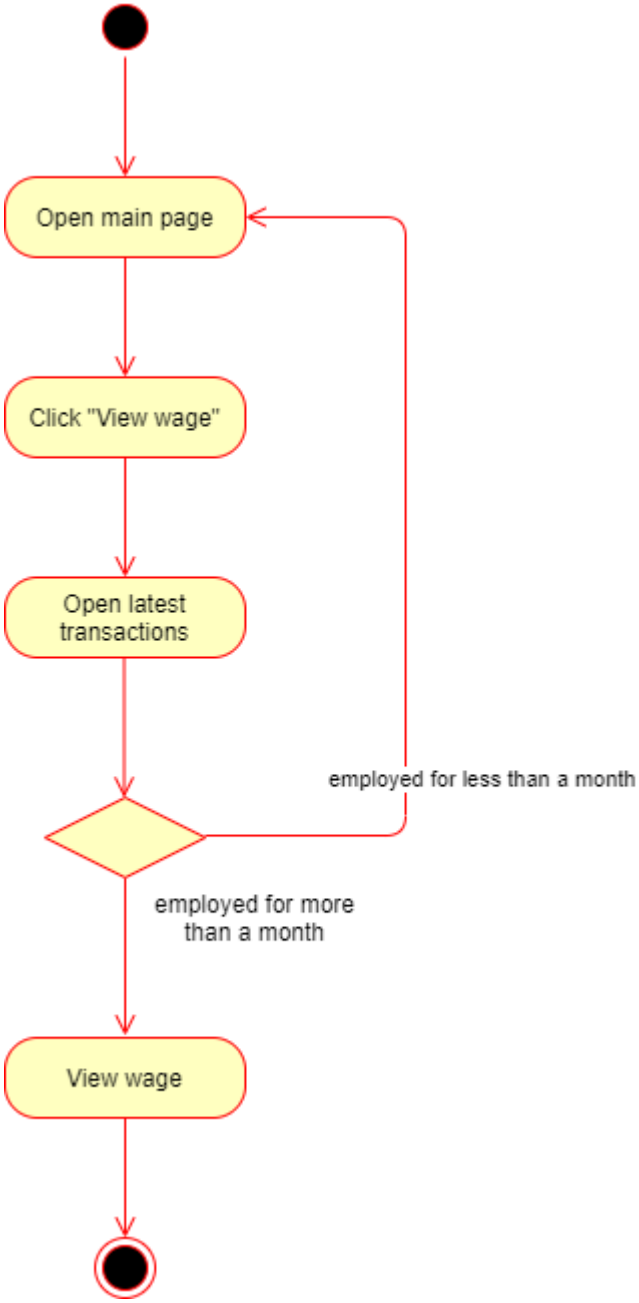
AC-03 Register account



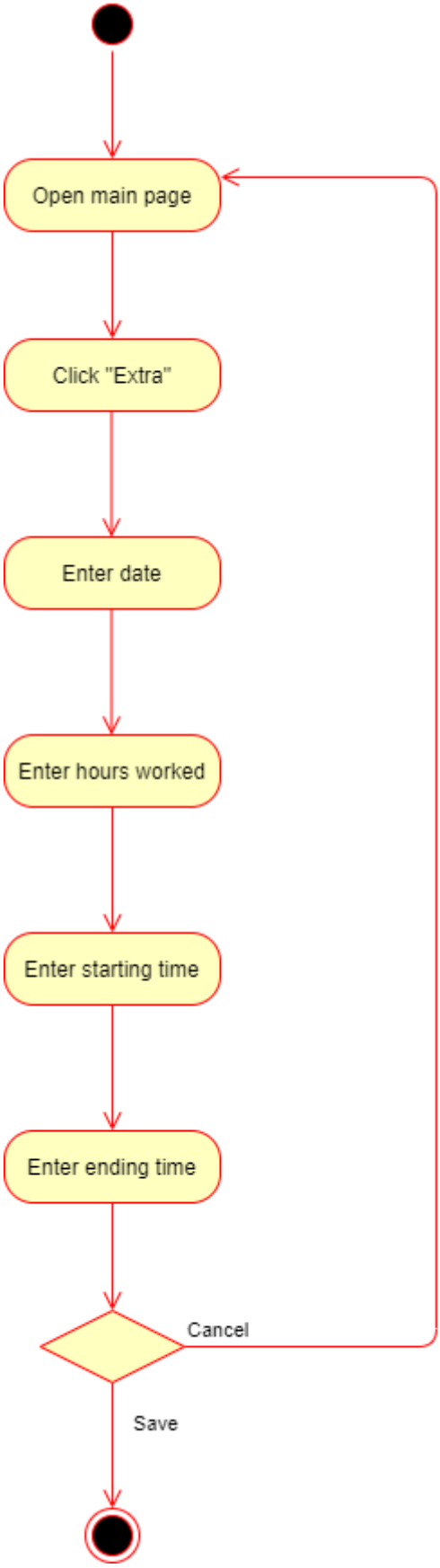
AC-04 Shift (start and end your shift)



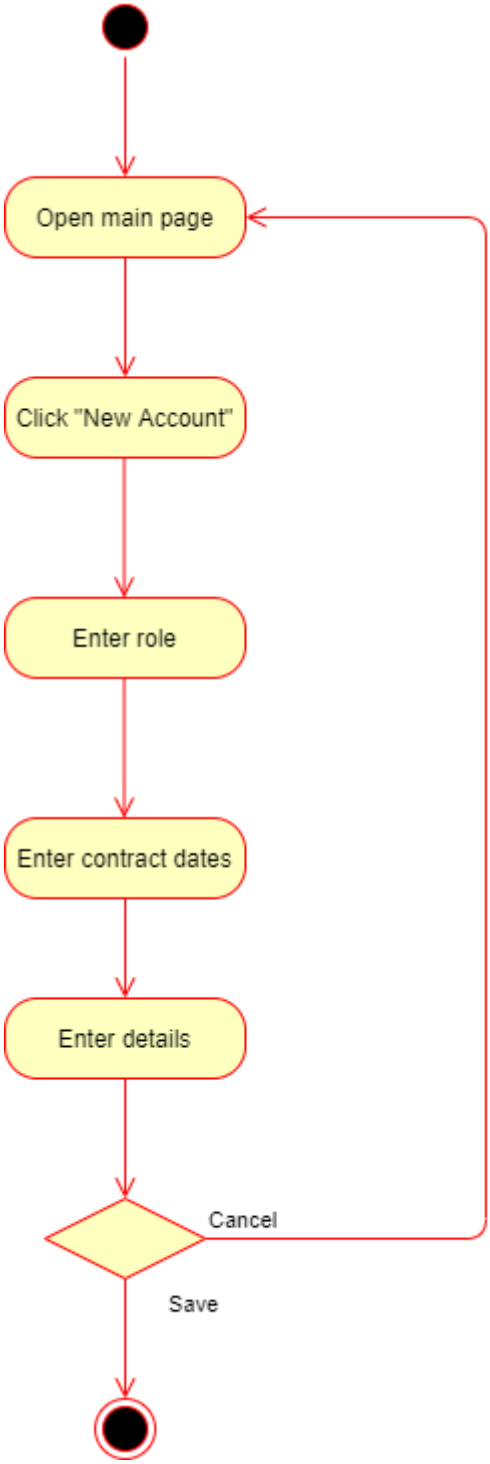
AC-05 Wage (view wage transactions)



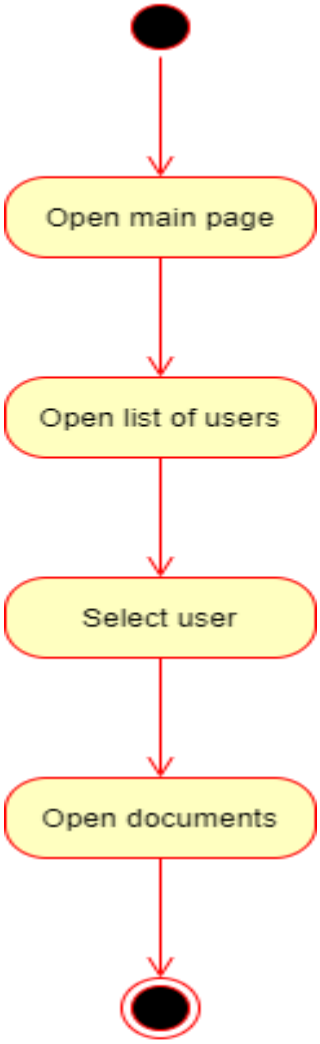
AC-06 Extra (enter extra hours of working)



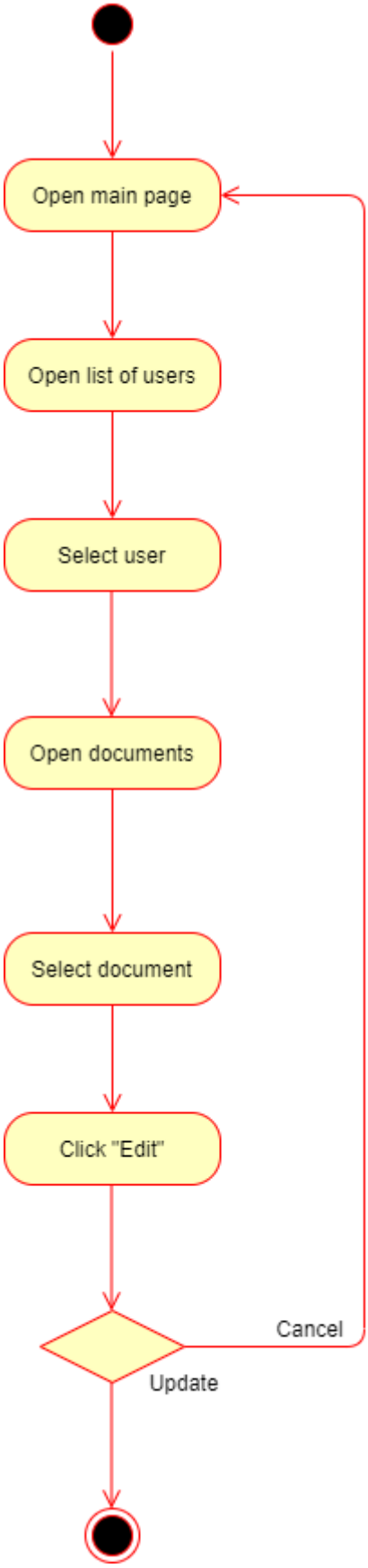
AC-07.1 Create account



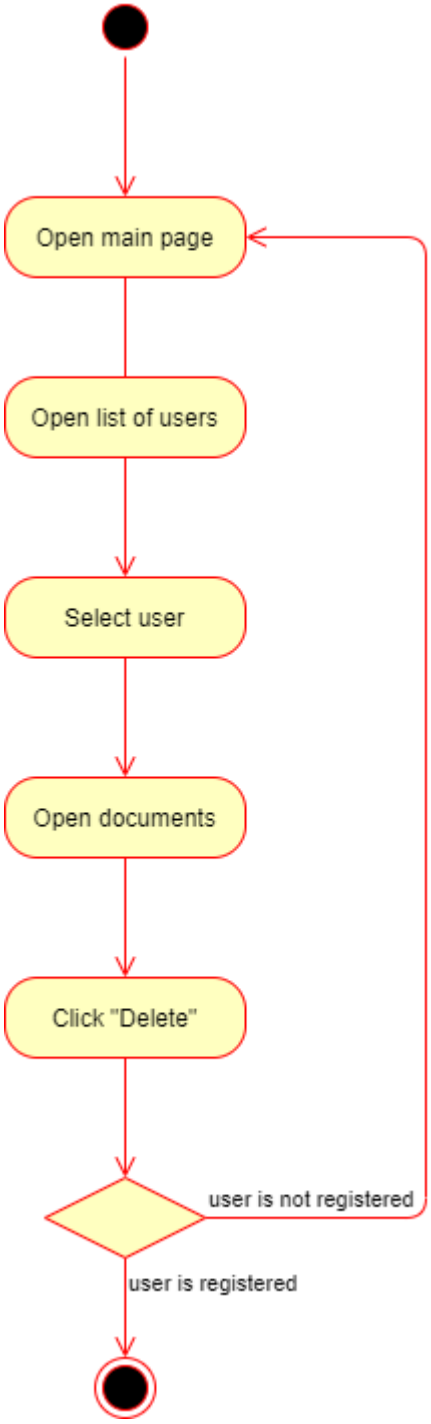
AC-07.2 View users



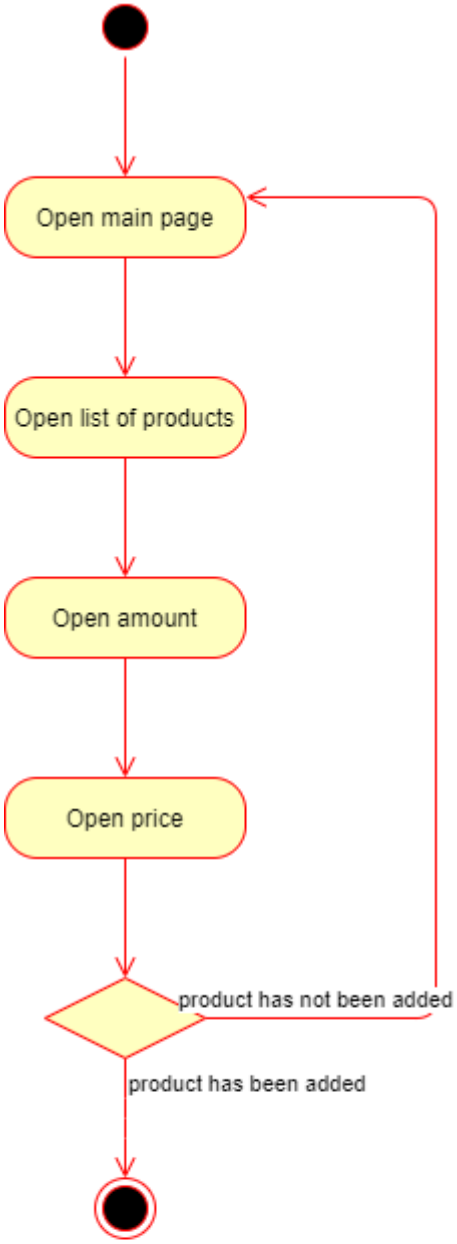
AC-07.2.1 Edit users



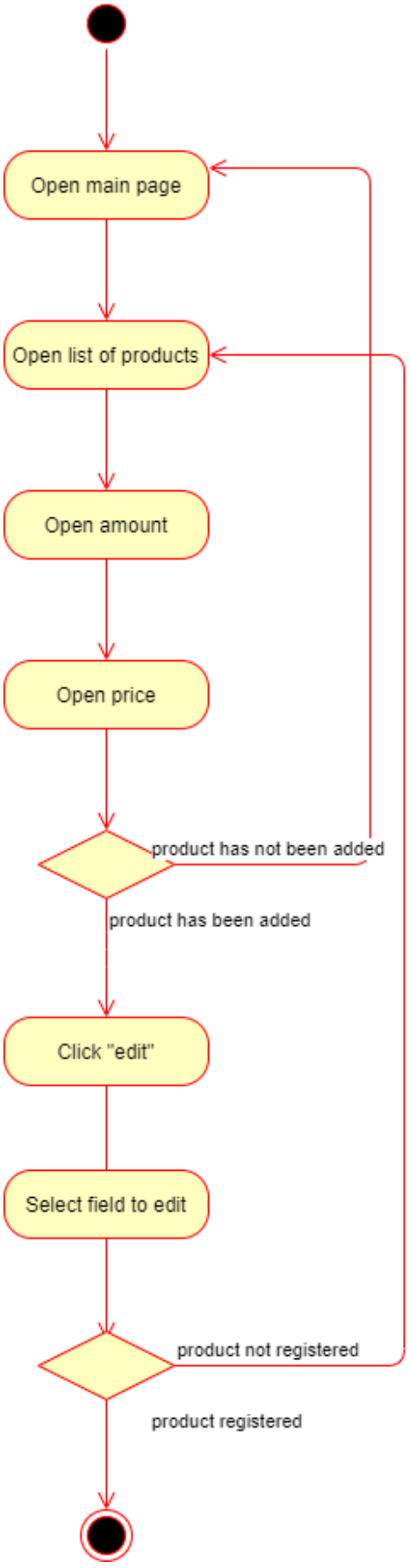
AC-7.2.2 Delete user



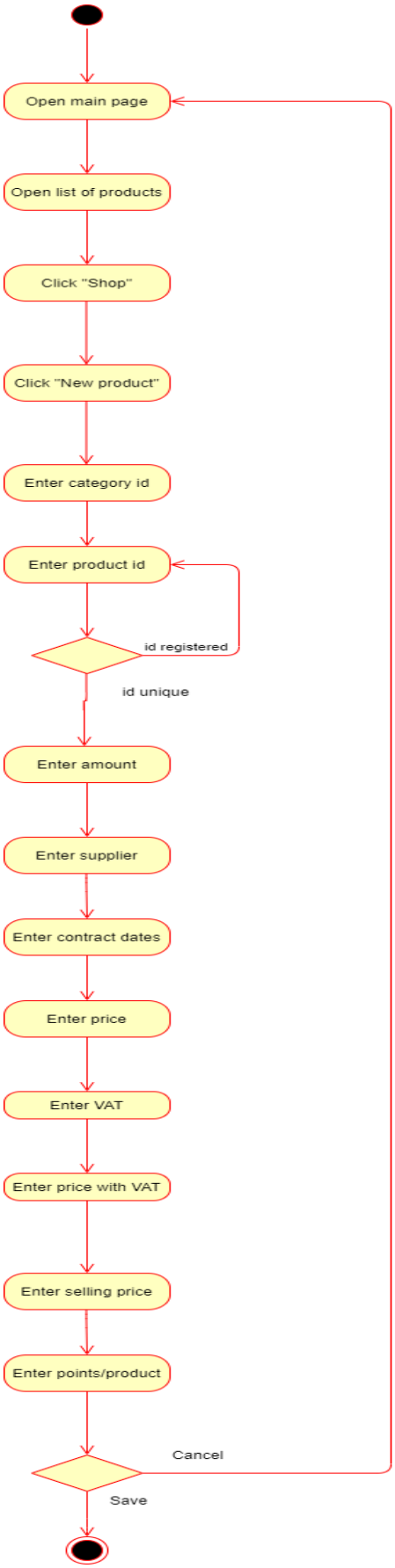
AC-7.3.0 View products



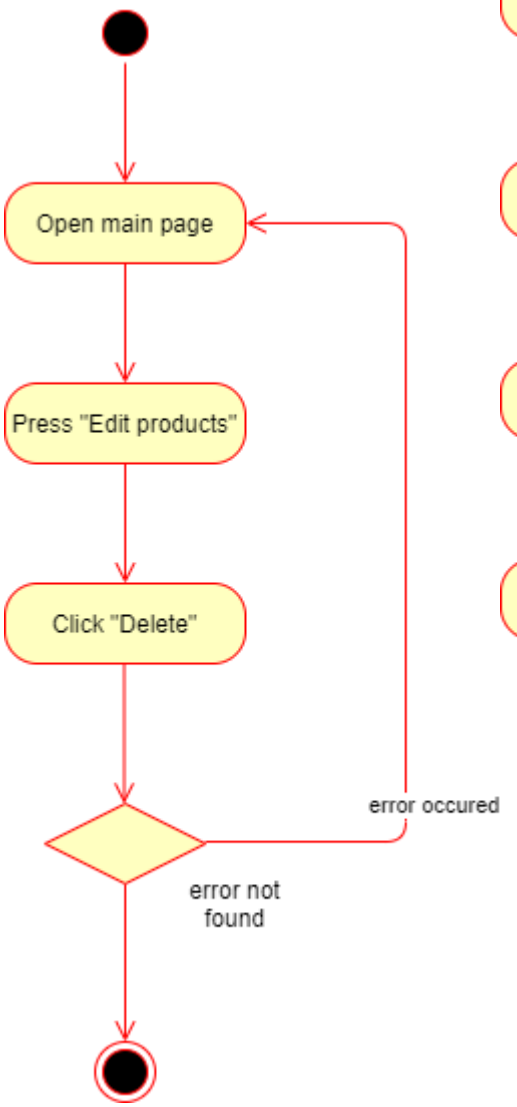
AC-7.3.1 Edit users



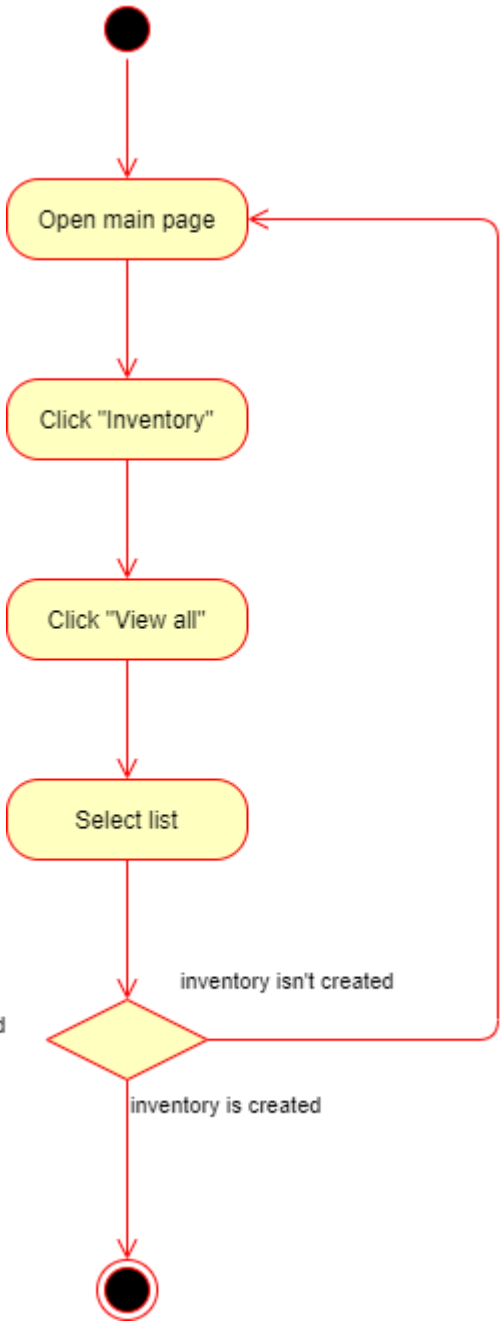
AC-7.3.2 Add new product



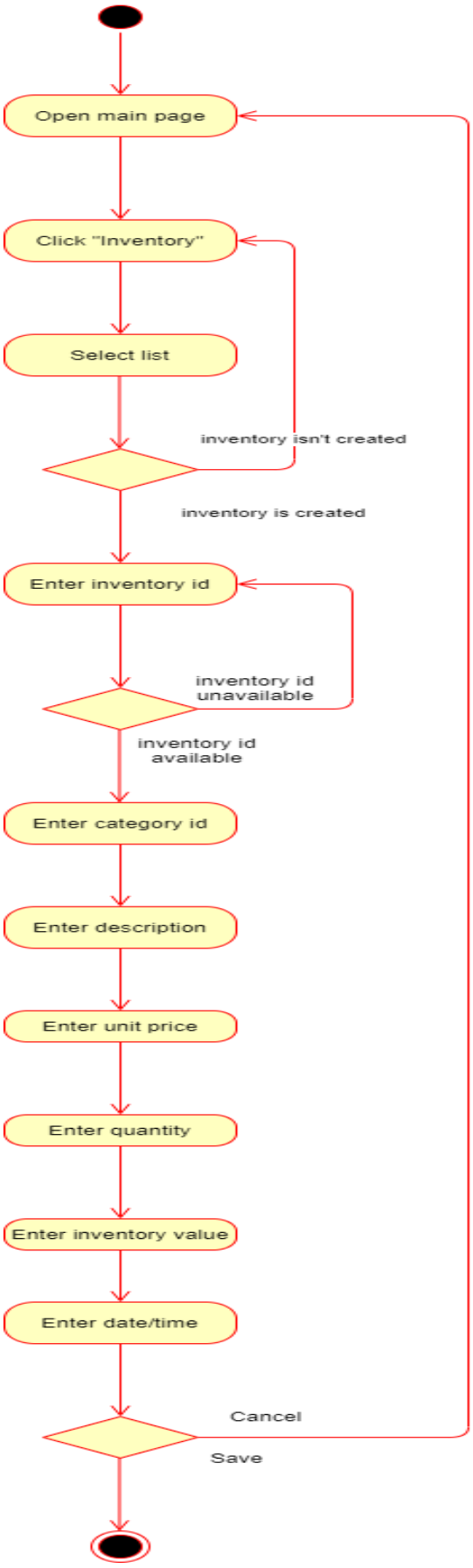
AC-7.3.3 Delete product



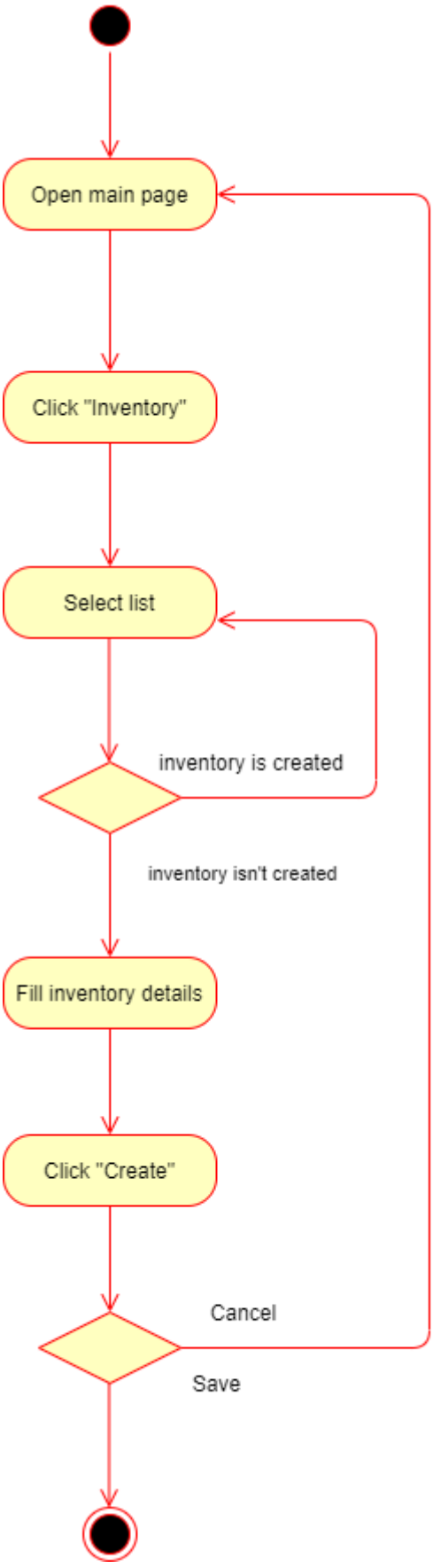
AC-7.4.0 View inventory



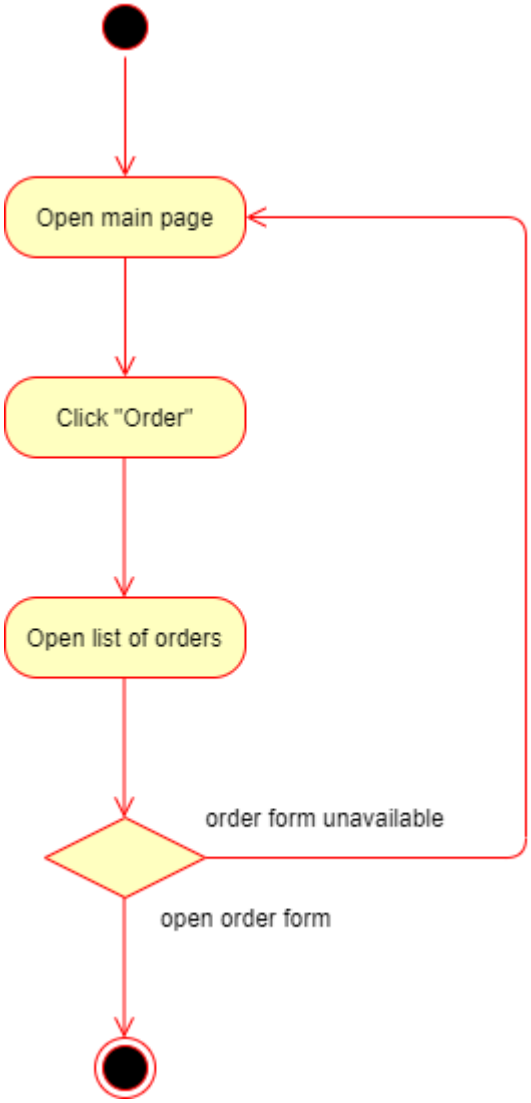
AC-7.4.1 Manage inventory



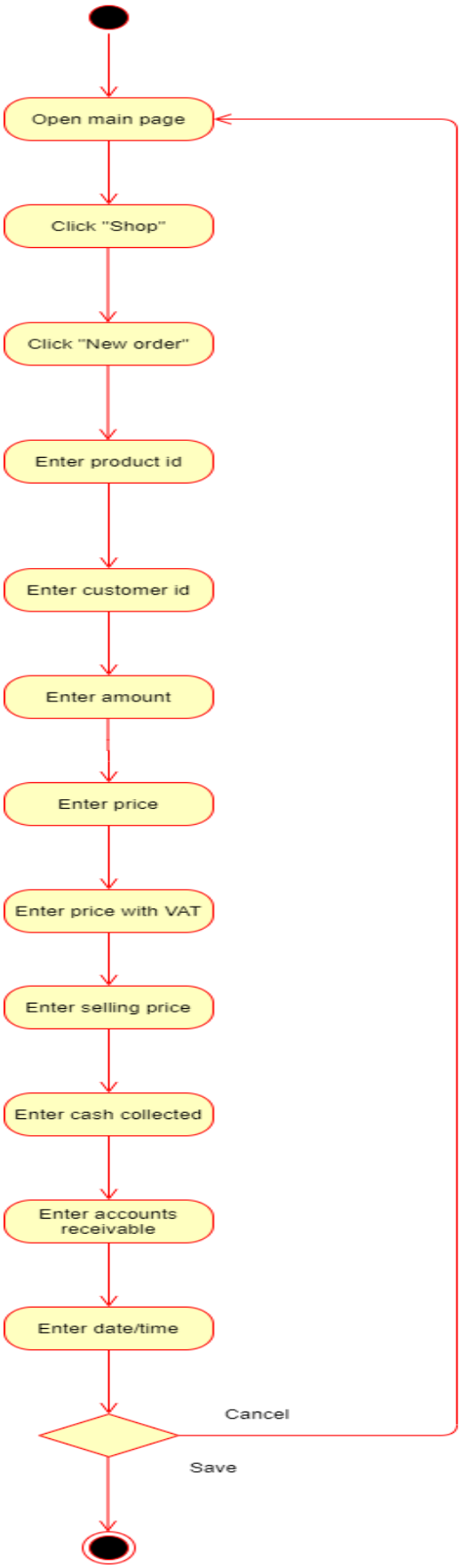
AC-7.4.2 Create new inventory



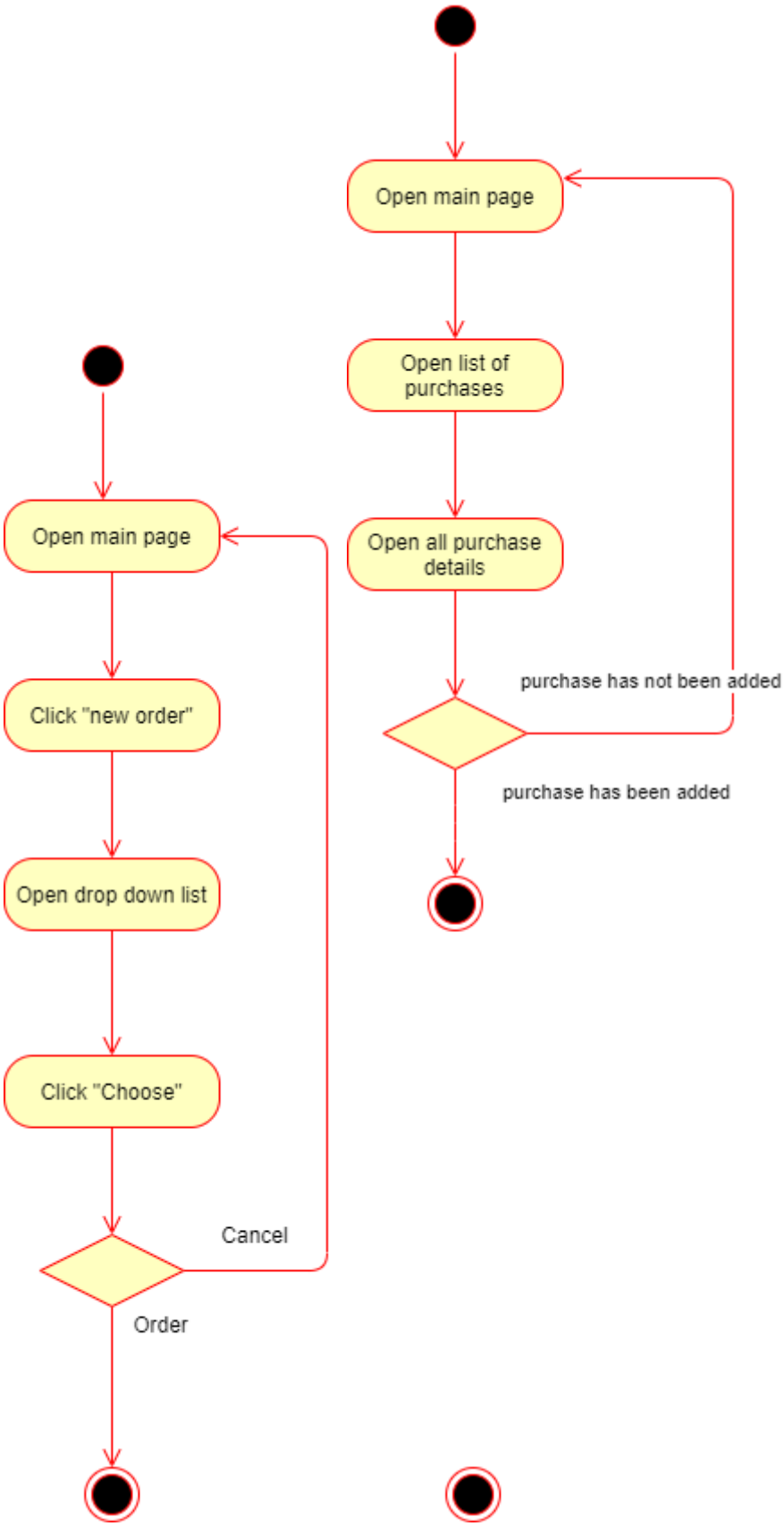
AC-7.5 View orders



AC-7.5.1 Edit orders

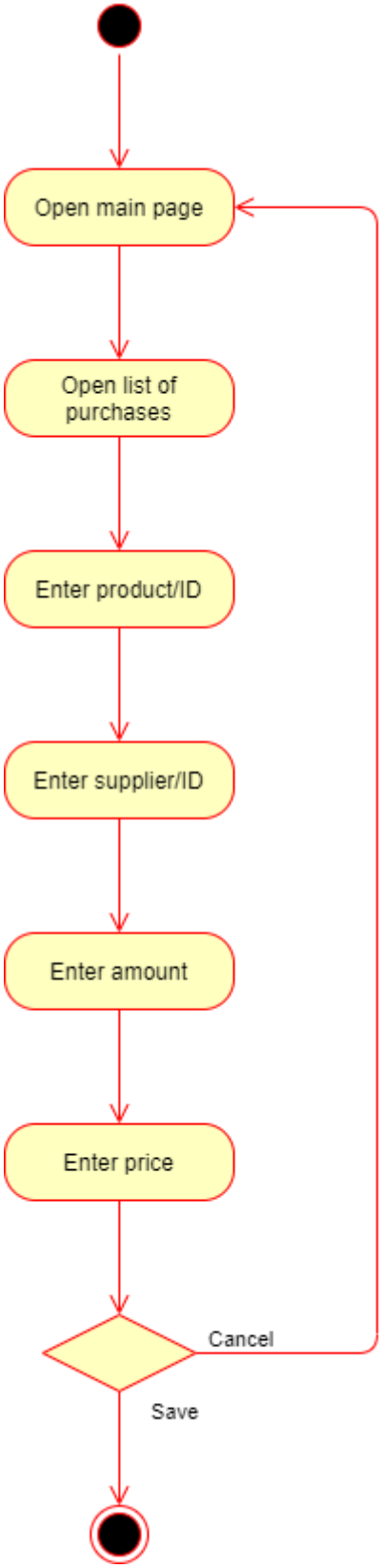


AC-7.5.2 Add new client order

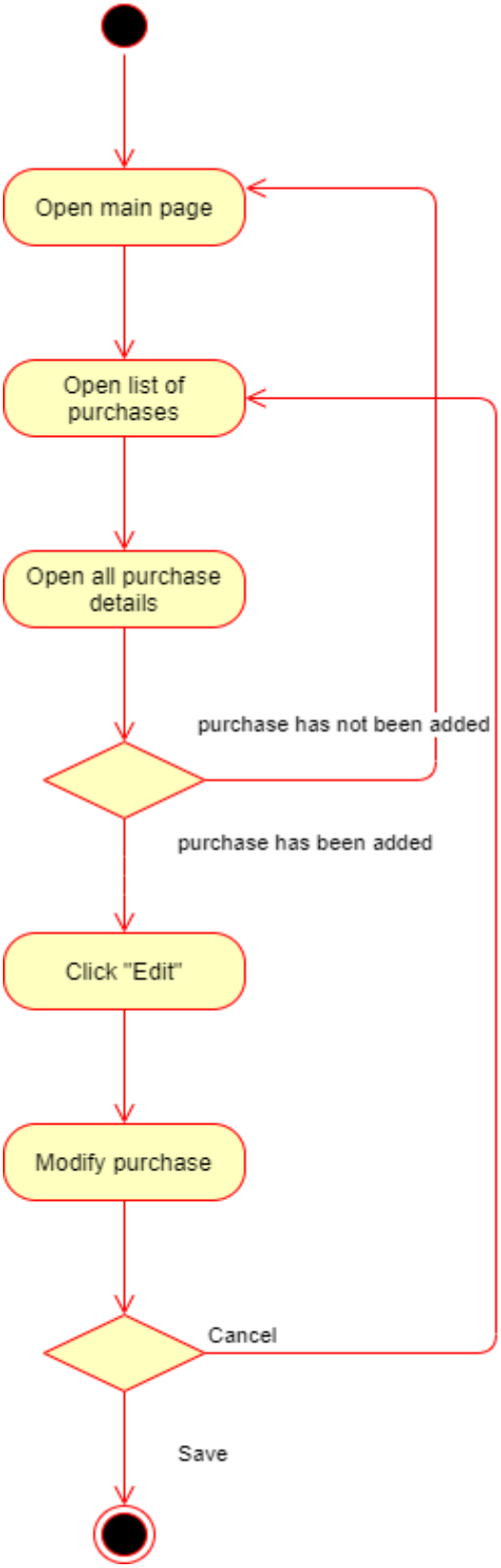


AC-7.6.0 View purchase

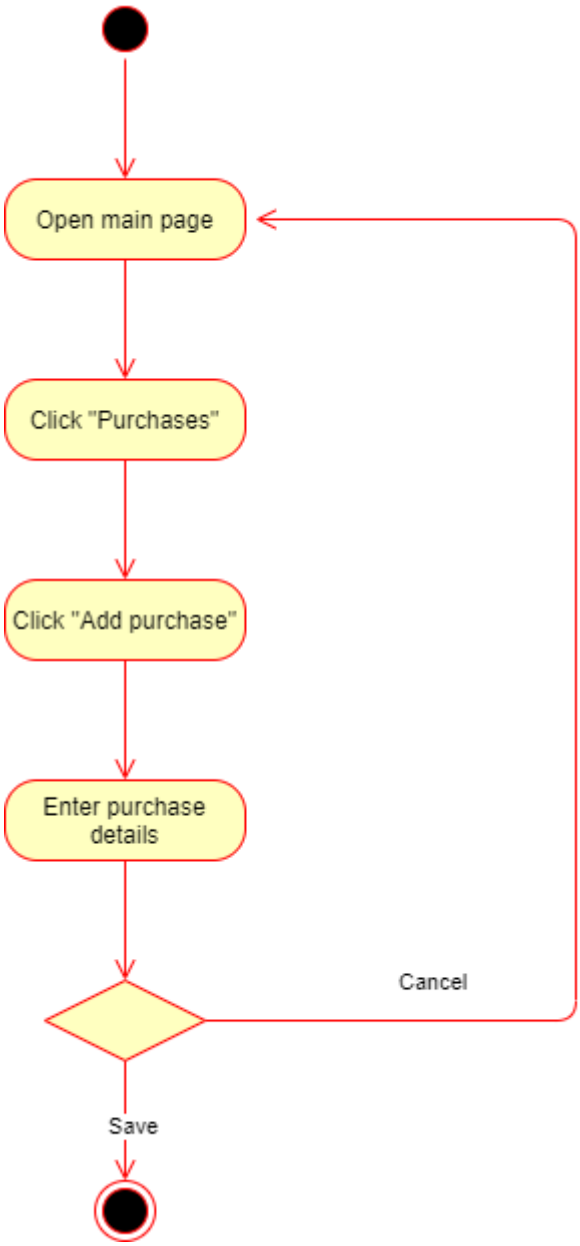
AC-7.6.1 Create purchase



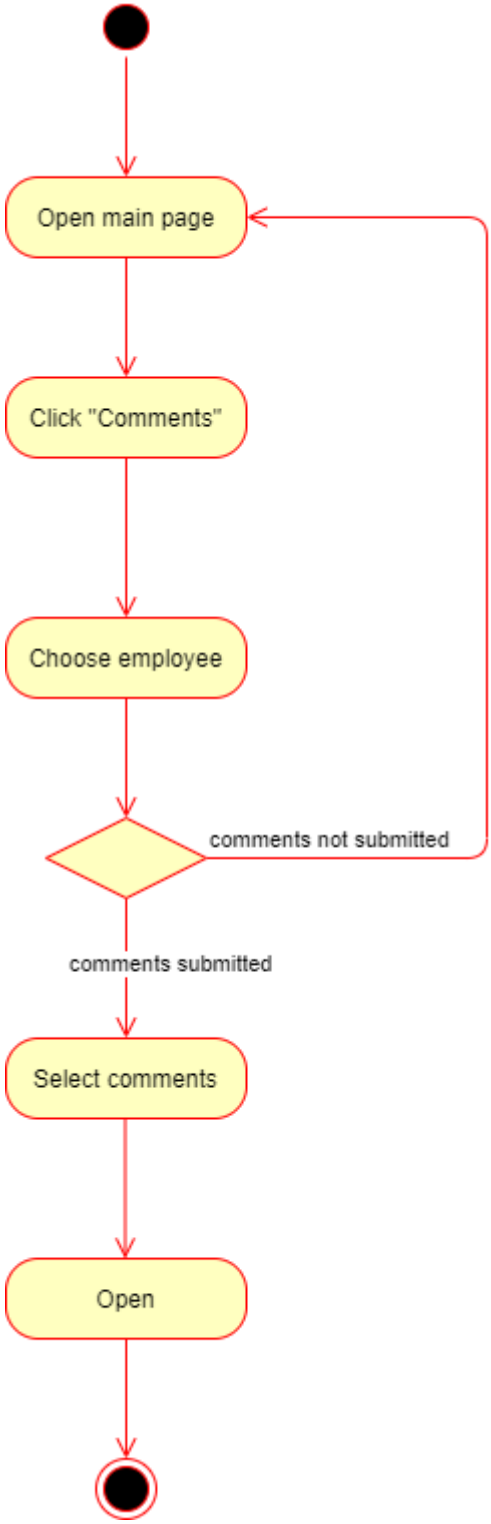
AC-7.6.2 Edit purchase



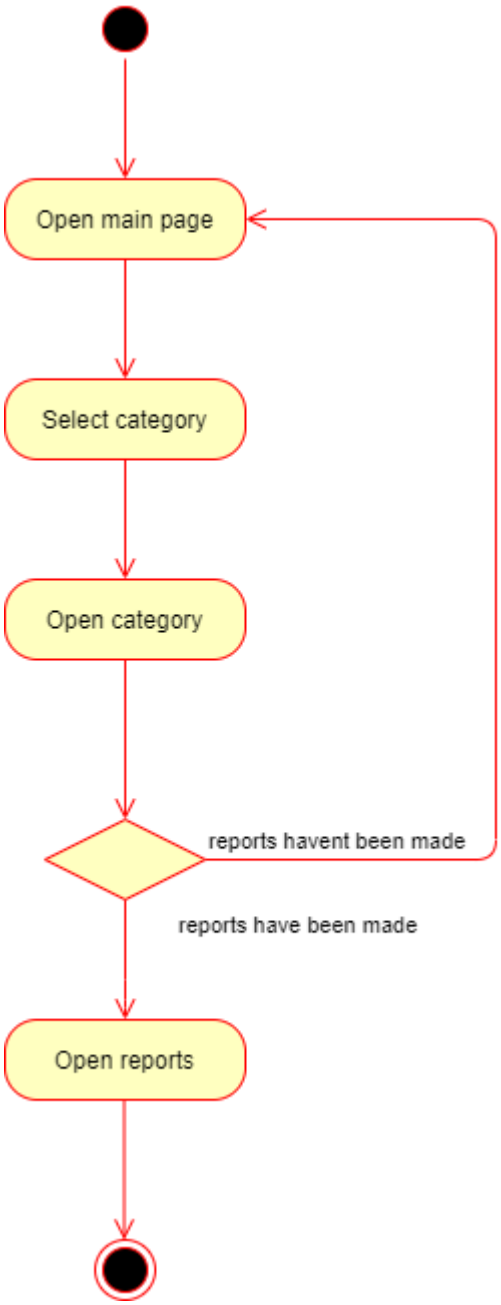
AC-7.6.3 Add new purchase



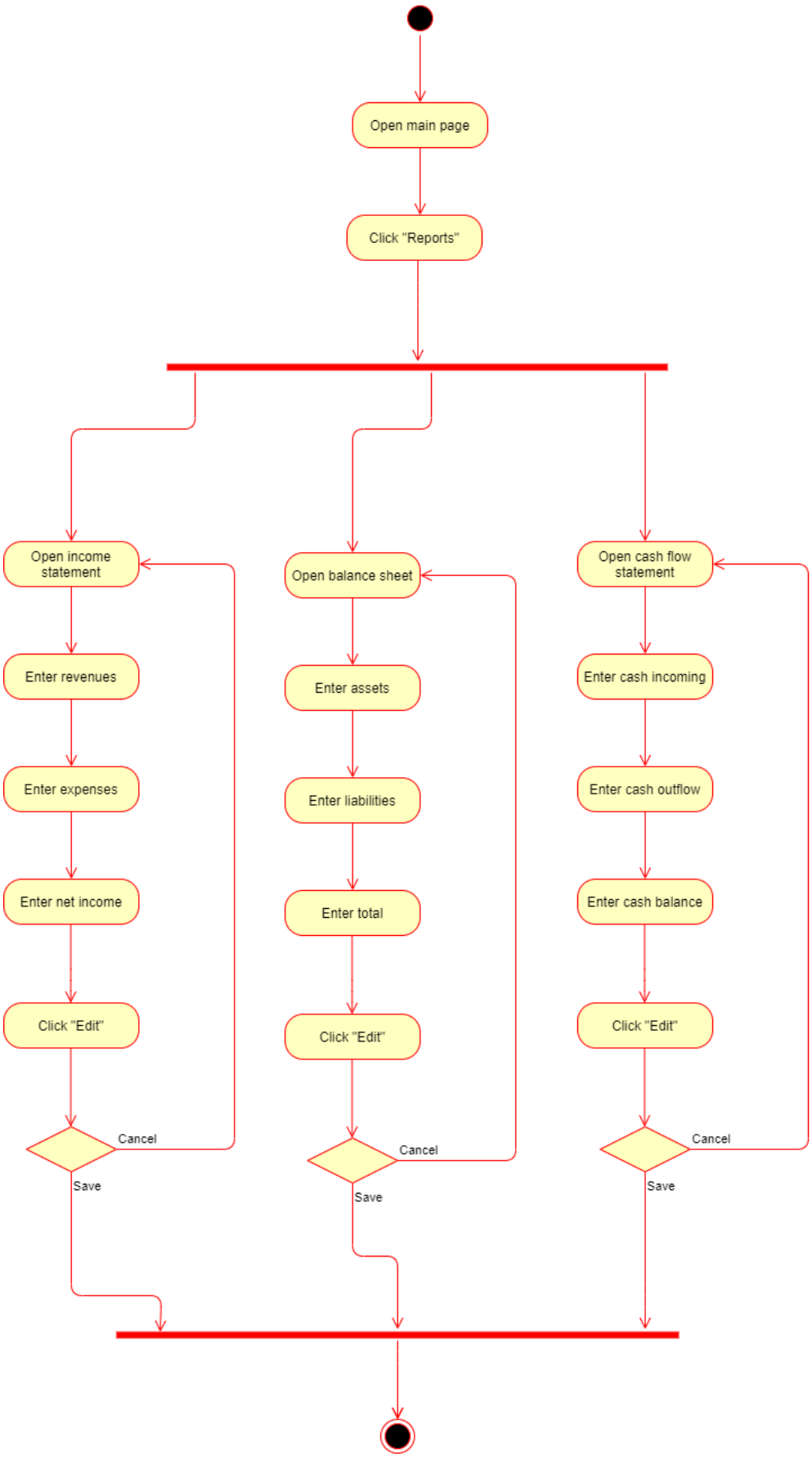
AC-7.7.0 View comments



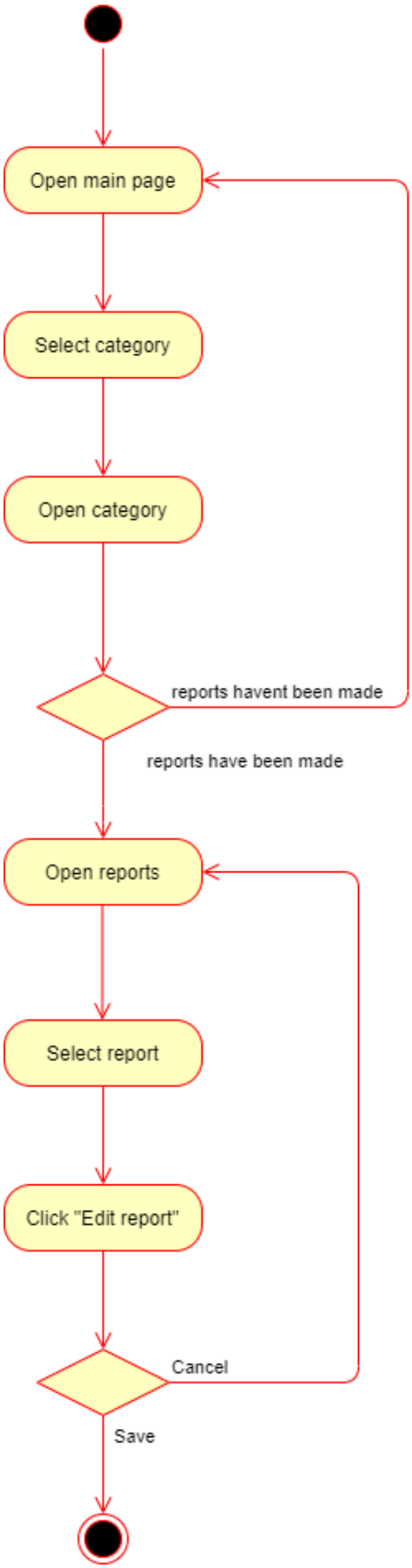
AC-7.8.0 View reports



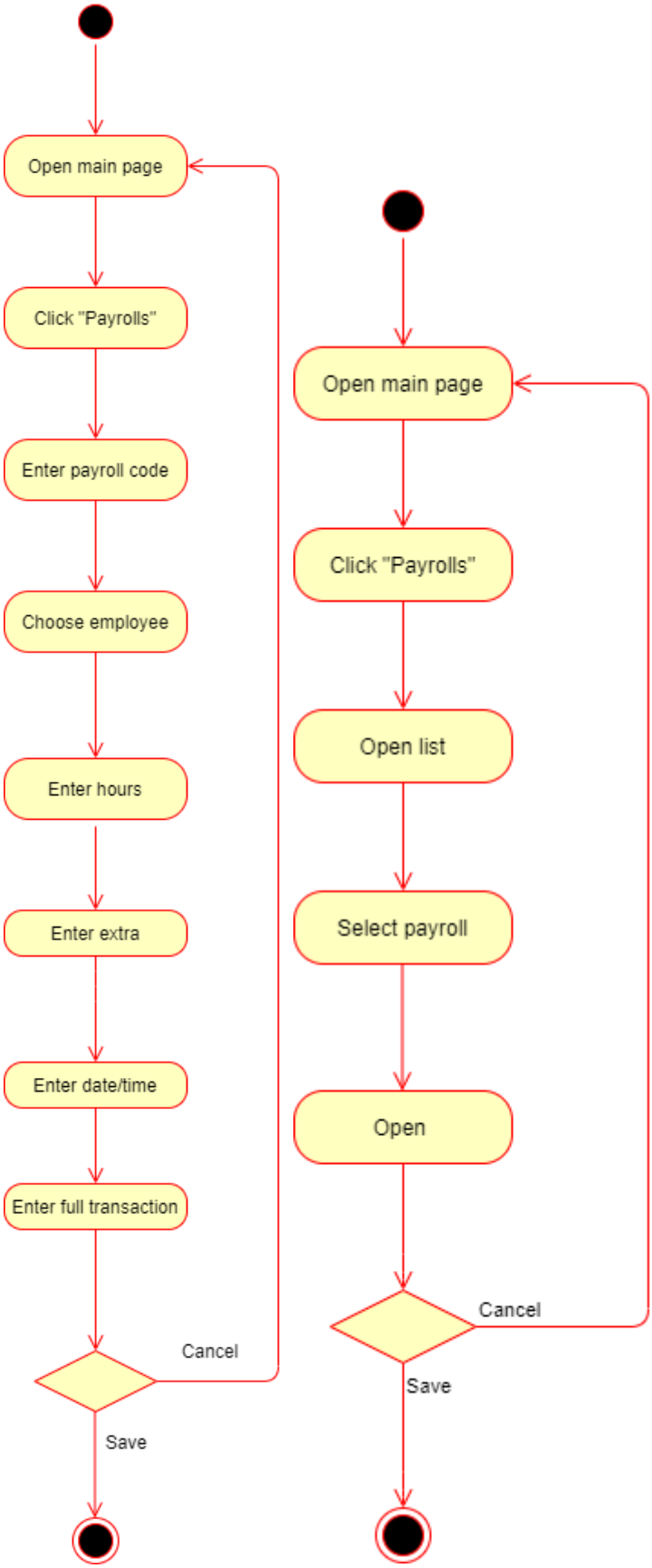
AC-7.8.1 Open/Add details in a report



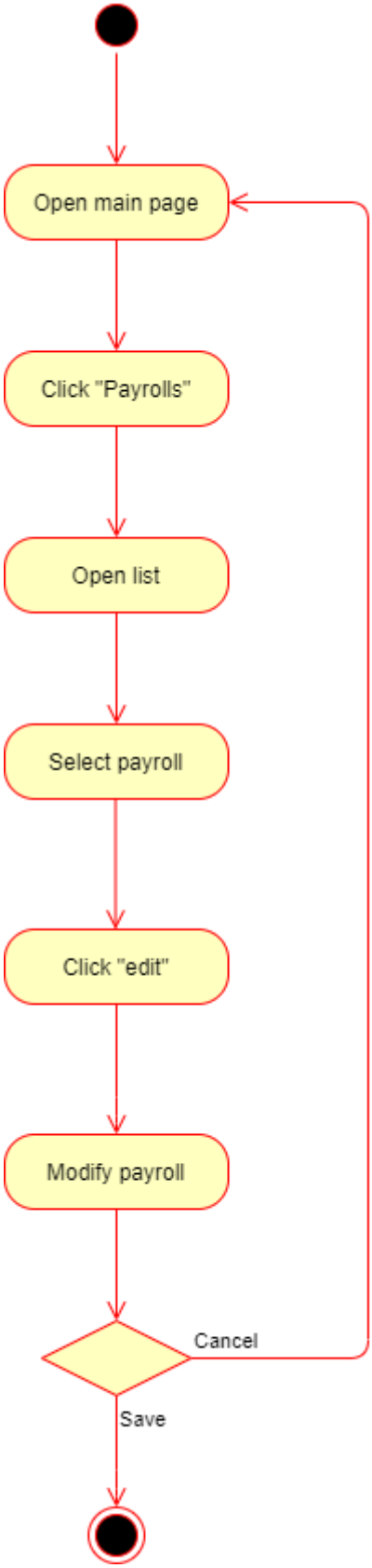
AC-7.8.2 Edit report



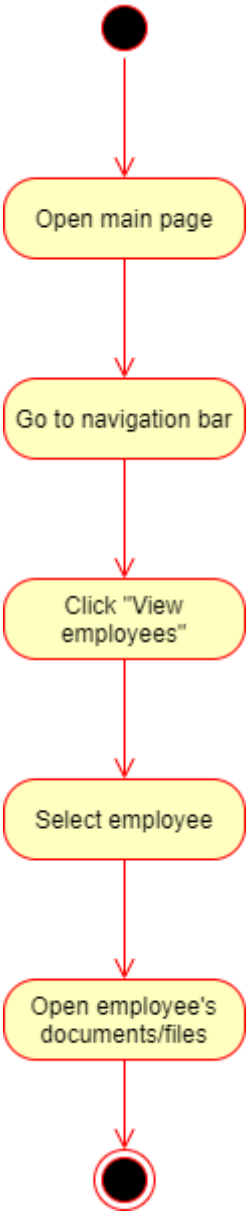
AC-7.9.0 Create payroll AC-7.9.1 View payroll



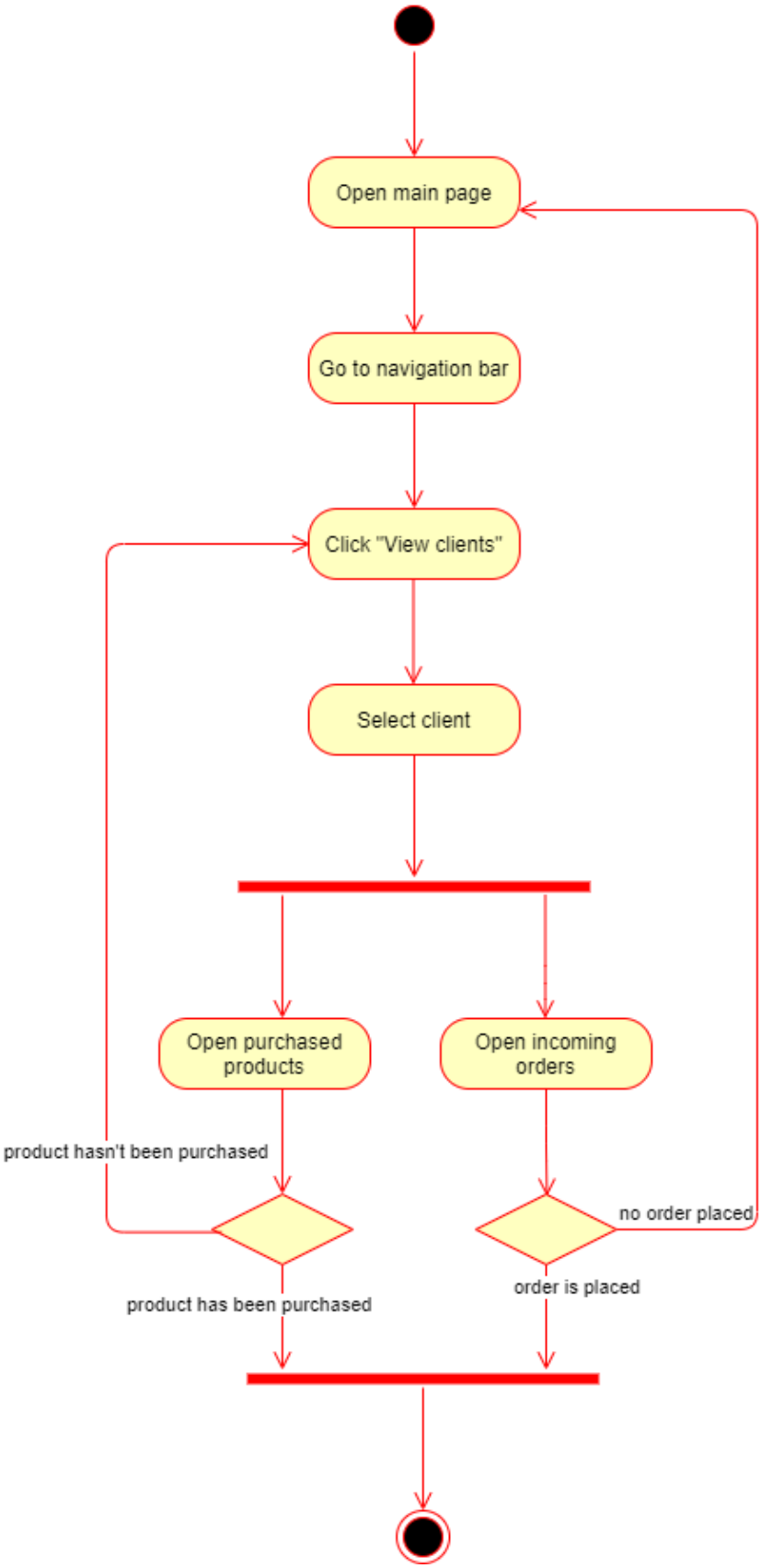
AC-7.9.2 Edit payroll



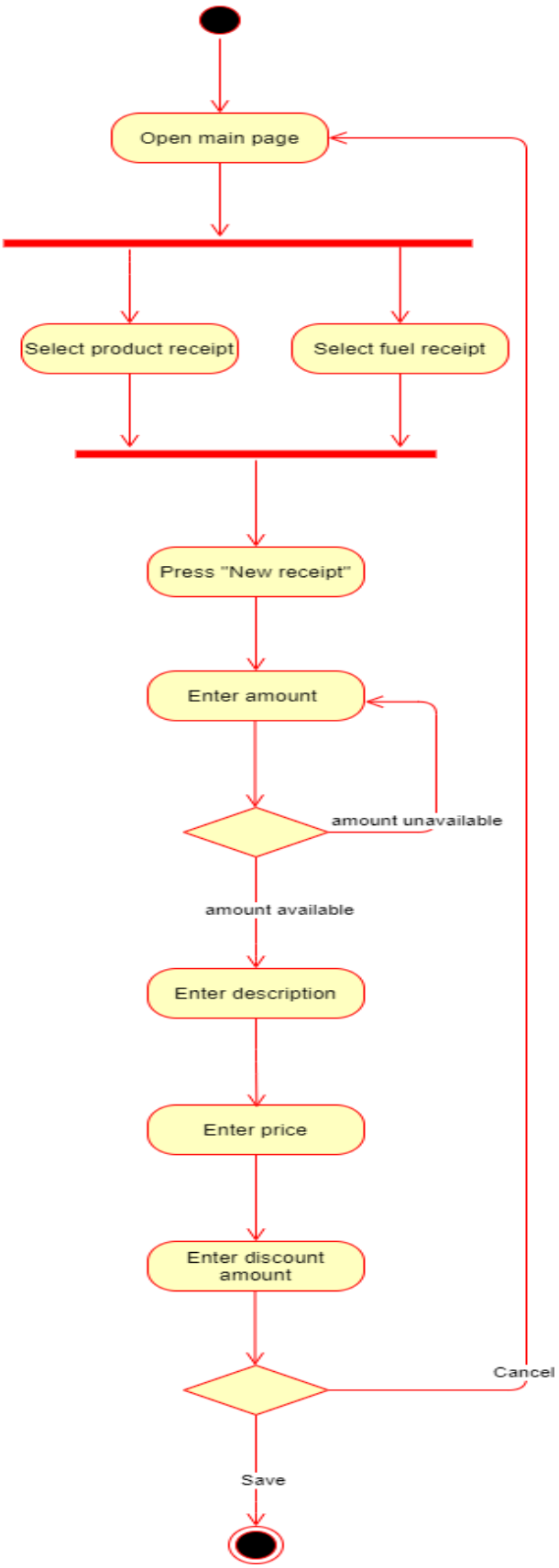
AC-7.10 View employees



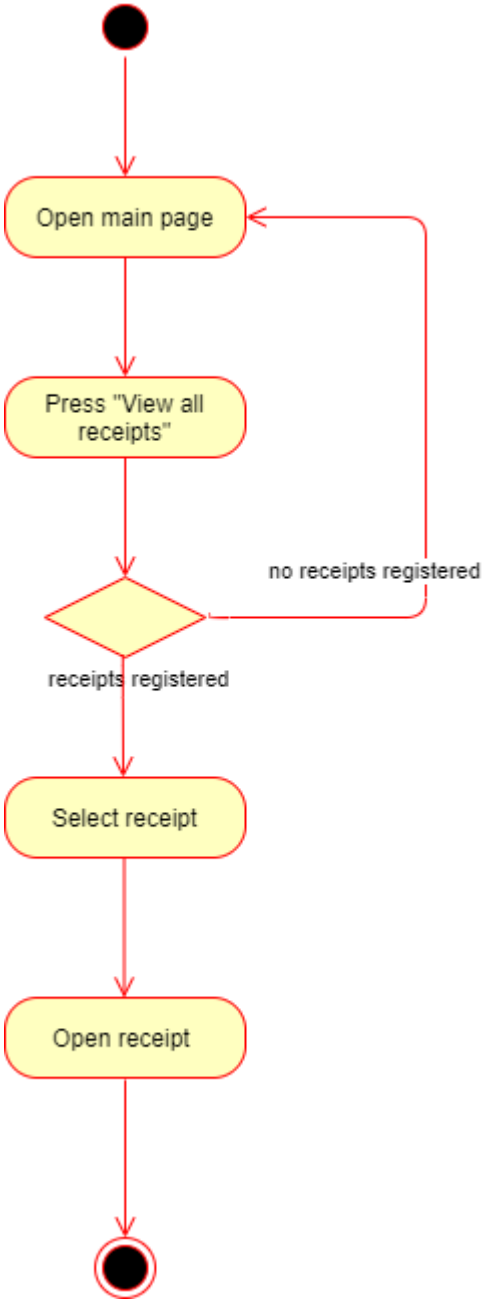
AC-7.11 View clients



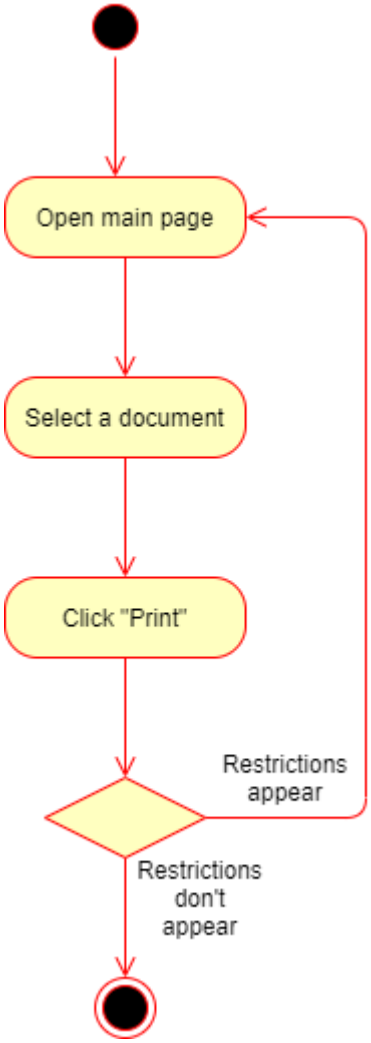
AC-08.1 & 08.2 Add new Product/Fuel receipt



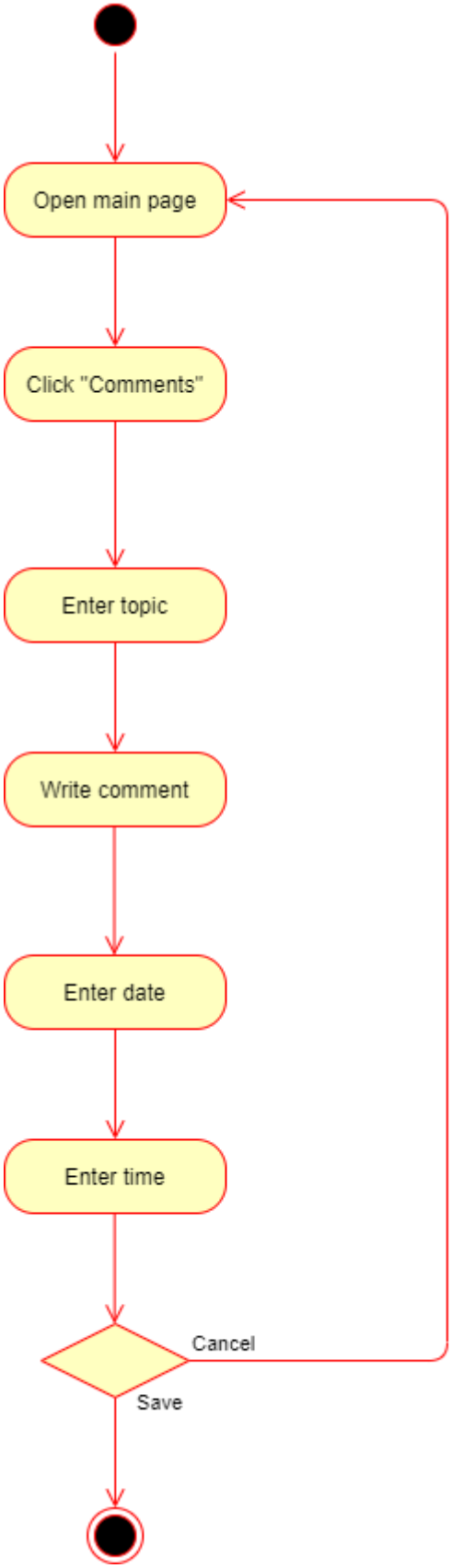
AC-08.3 View receipts



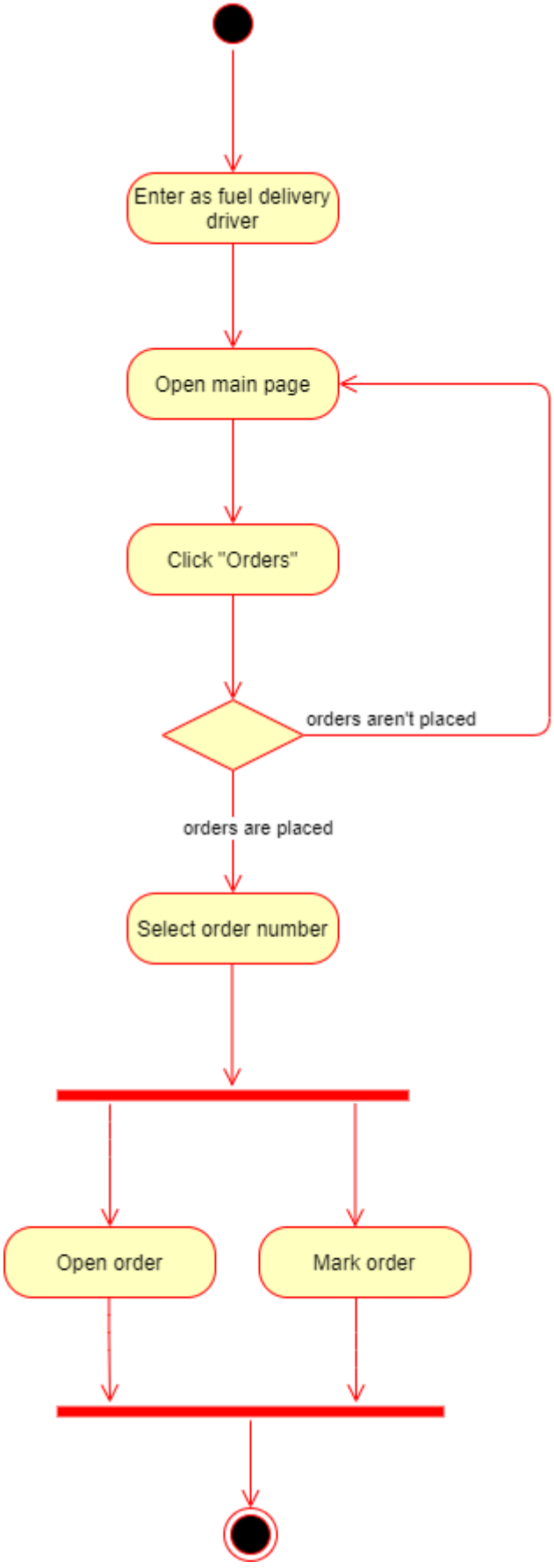
AC-09 Print document



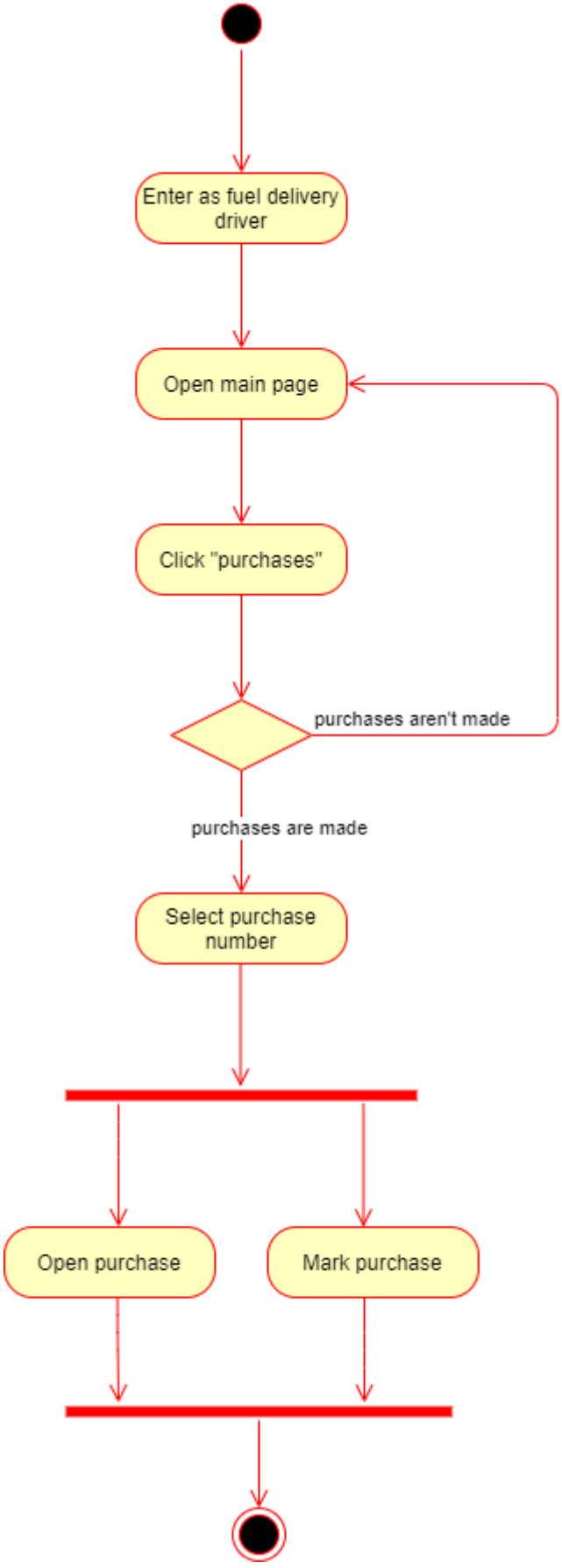
AC-10 Make comments



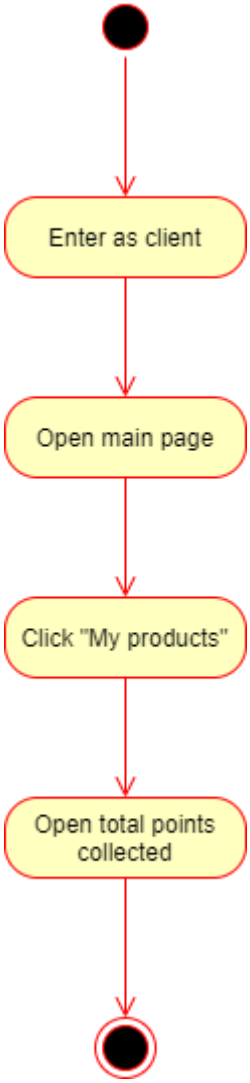
AC-11.1 Driver view/mark orders



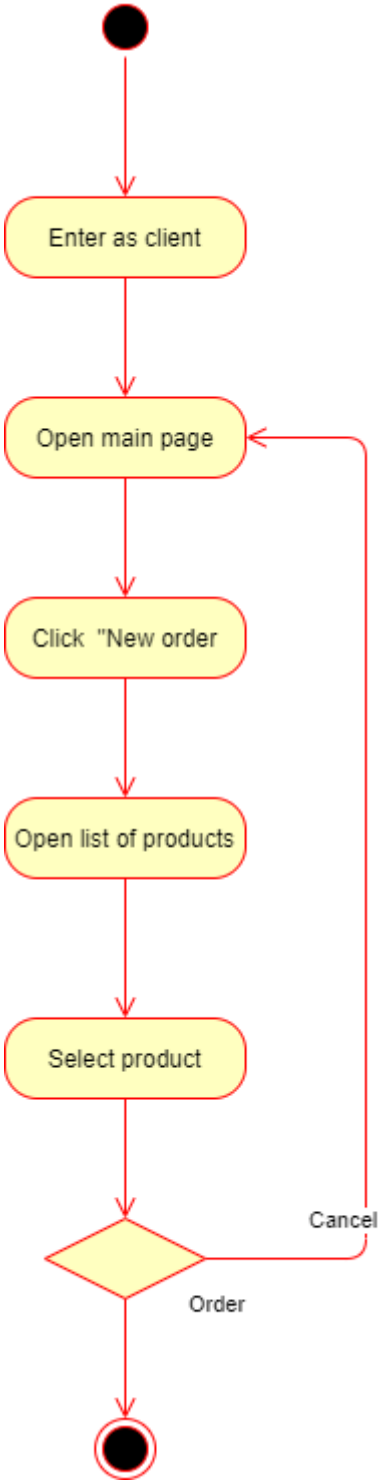
AC-11.2 Driver view/mark purchase



AC-12.1 View products points

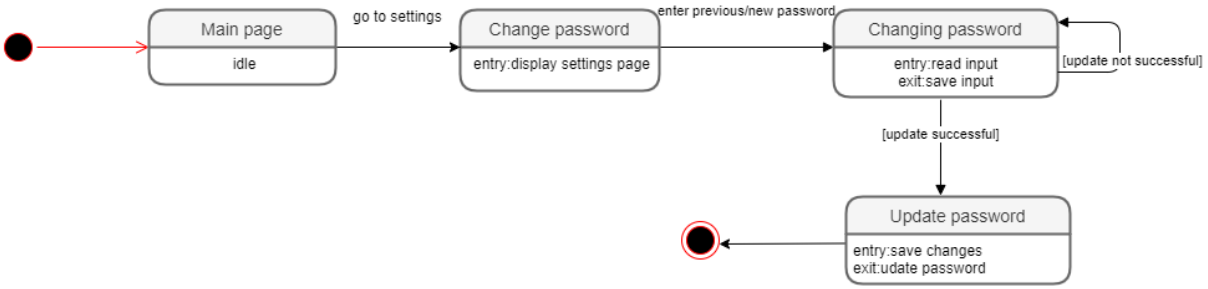


AC-12.2 Client adds new order

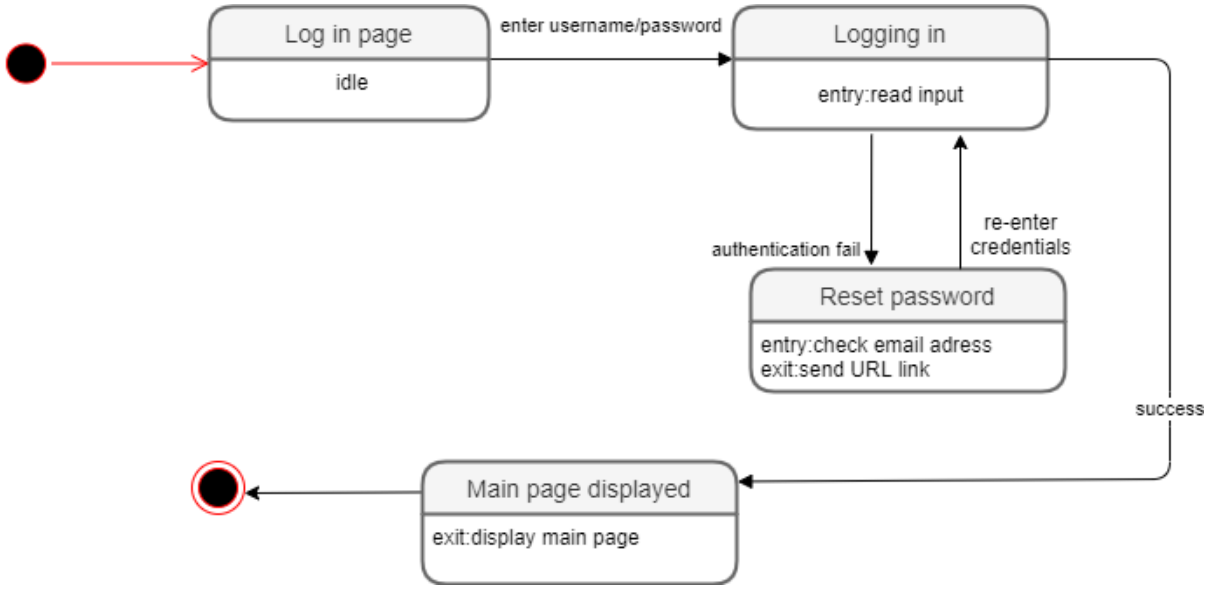


4.5 State Diagrams

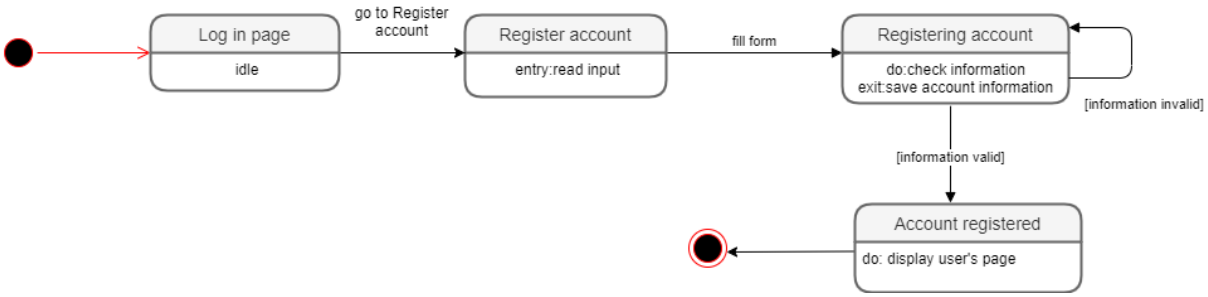
St-01 change password



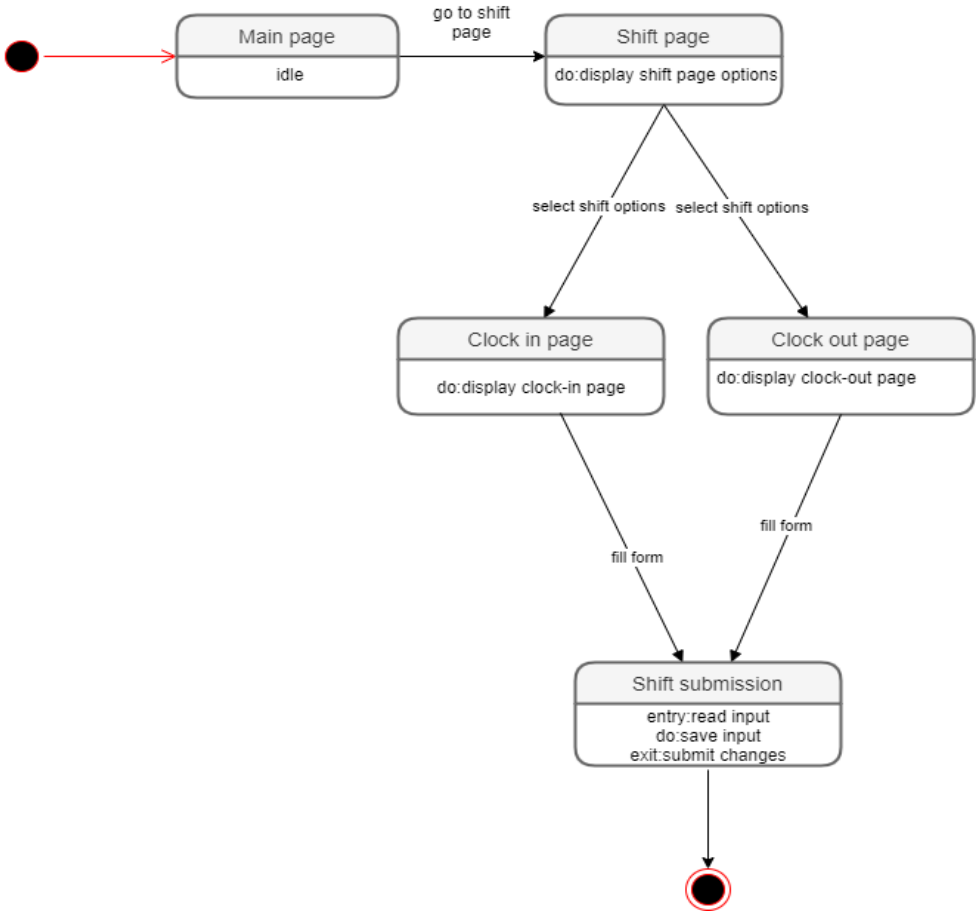
St-02 reset password



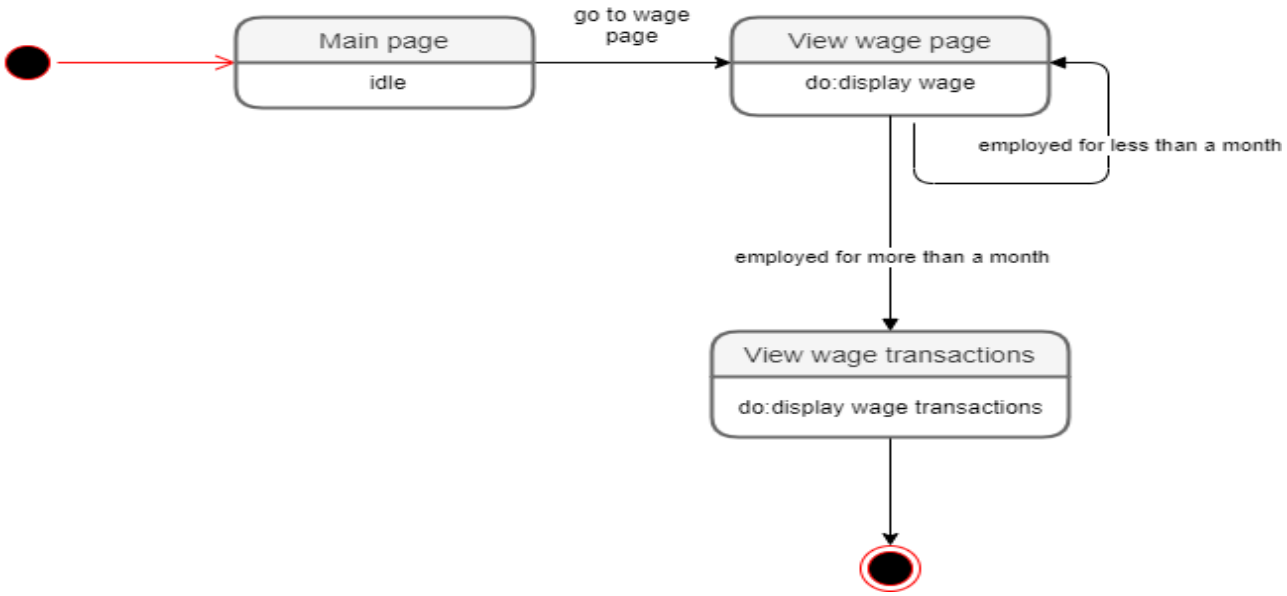
St-03 register account



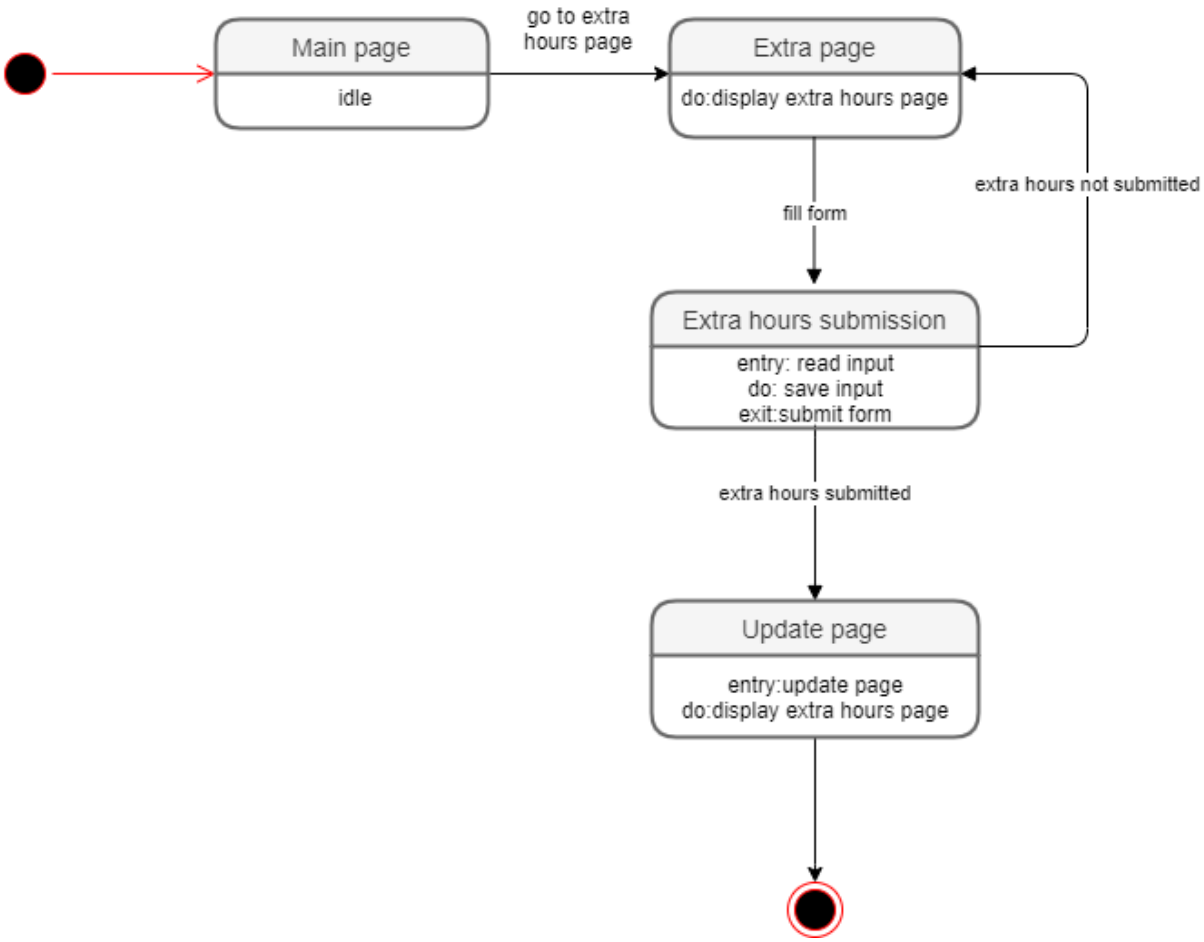
St-04 shift



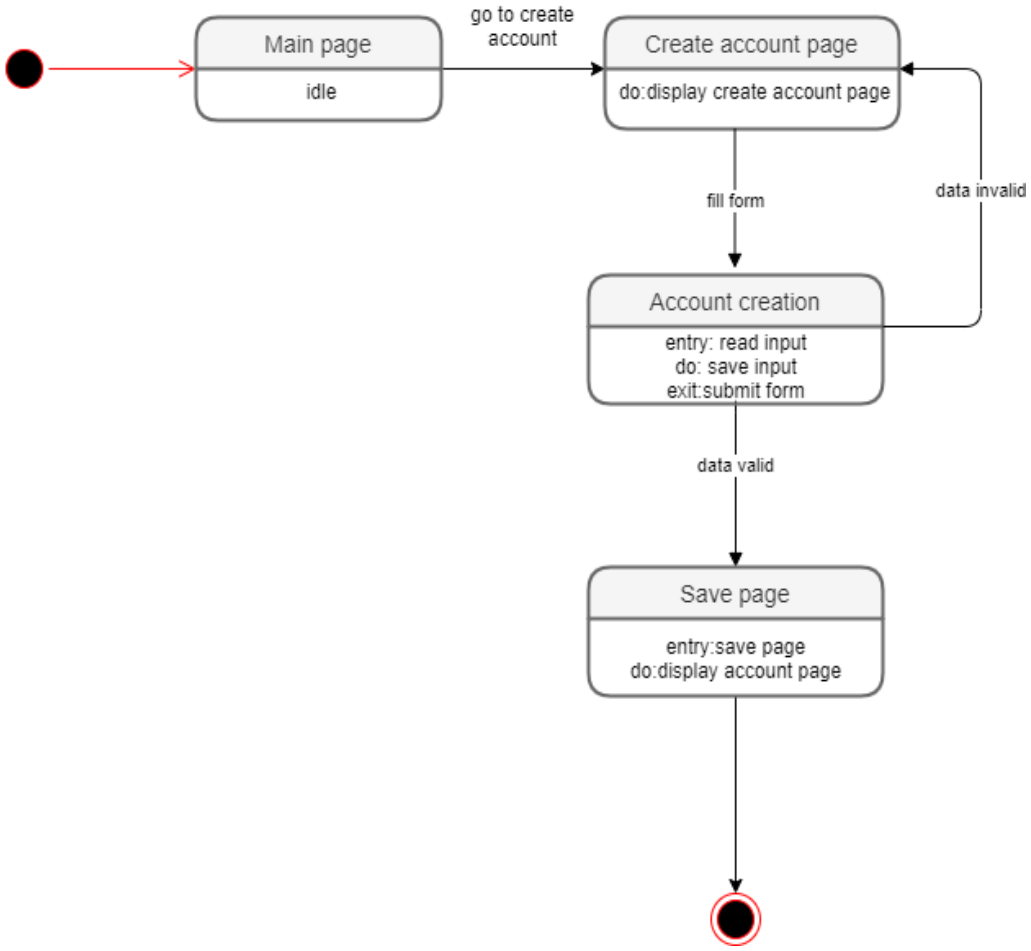
St-05 wage



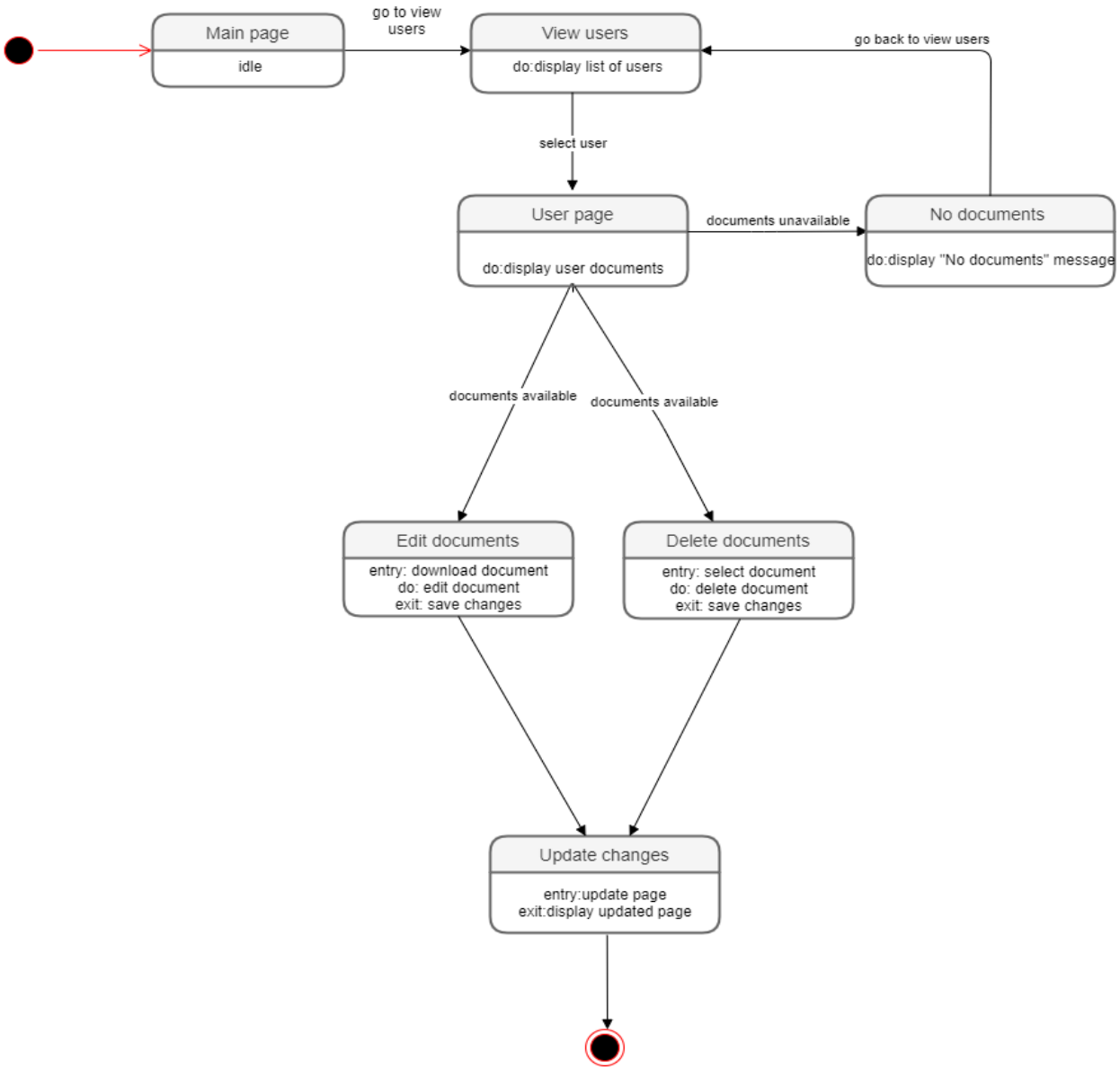
St-06 extra hours



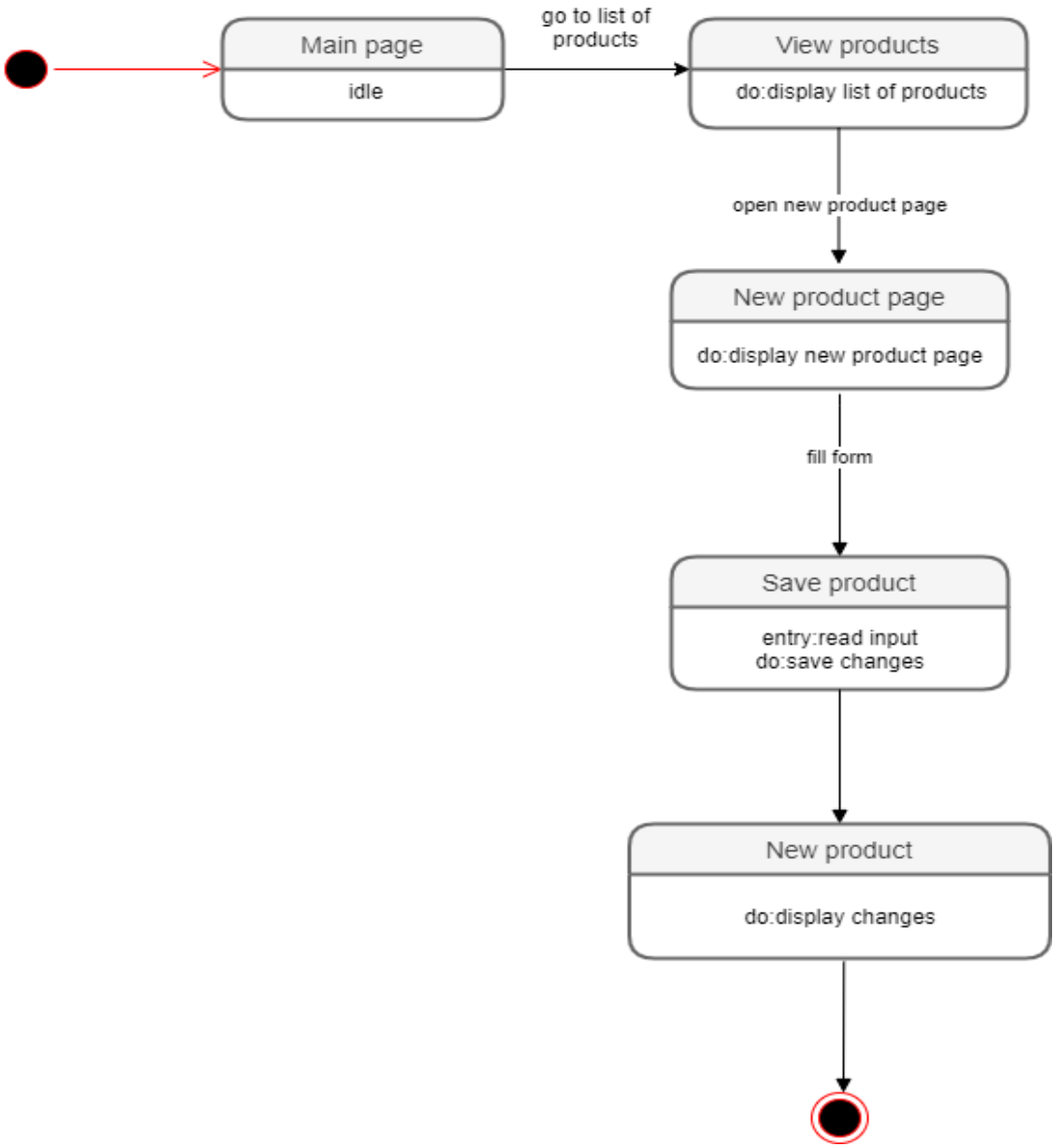
St-07.1 create account



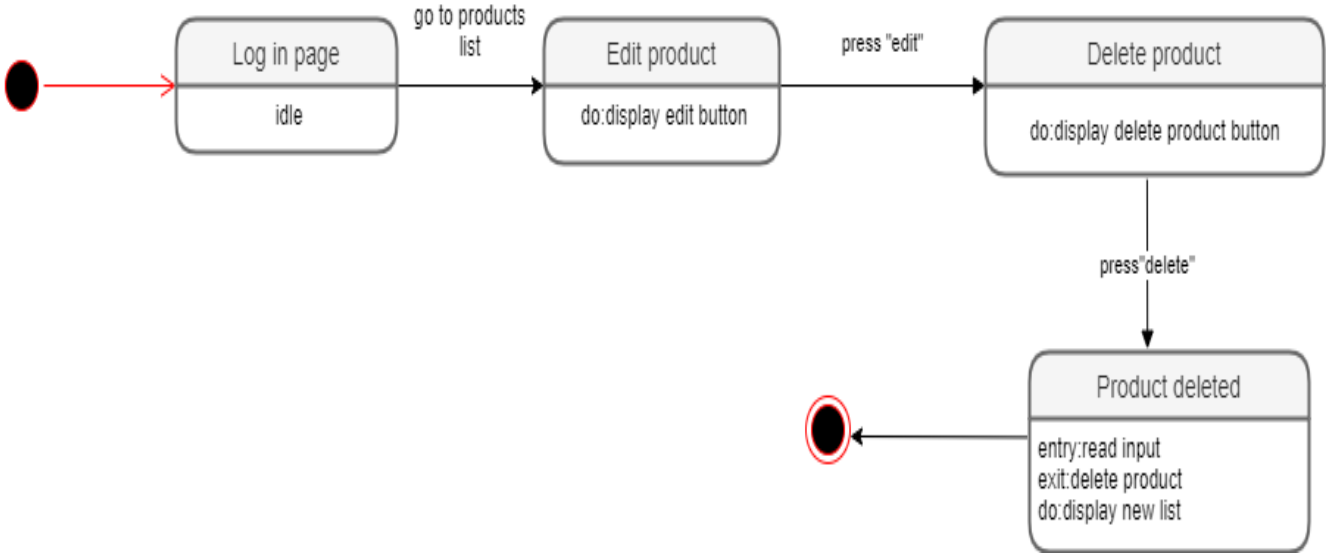
St-07.2_07.2.1_07.2.2 view edit delete user



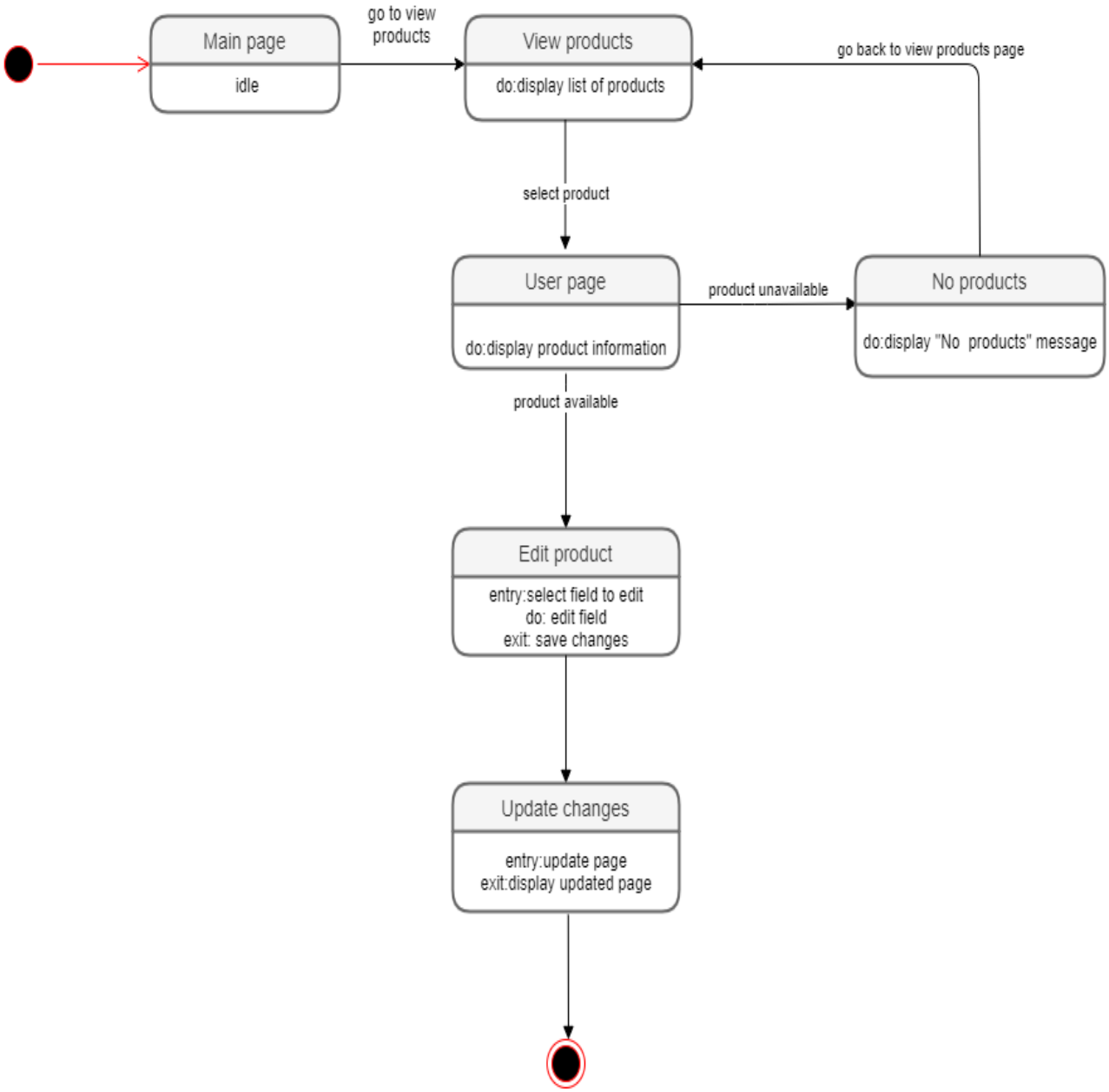
St-07.3.2 add new product



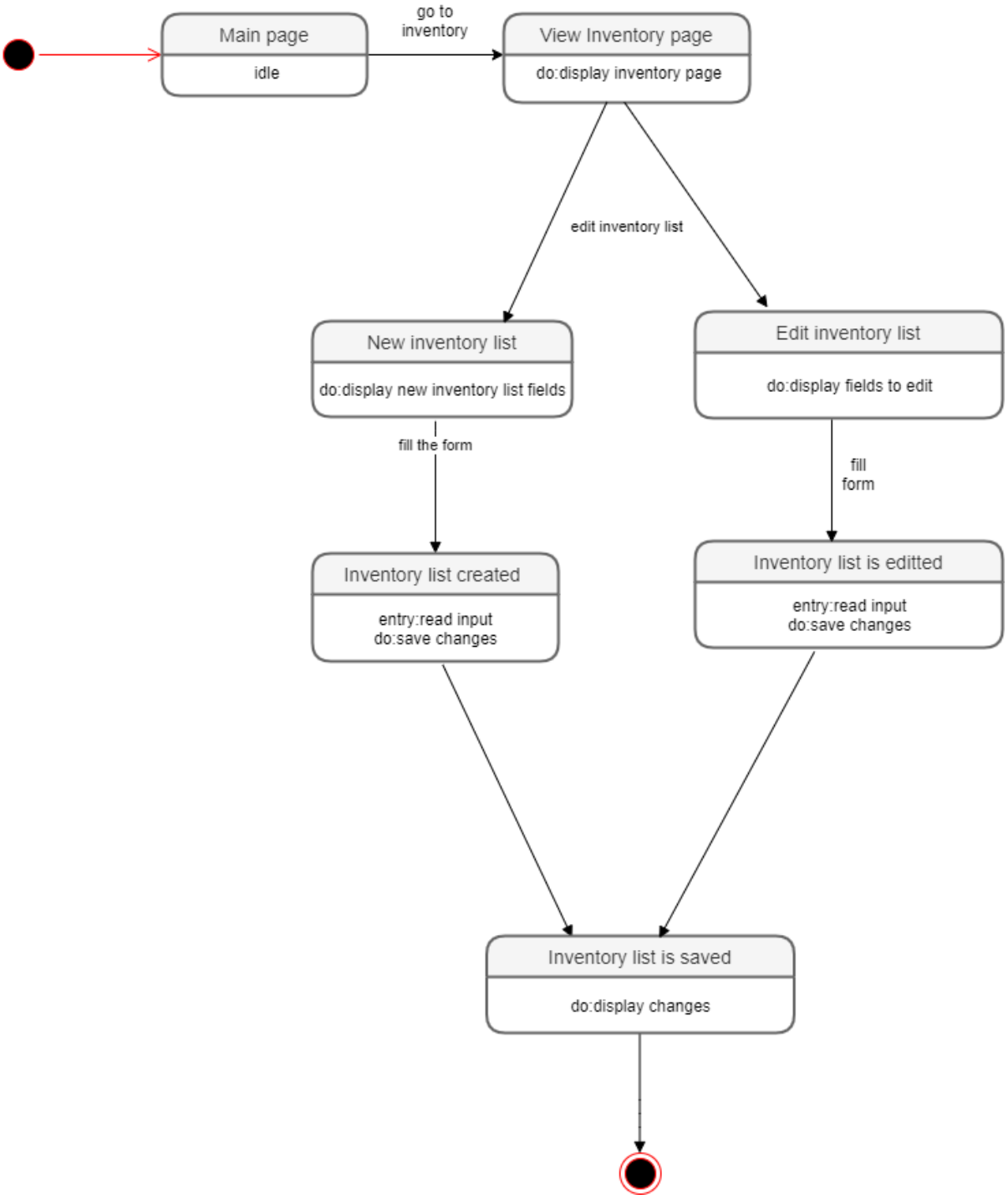
St-07.3.3 delete product



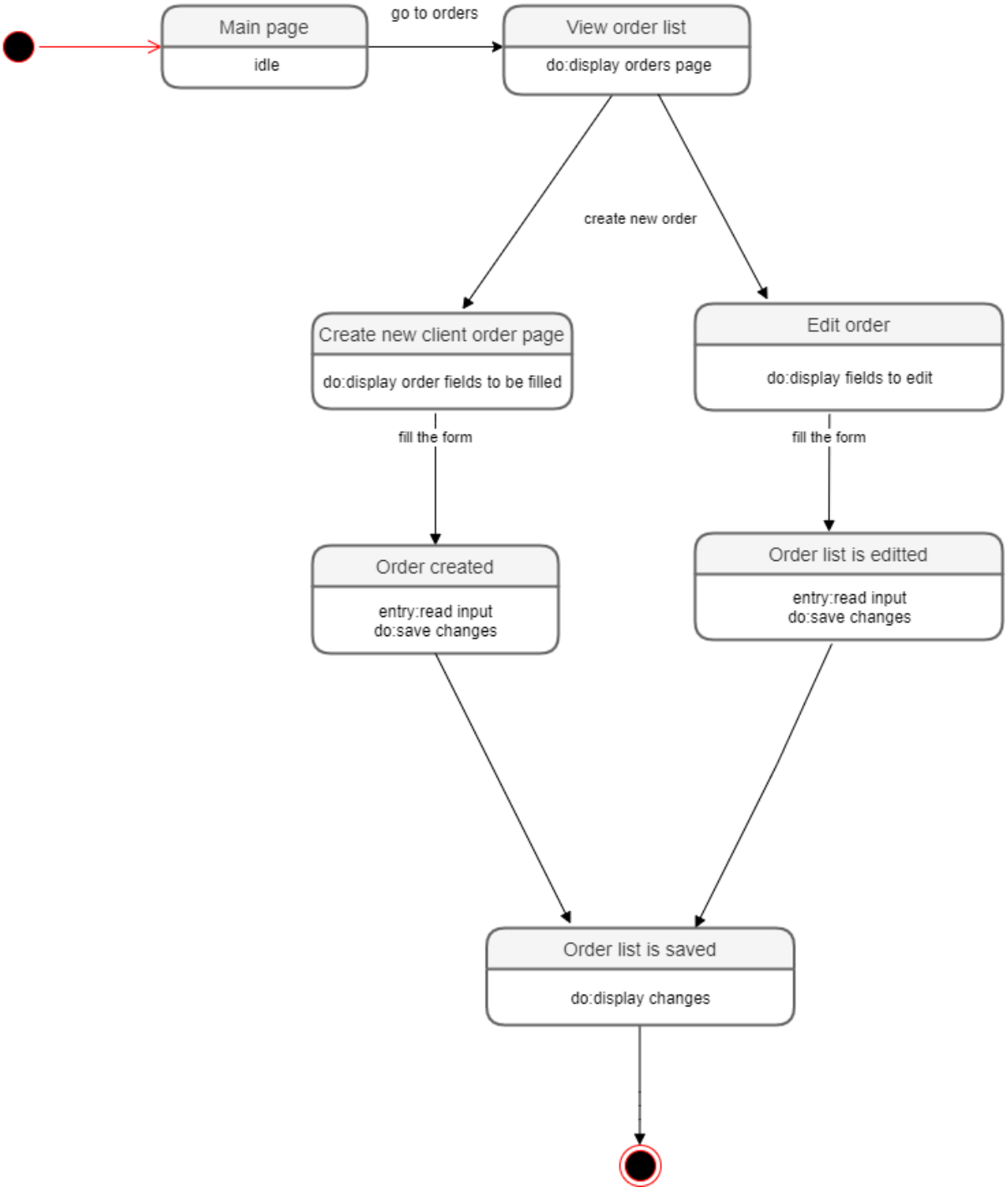
St-07.3_07.3.1_ view edit products



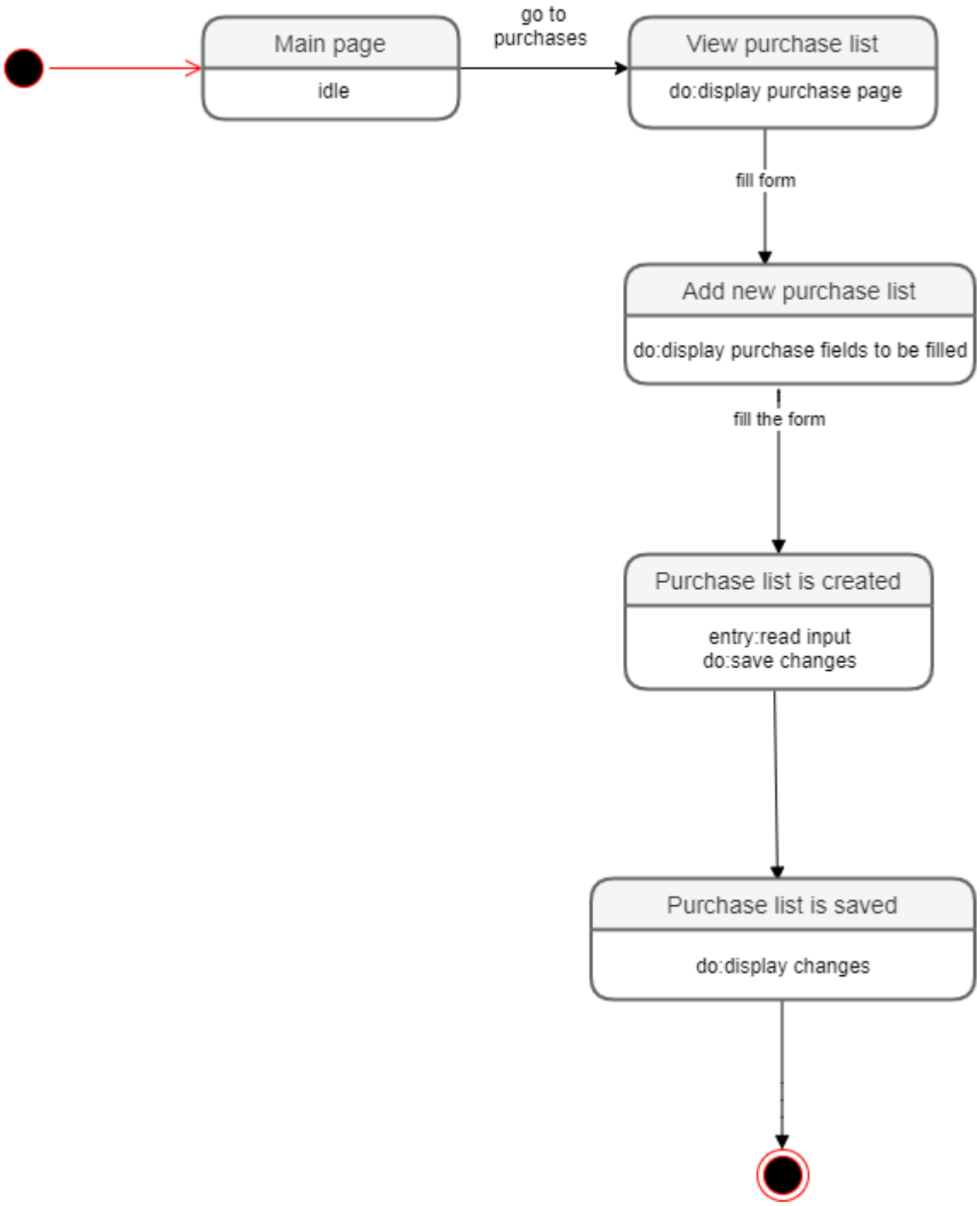
St-07.4_07.4.1_07.4.2 view manage create inventory



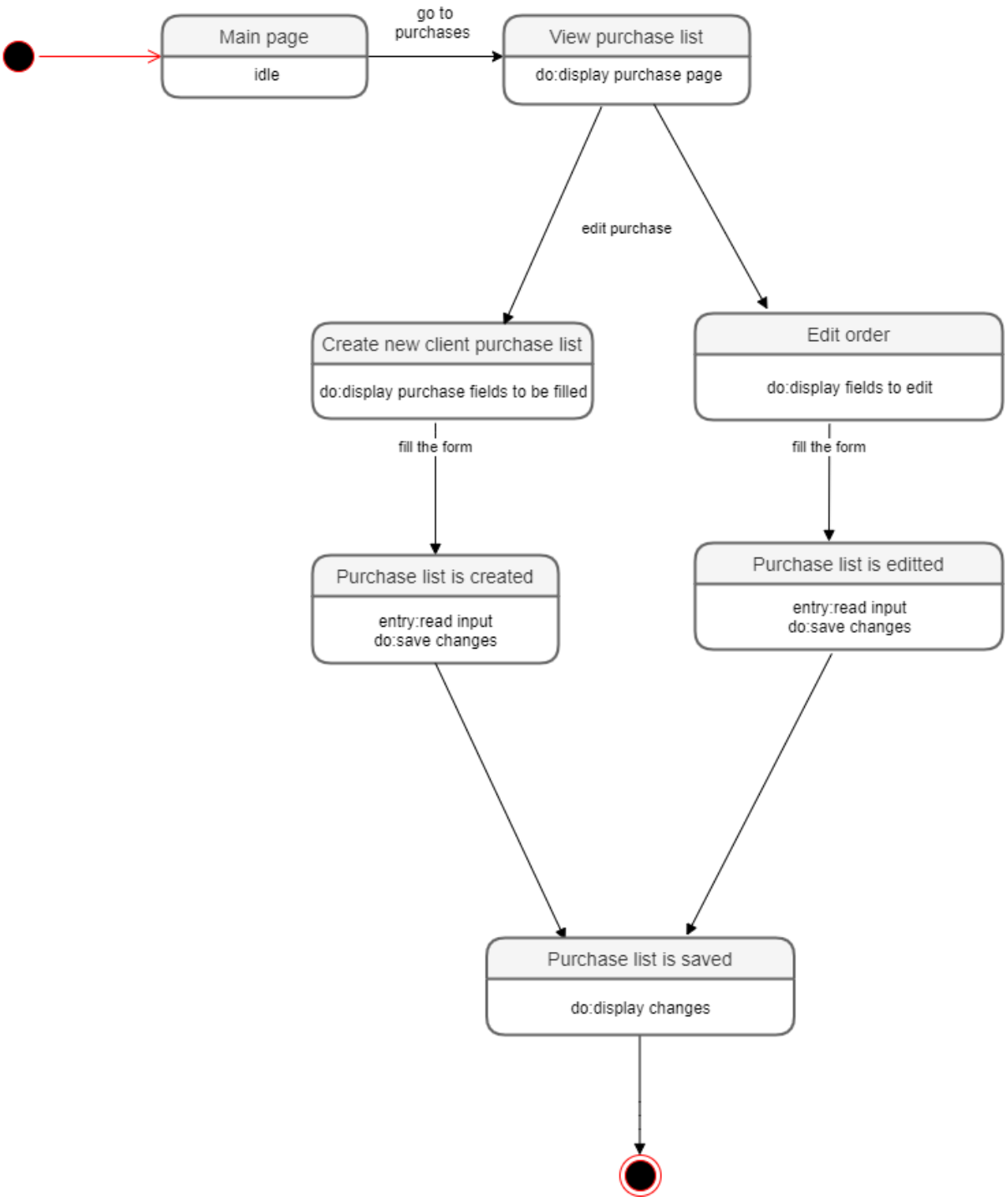
St-07.5_07.5.1_07.5.2 edit orders, add clients order to the system when order was not placed online by the client himself



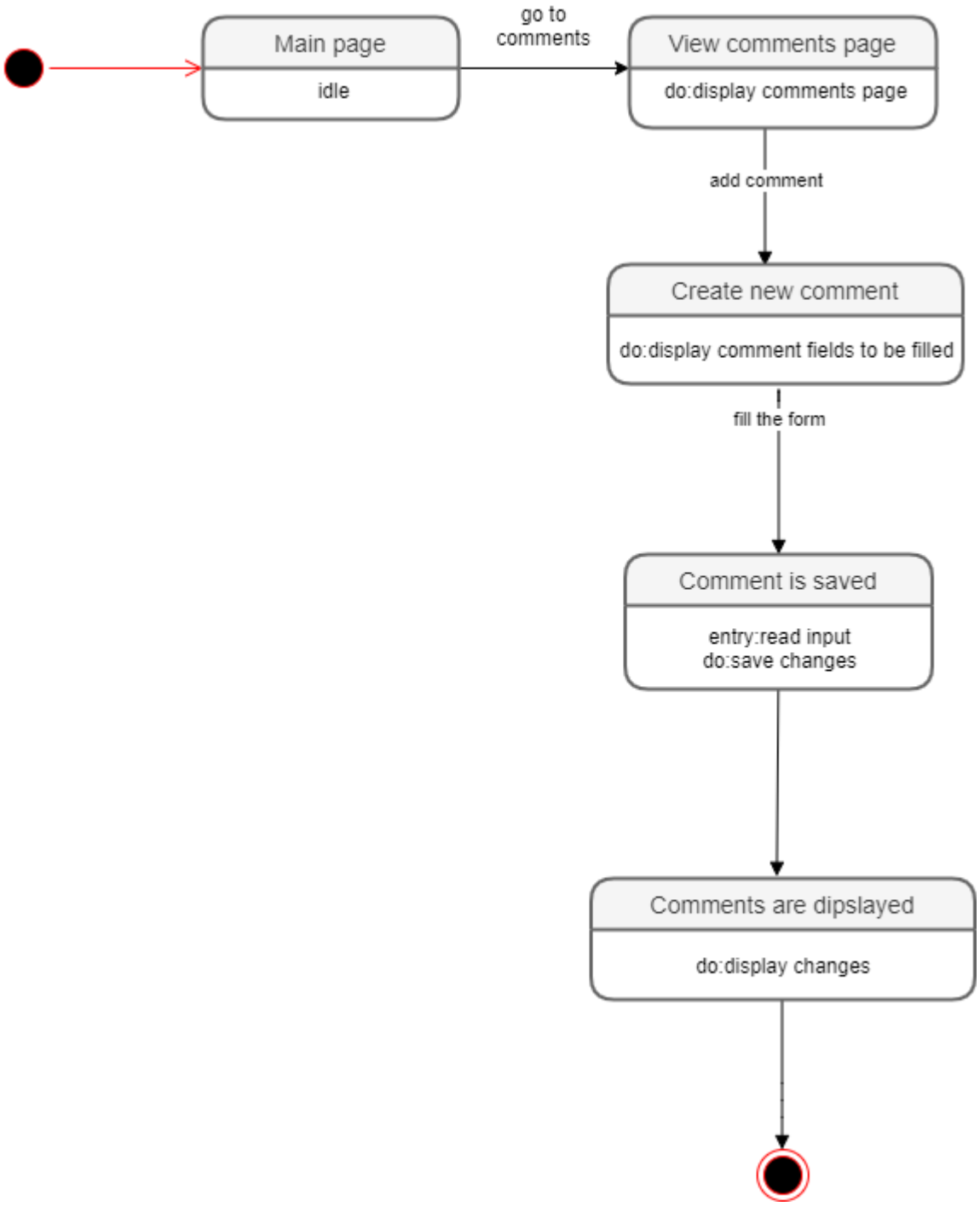
St-07.6.3 add purchase



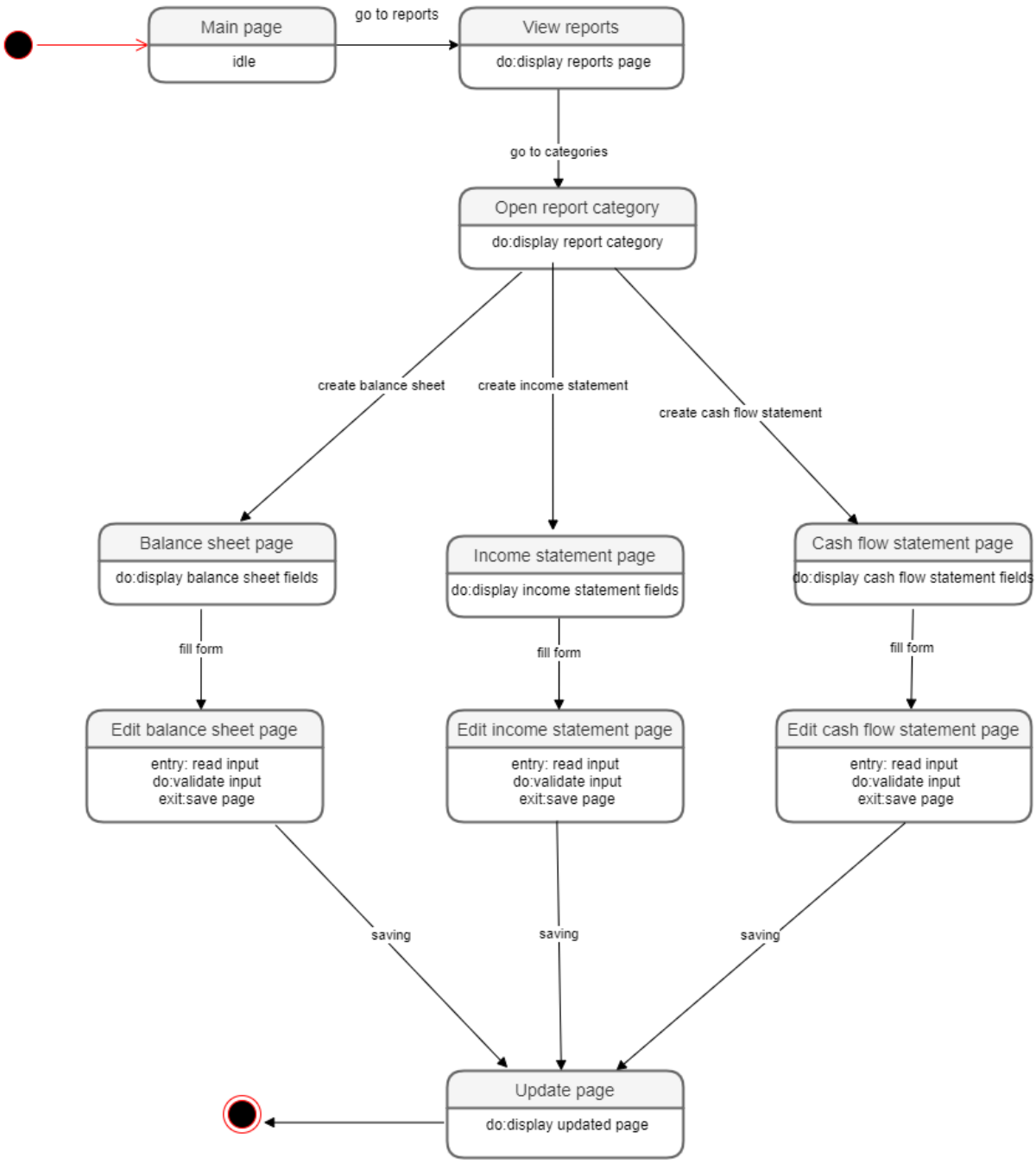
St-07.6_07.6.1_07.6.2 view create edit purchases



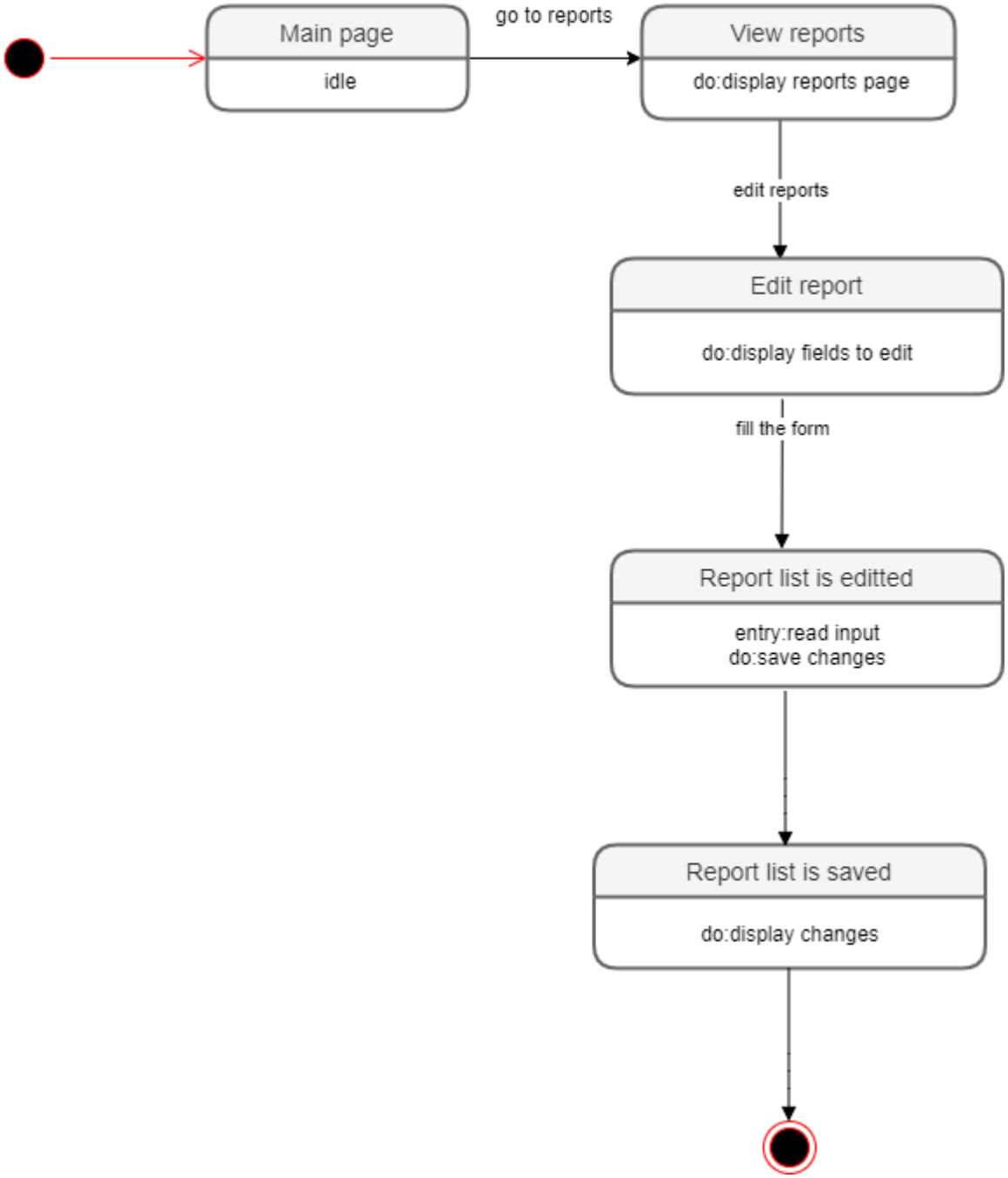
St-07.7 view comments



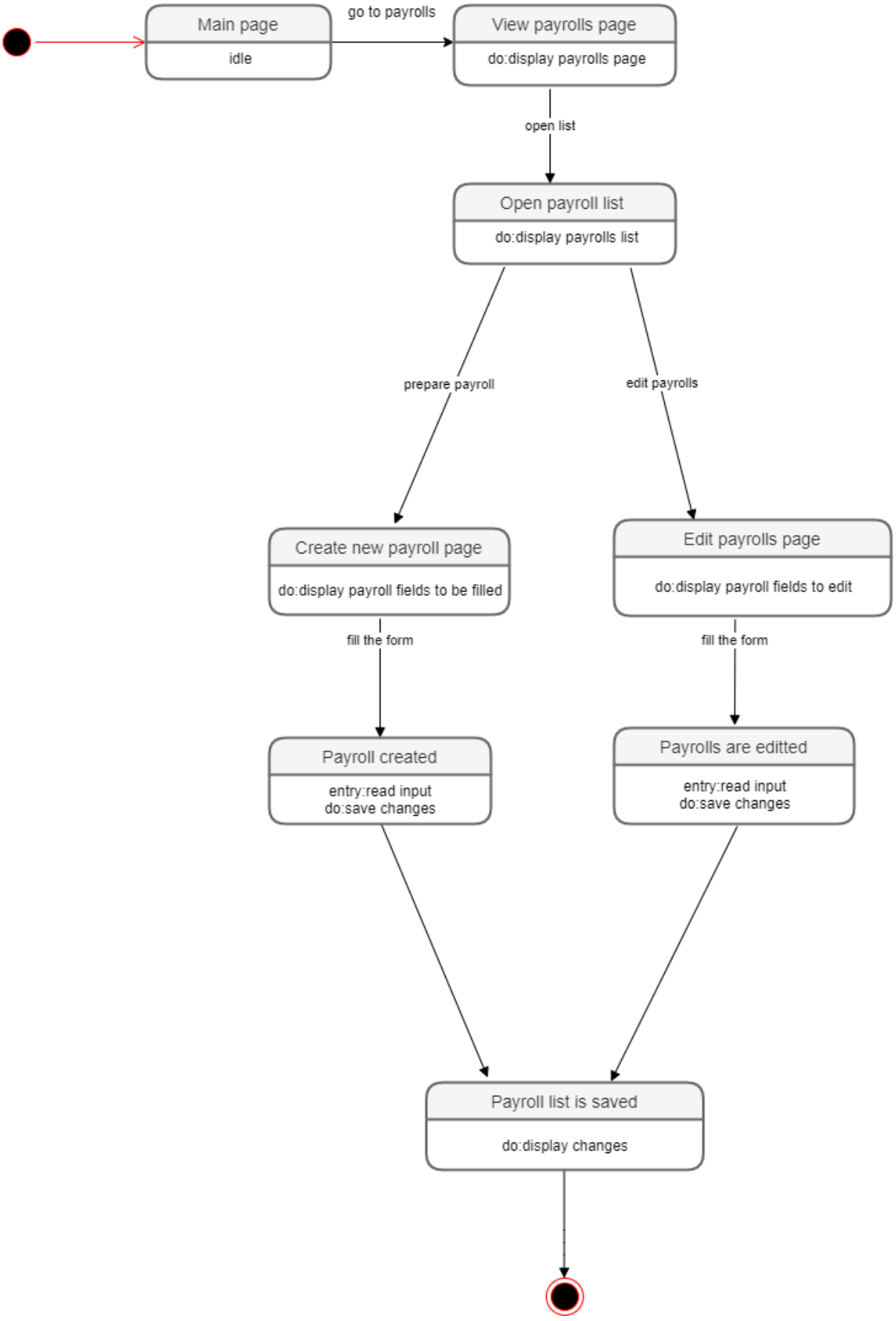
St-07.8.1 reports



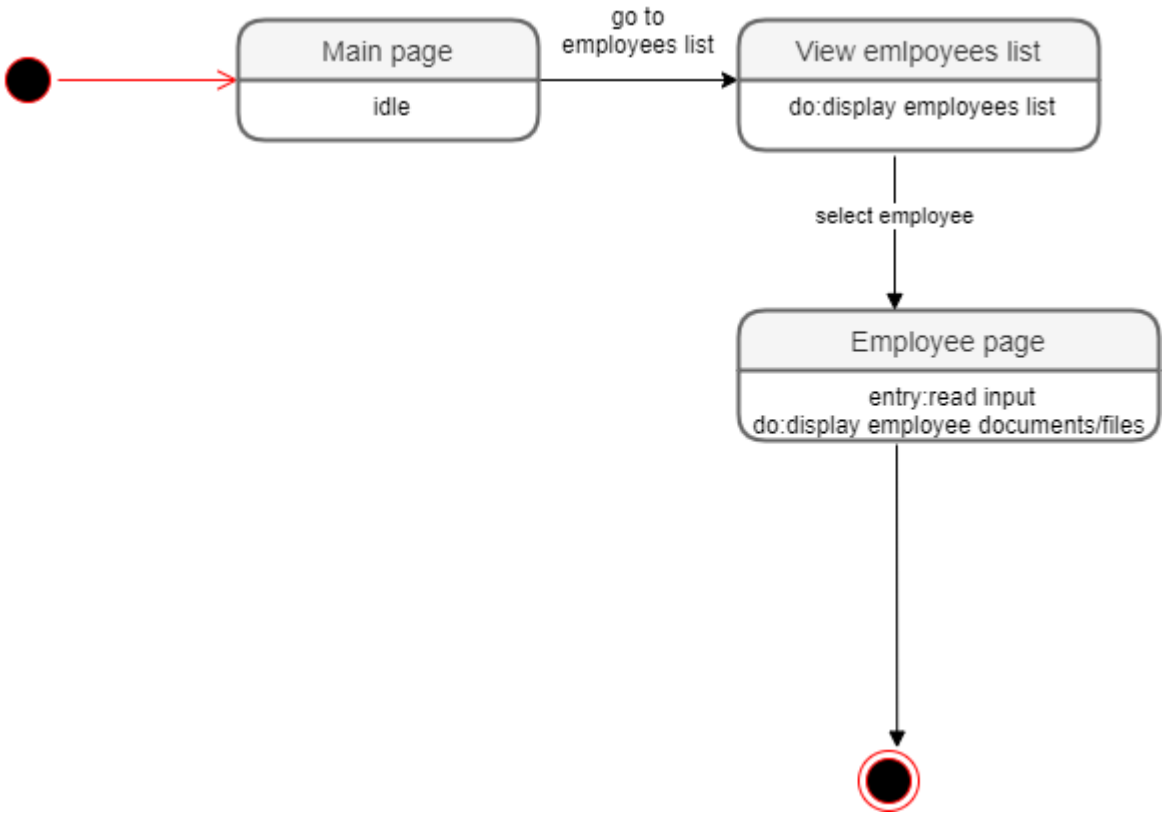
St-07.8_07.8.2 reports view/edit



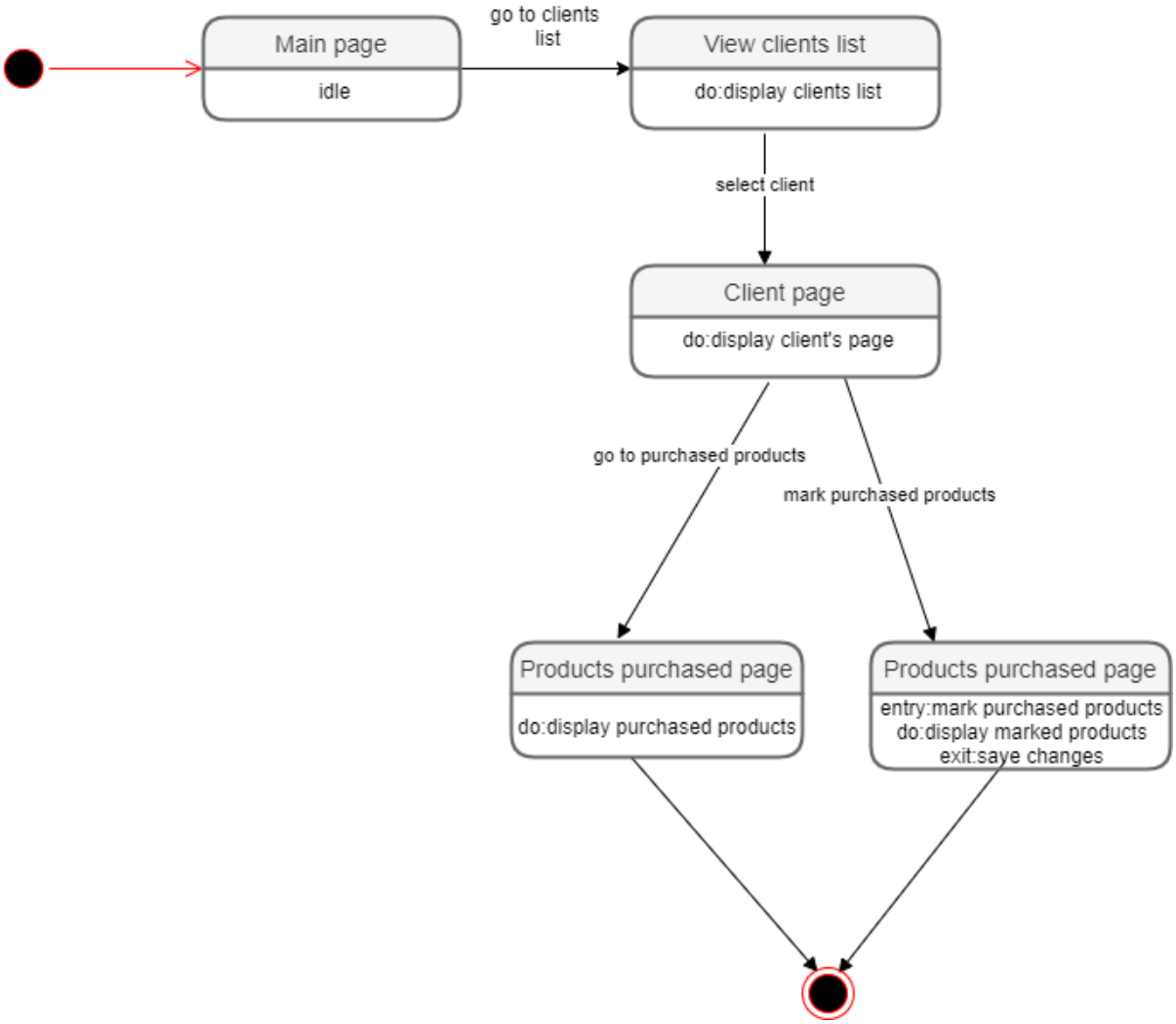
St-07.9_07.9.1_07.9.2 view edit prepare payrolls



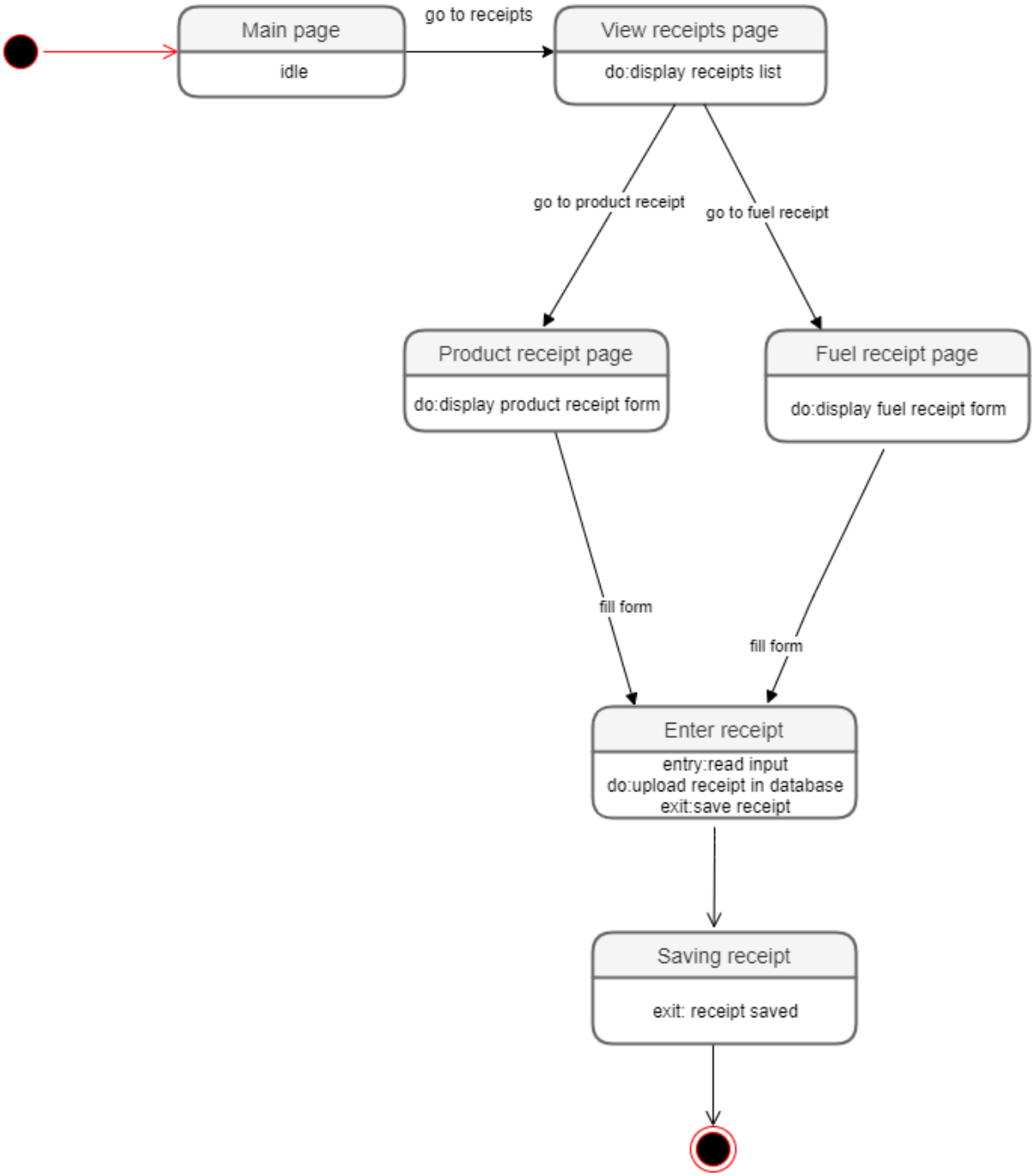
St-07.10 view employees



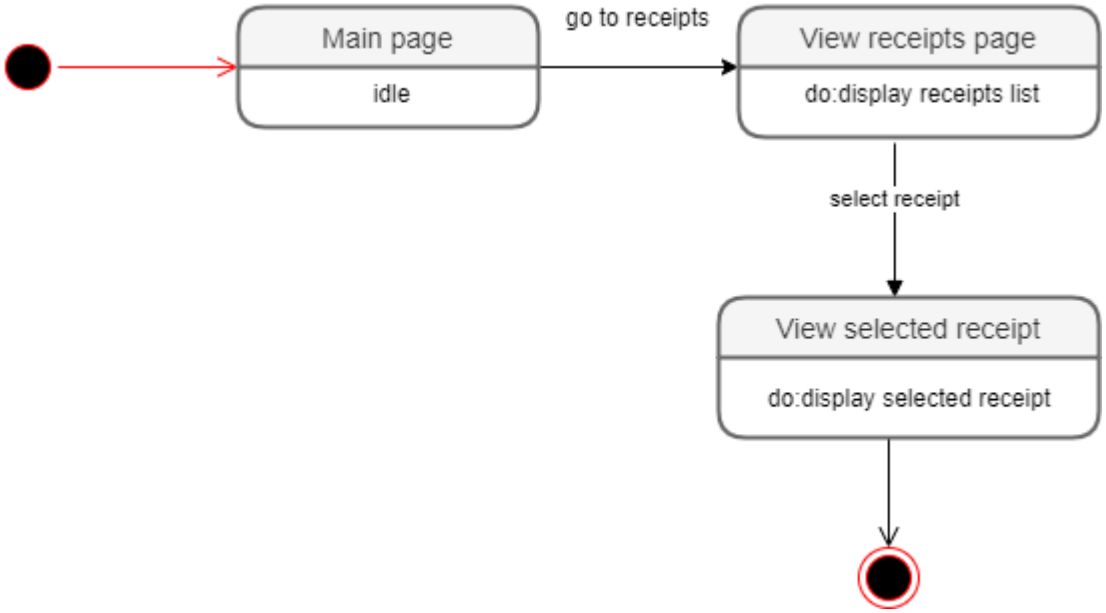
St-07.11 view clients



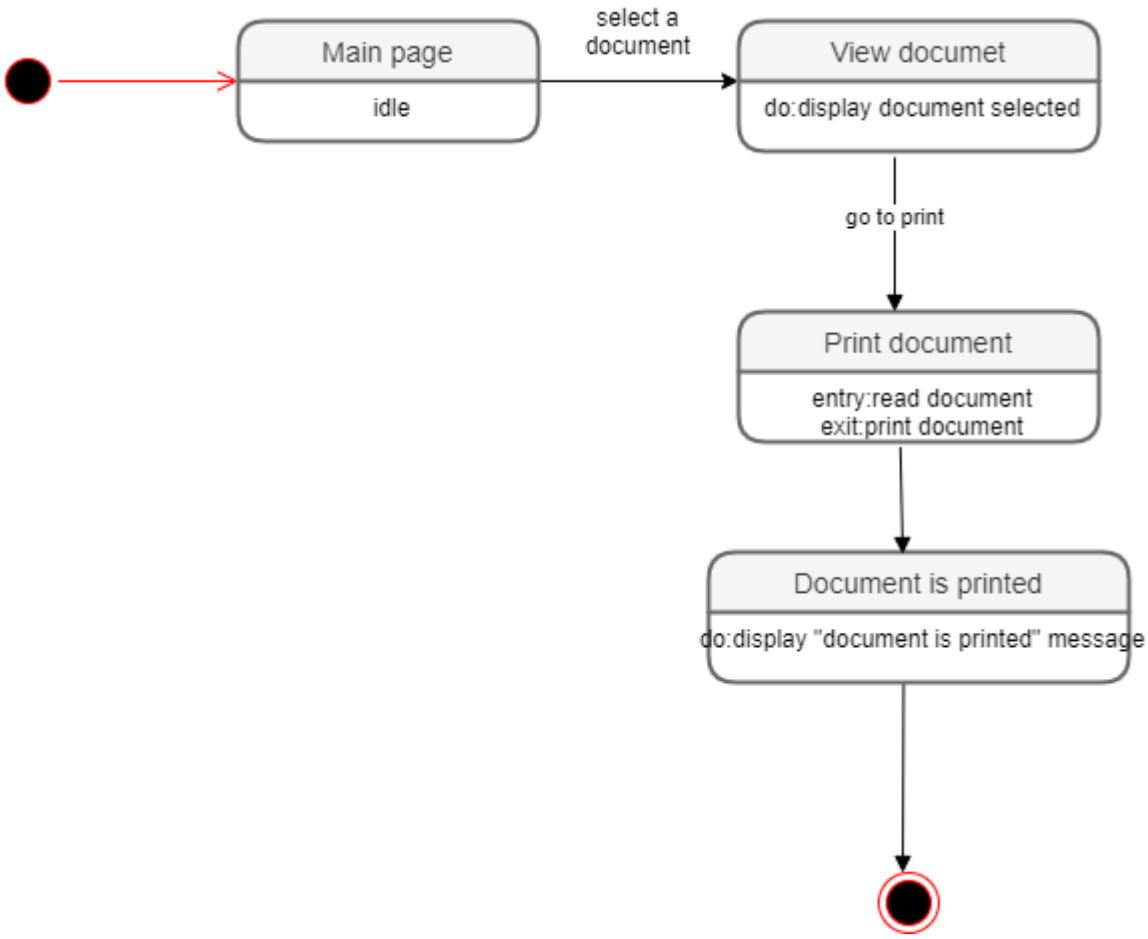
St-08.1_08.2 added product/fuel receipts



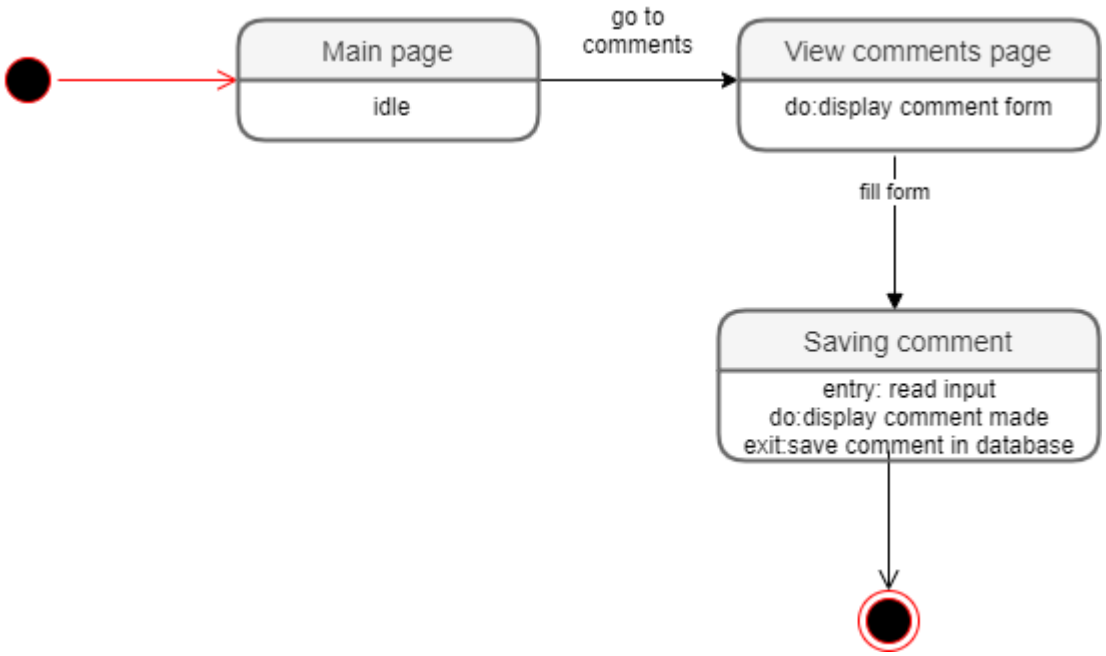
St-08.3 view receipts



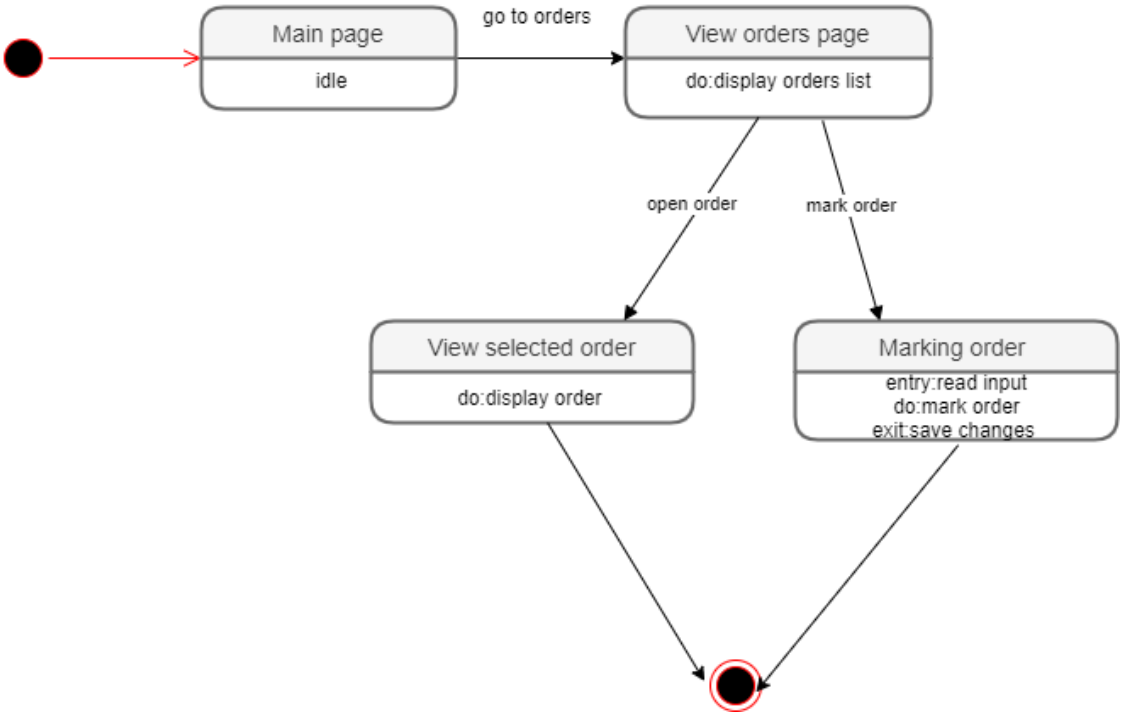
St-09 printed document



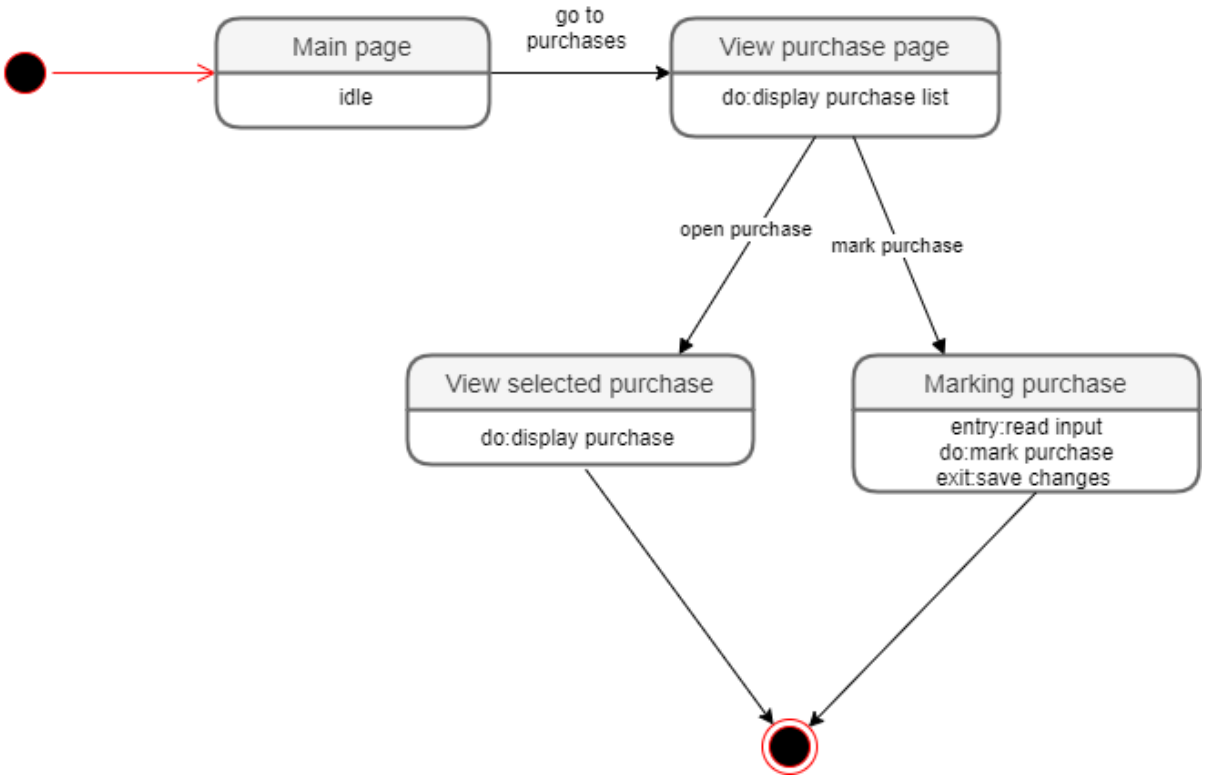
St-10 view comments



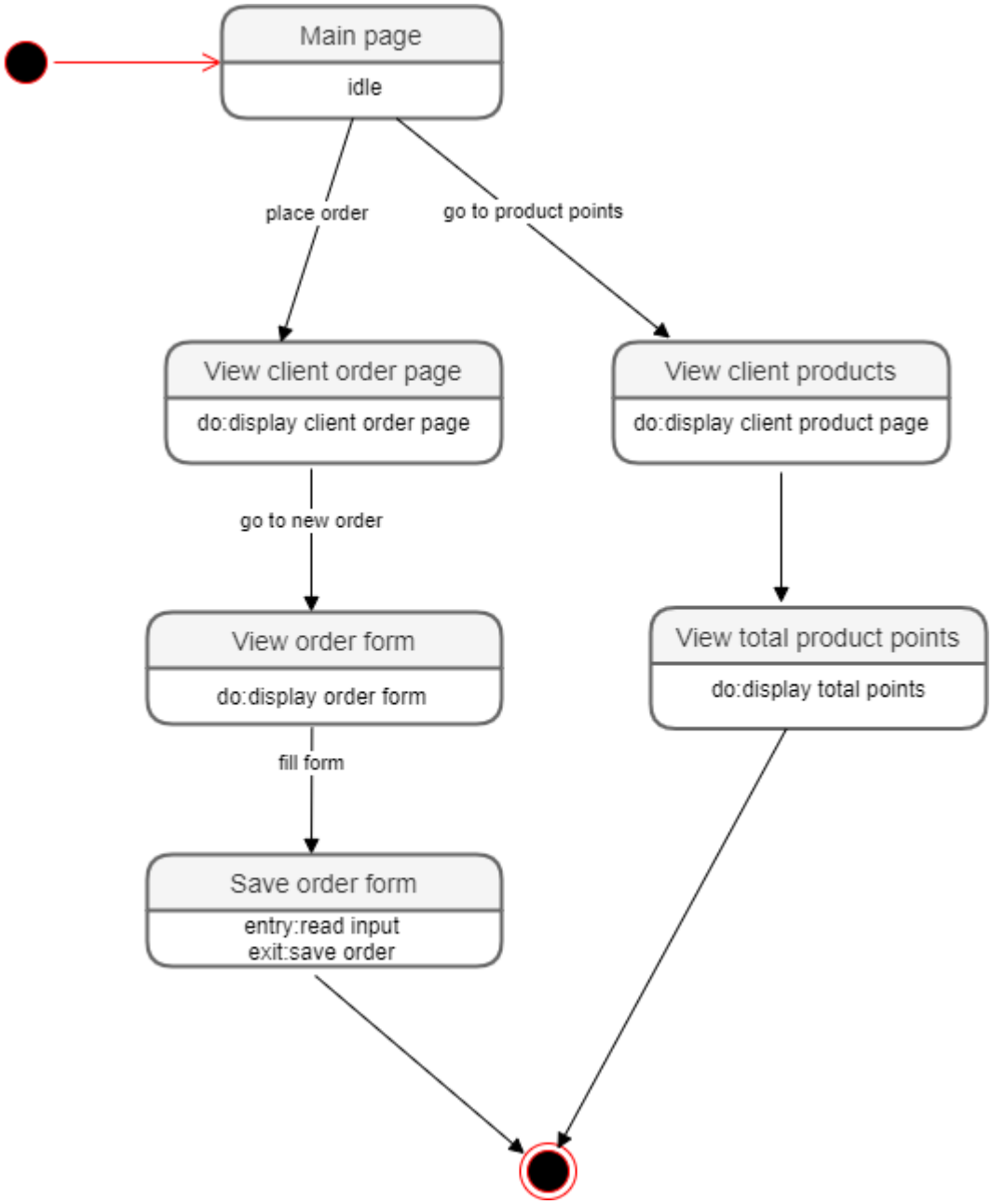
St-11.1 driver views/marks order



St-11.2 driver views/marks purchases

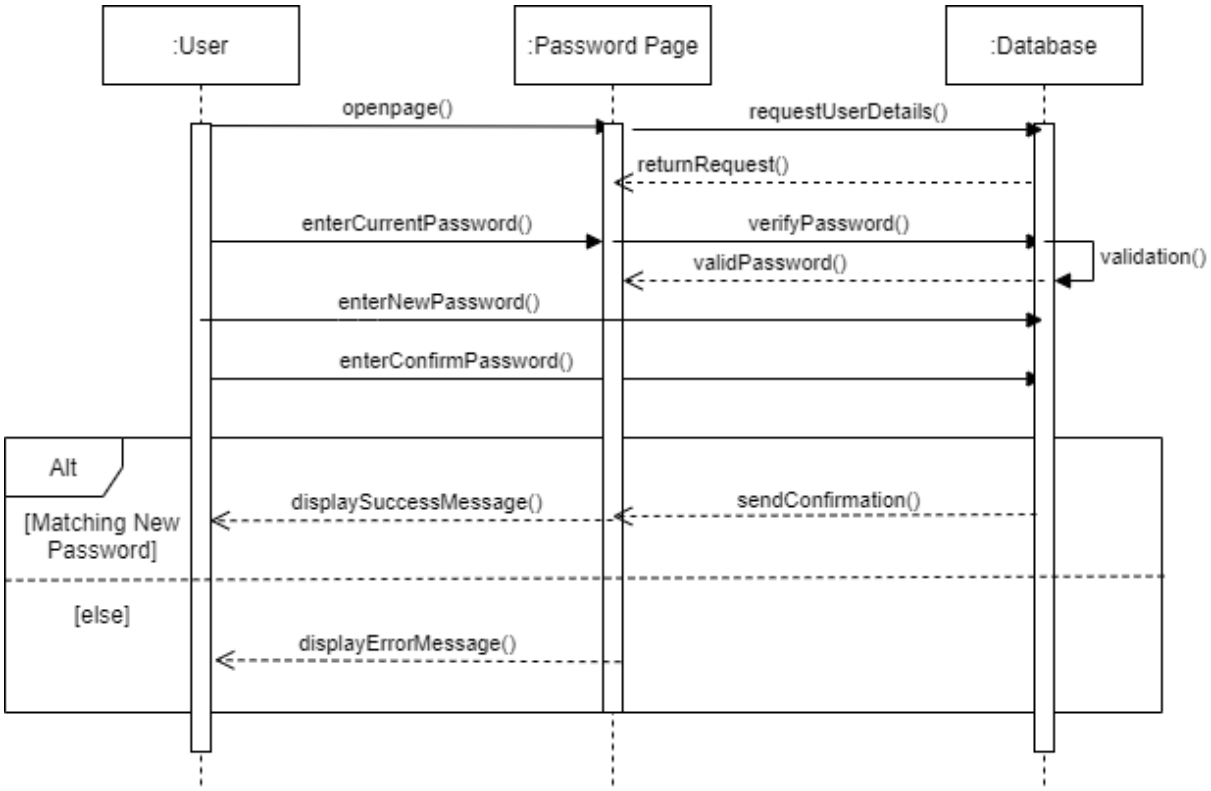


St-12.1_12.2 client order/points purchased

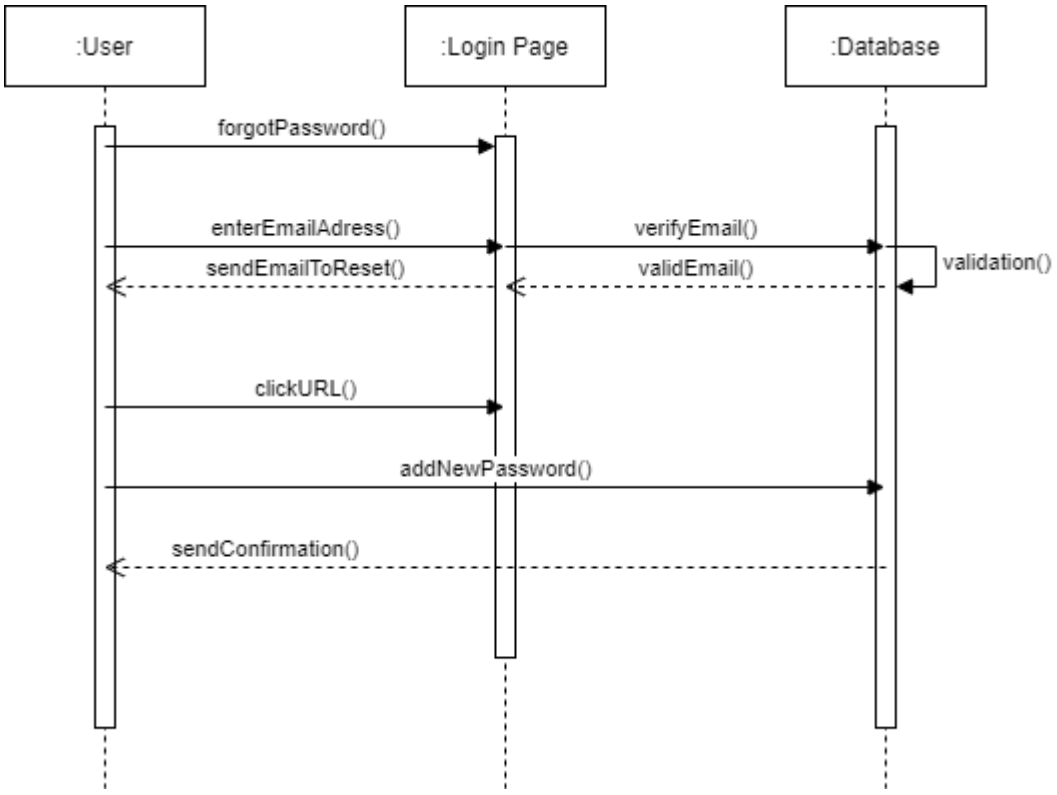


4.6 Sequence Diagrams

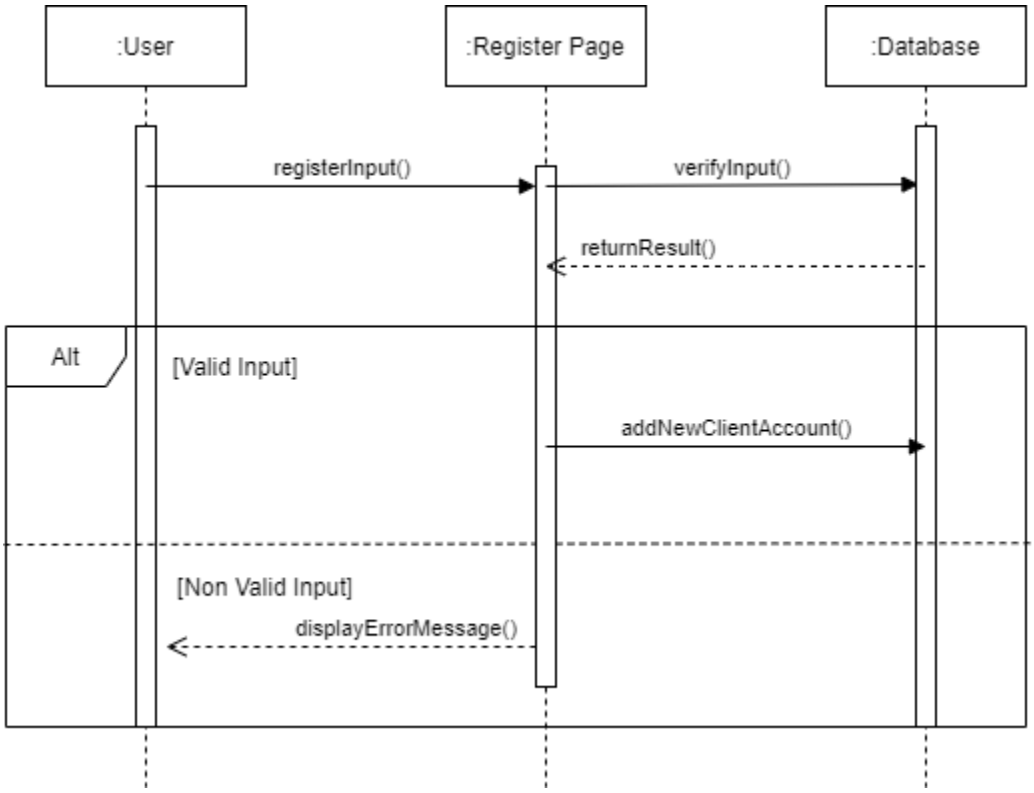
SQ_01_Change Password



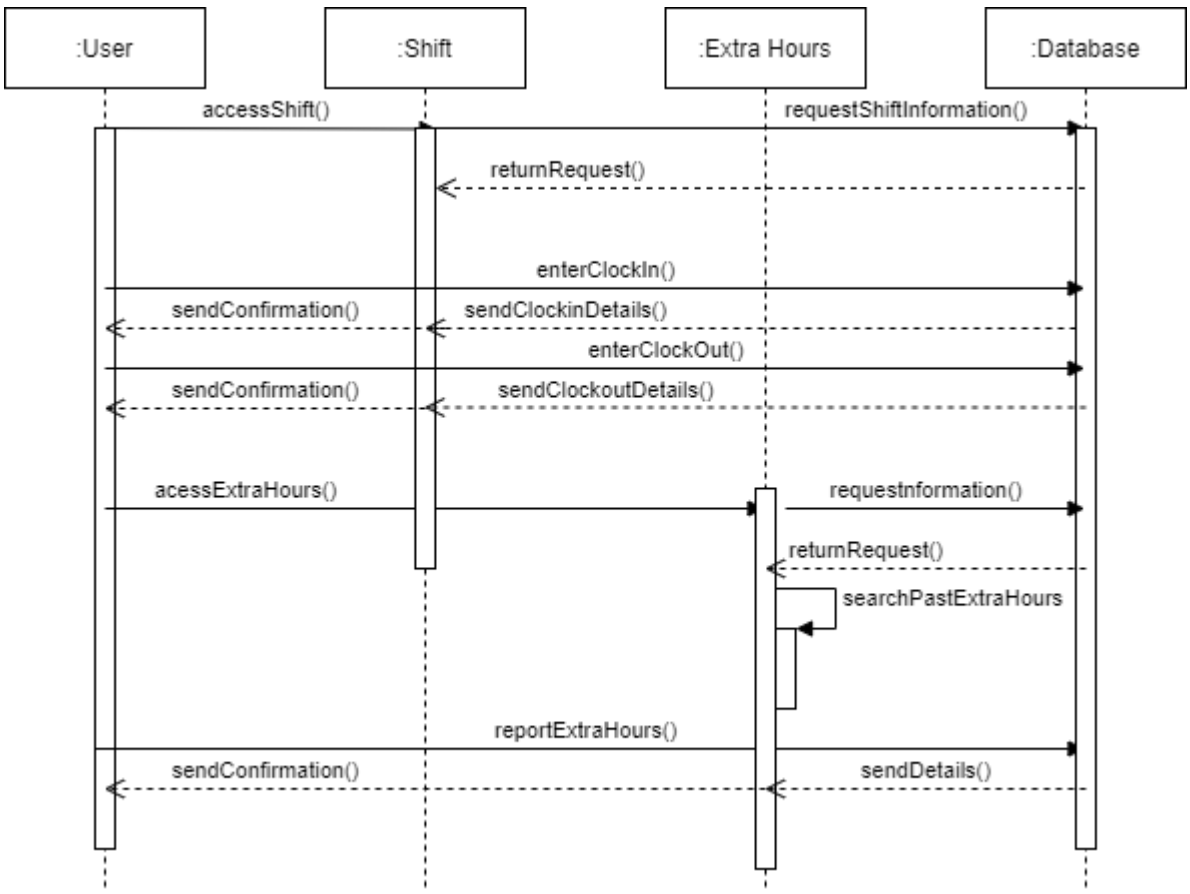
SQ_02_Reset Password



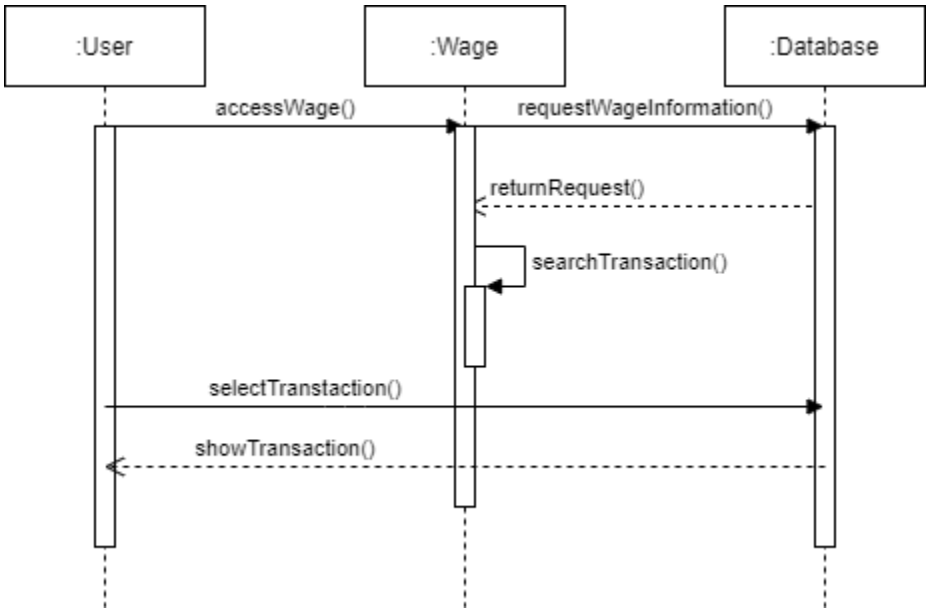
SQ_03_Register Client Account



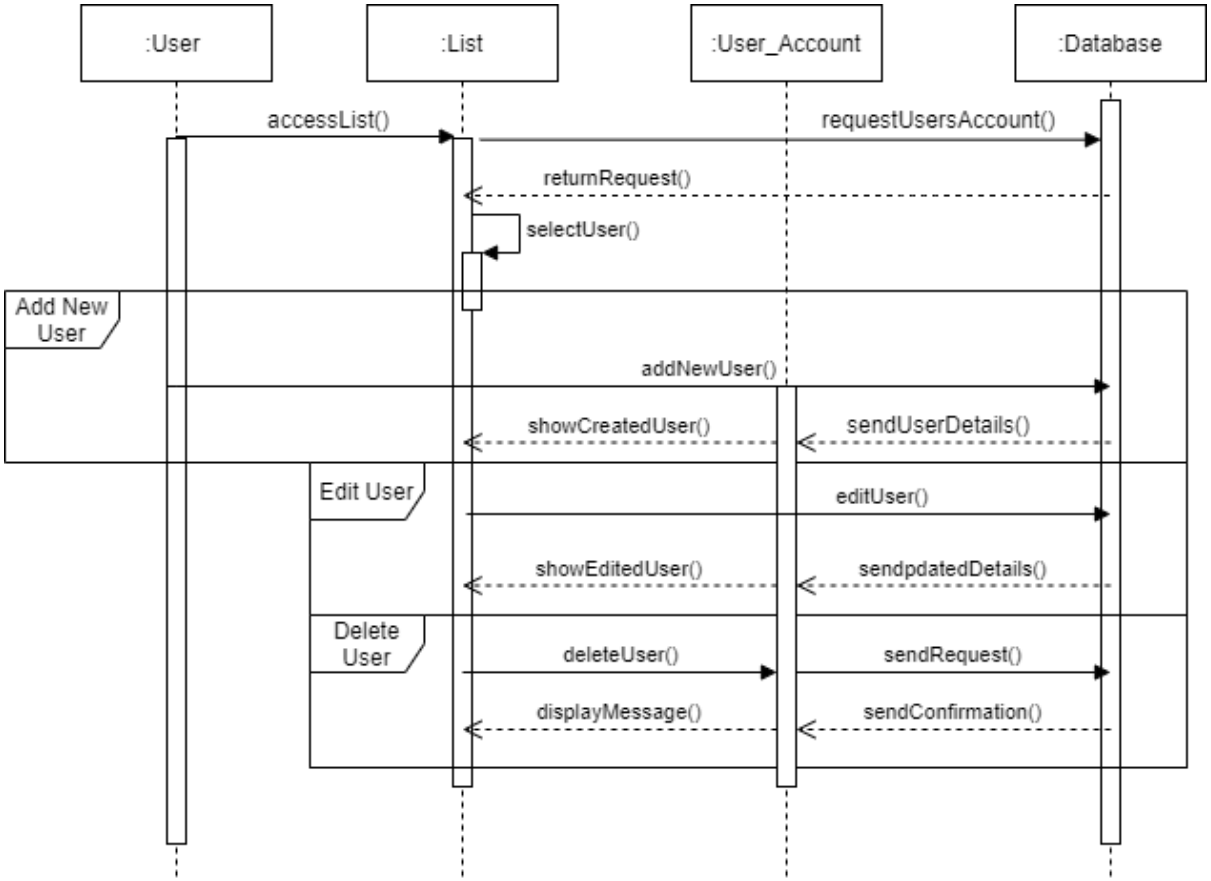
SQ_04_06_Shift and Extra Hours



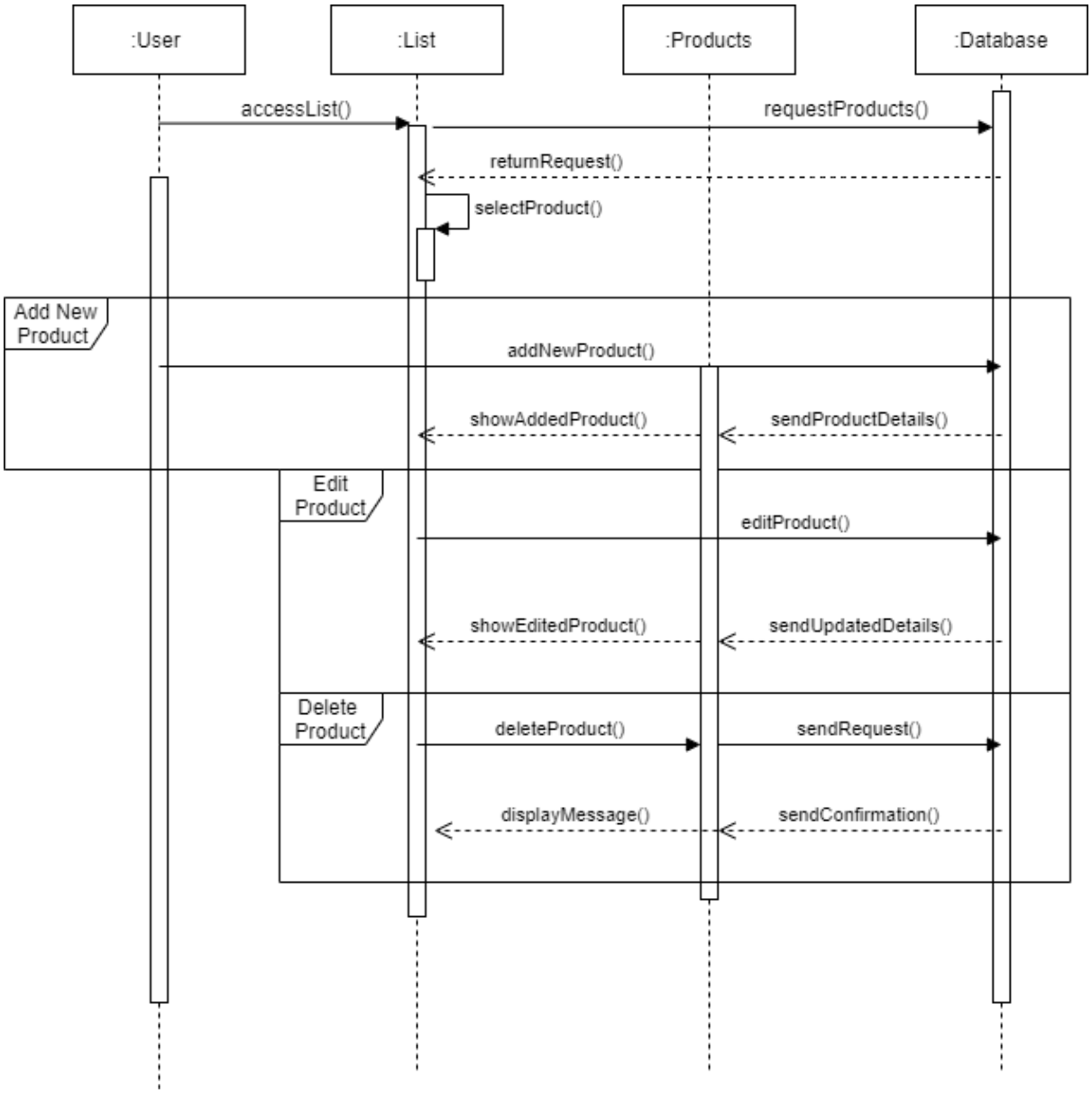
SQ_05_View Wage



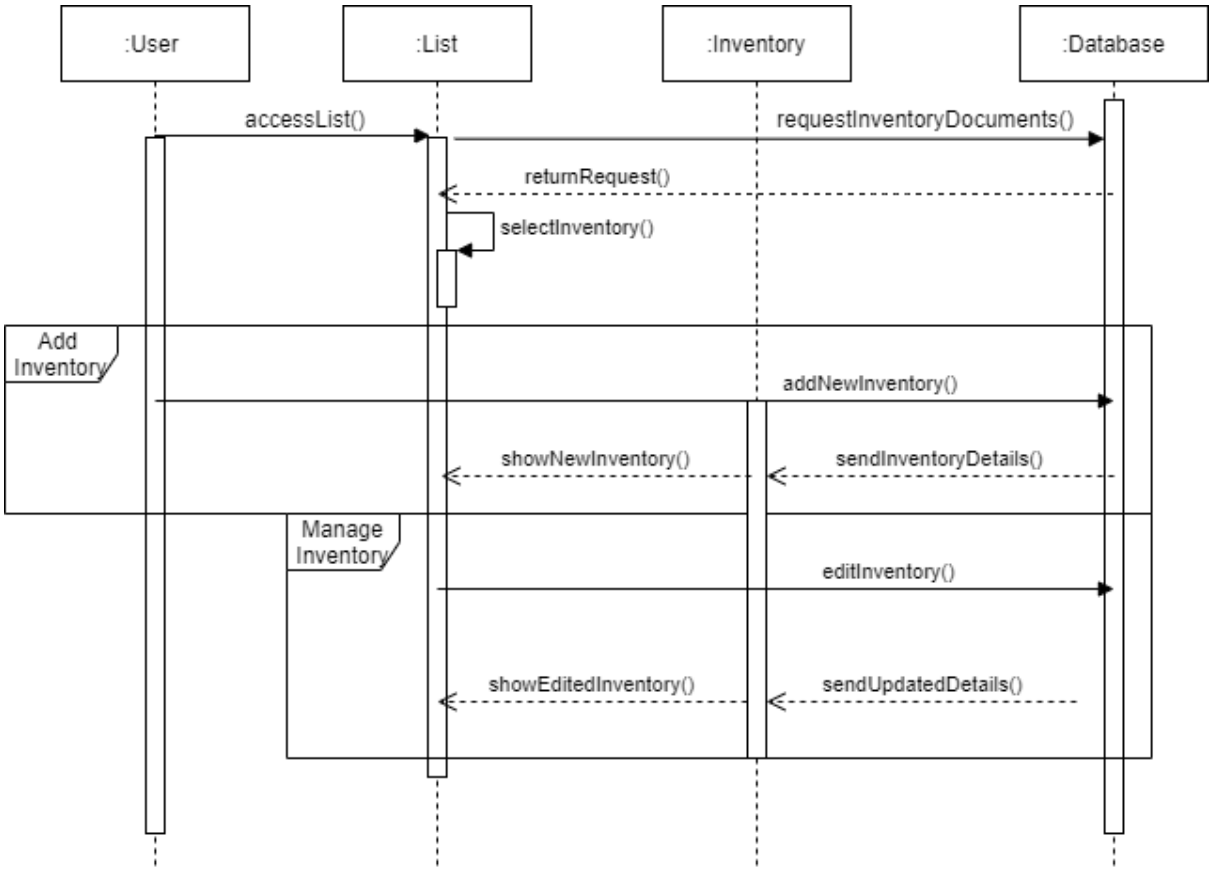
SQ_07.1_07.2_07.2.1_07.2.2_Create View Edit Delete User



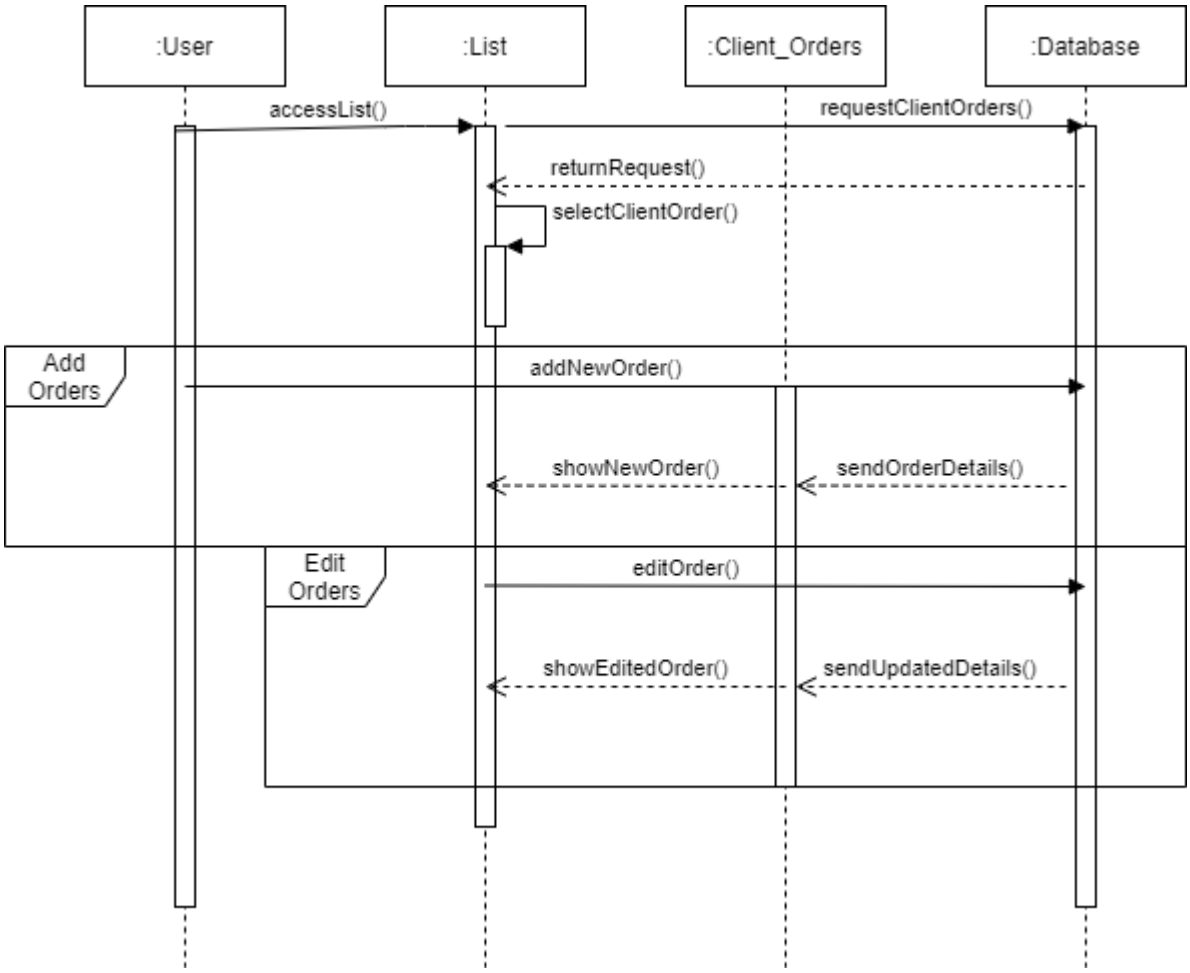
SQ_07.3_07.3.1_07.3.2_07.3.3_Add View Edit Delete Product



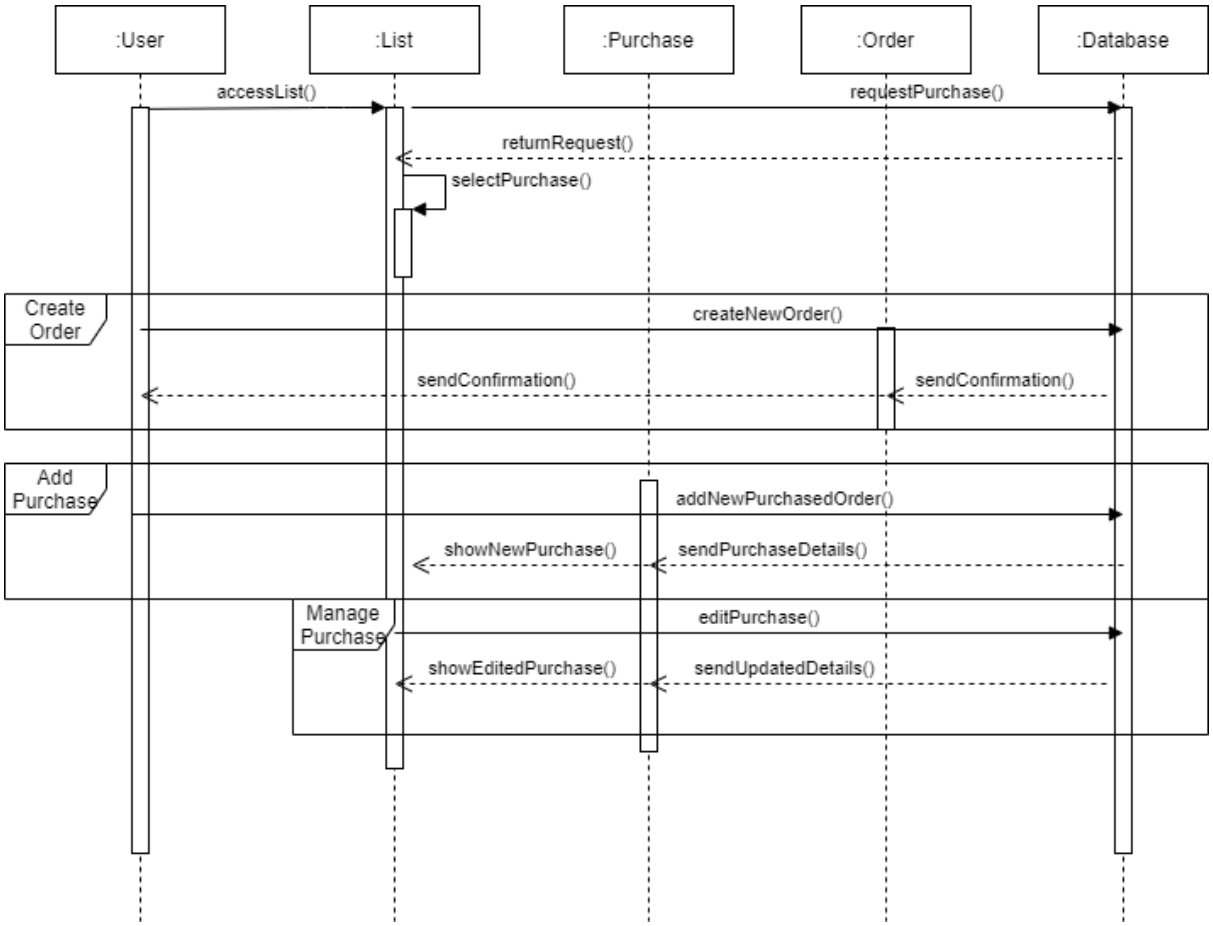
SQ_07.4_07.4.1_07.4.2_Create View Manage Inventory



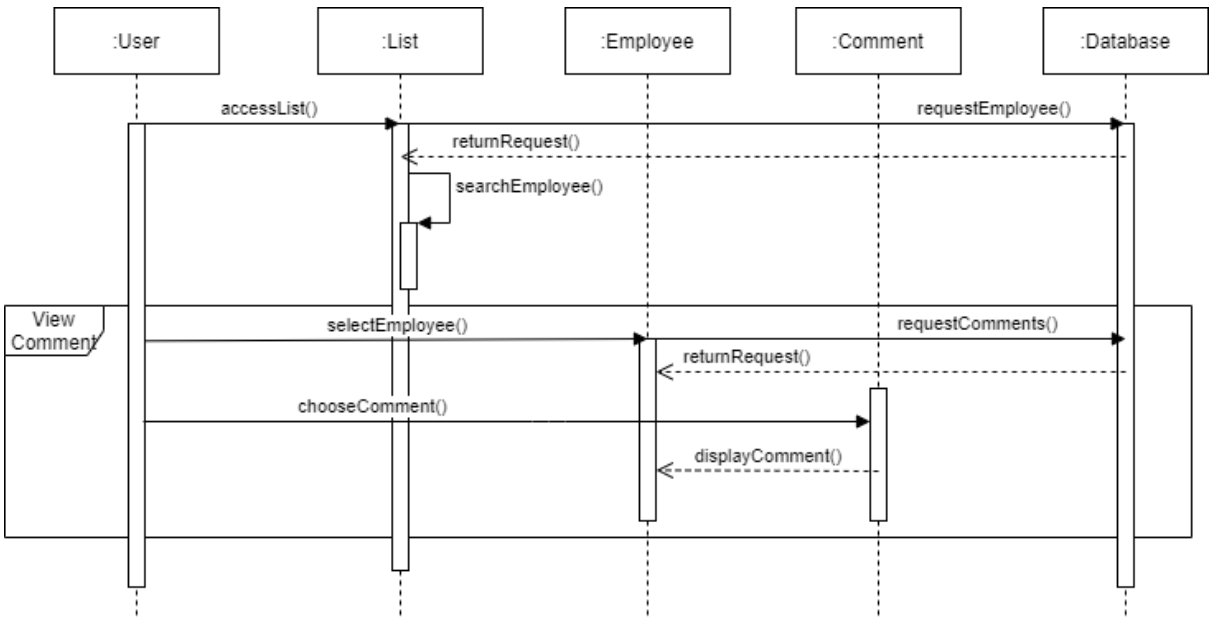
SQ_07.5_07.5.1_07.5.2_View Edit Add Client Order



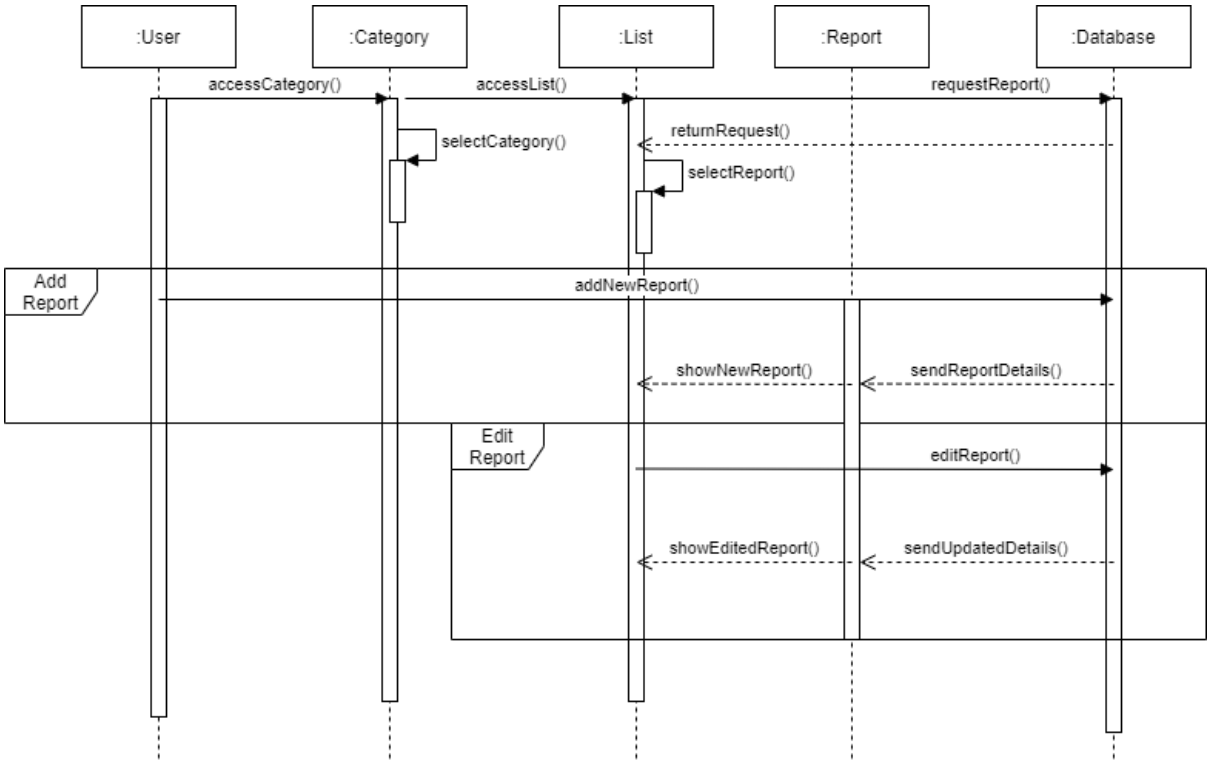
SQ_07.6_07.6.1_07.6.2_07.6.3_View Create Manage Add Purchase



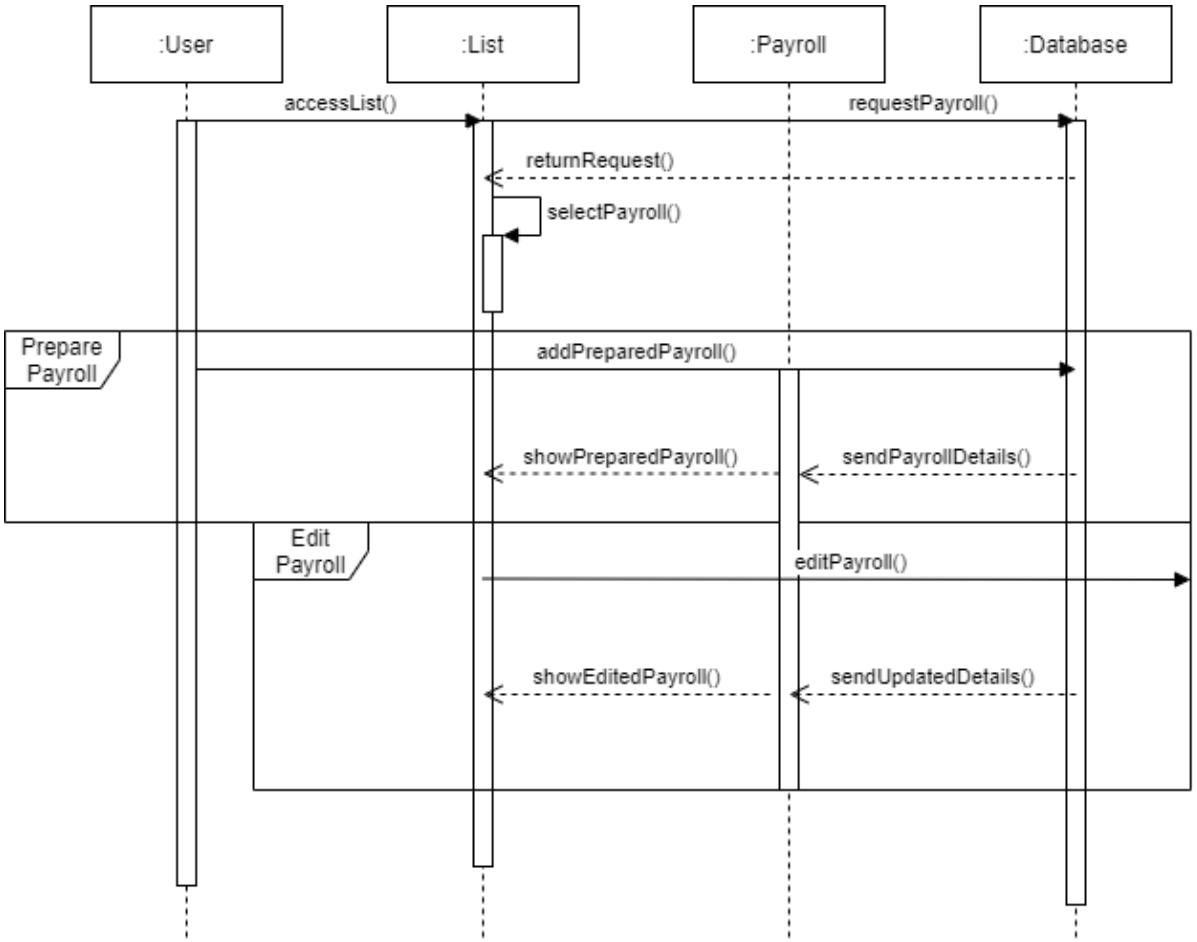
SQ_07.7_07.10_View Employee and Comment



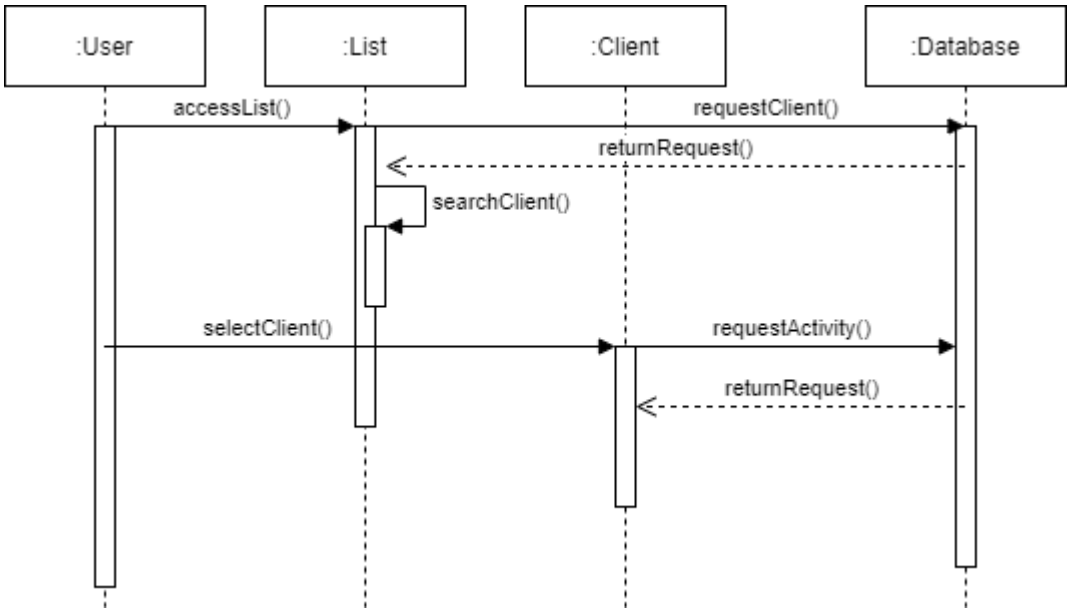
SQ_07.8_07.8.1_07.8.2 View Create Edit Reports



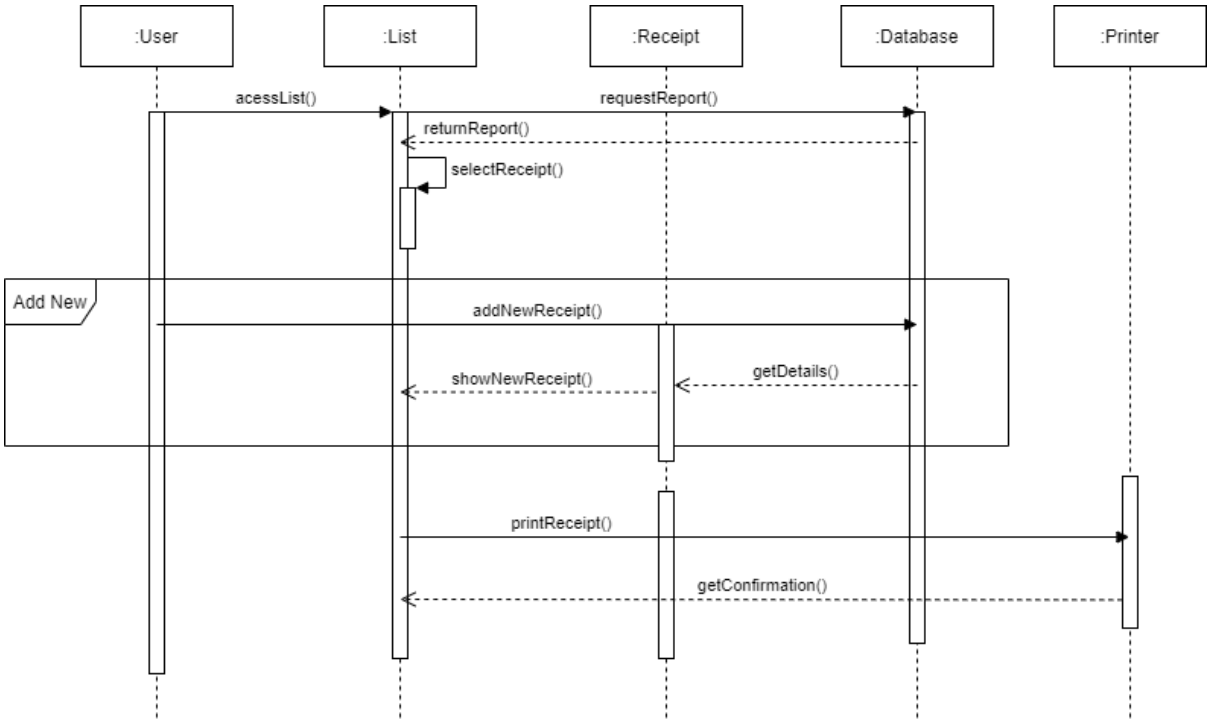
SQ_07.9_07.9.1_07.9.2_Prepare View Edit Payroll



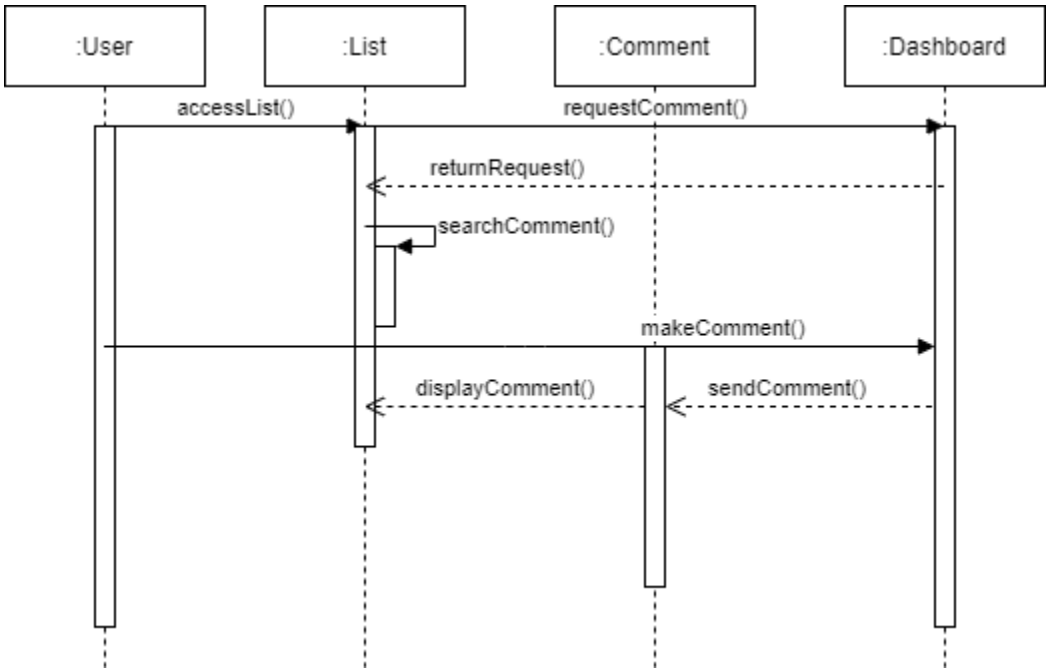
SQ_07.11_View Client



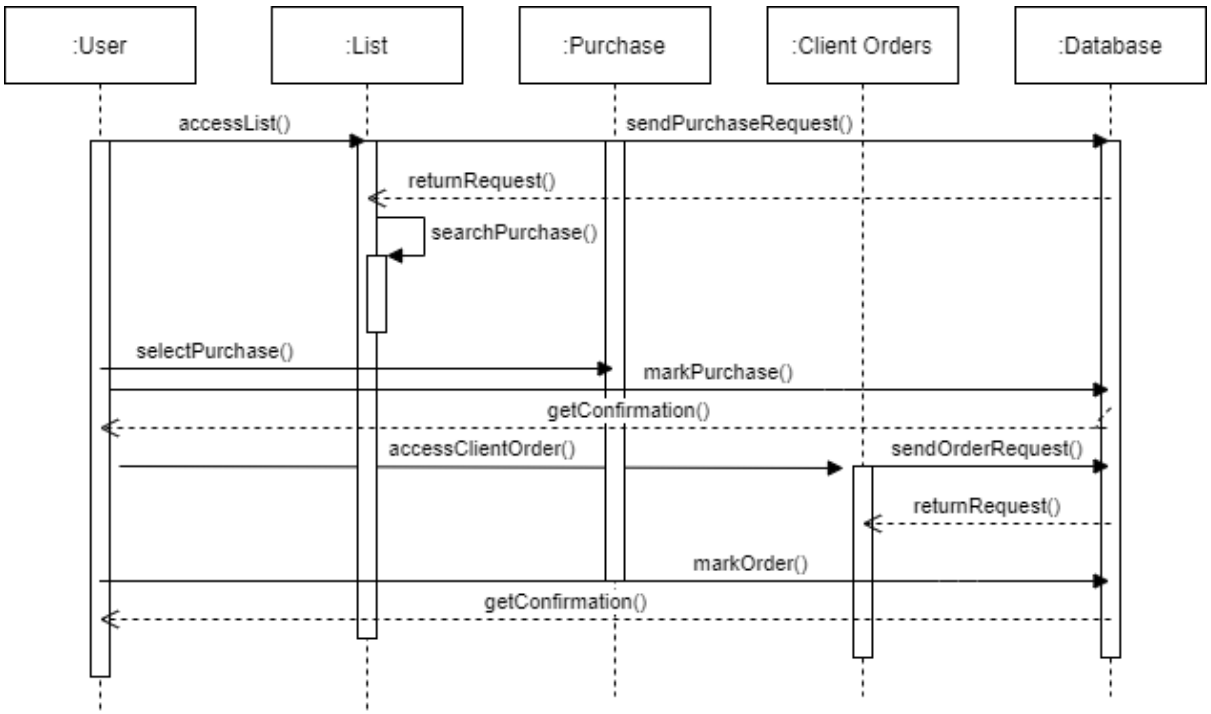
SQ_08.1_08.2_08.3_09_Add View Print Receipt



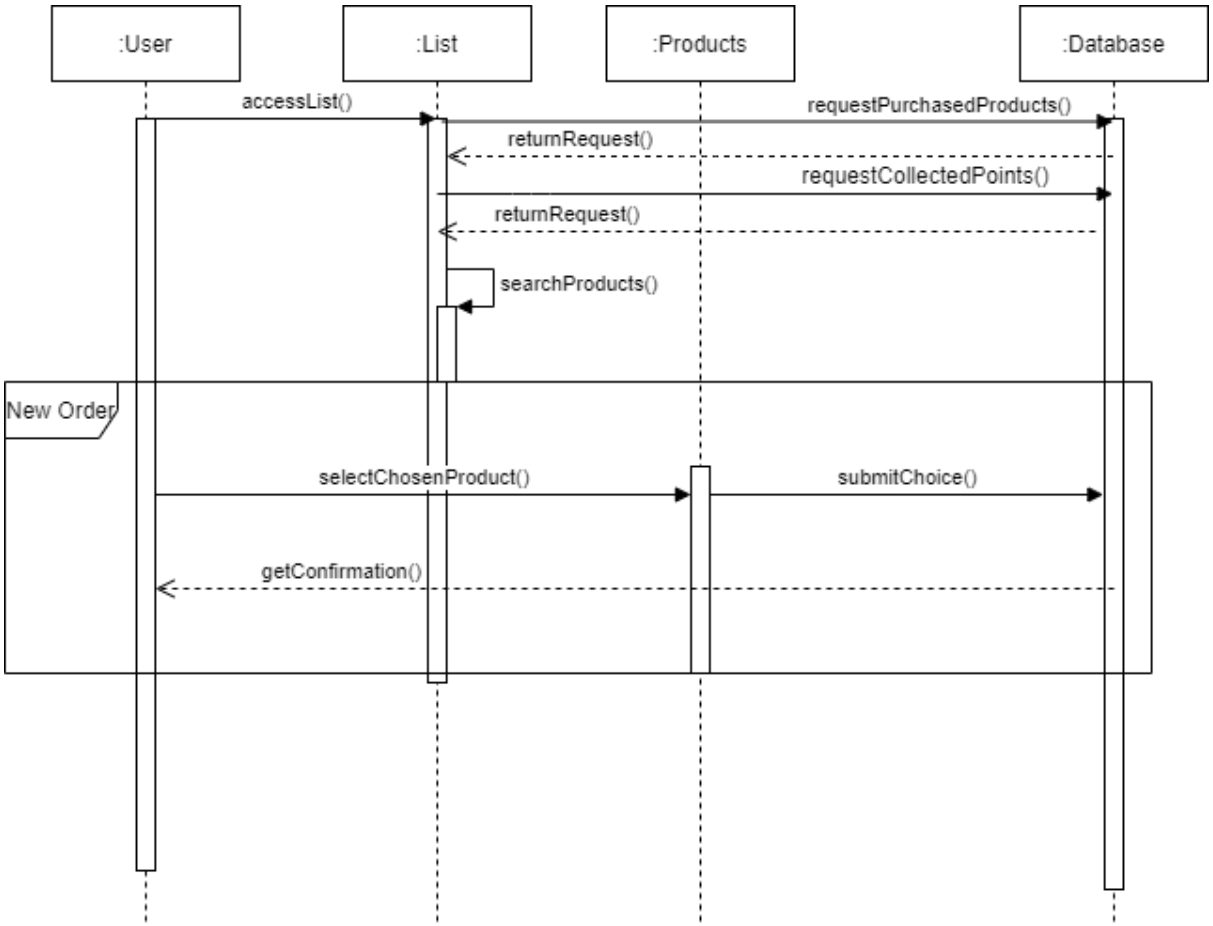
SQ_10 Make Comment



SQ_11.1_11.2 Driver Views Purchases and Client Orders

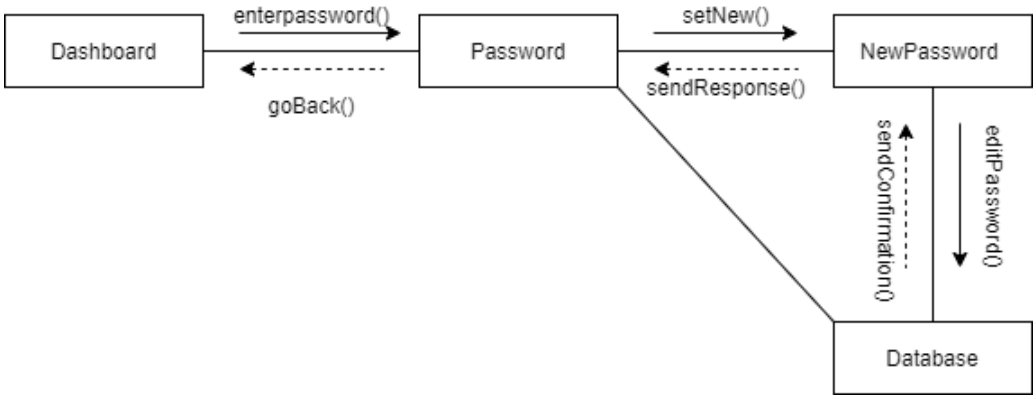


SQ_12.1_12.2_Client View Order Product

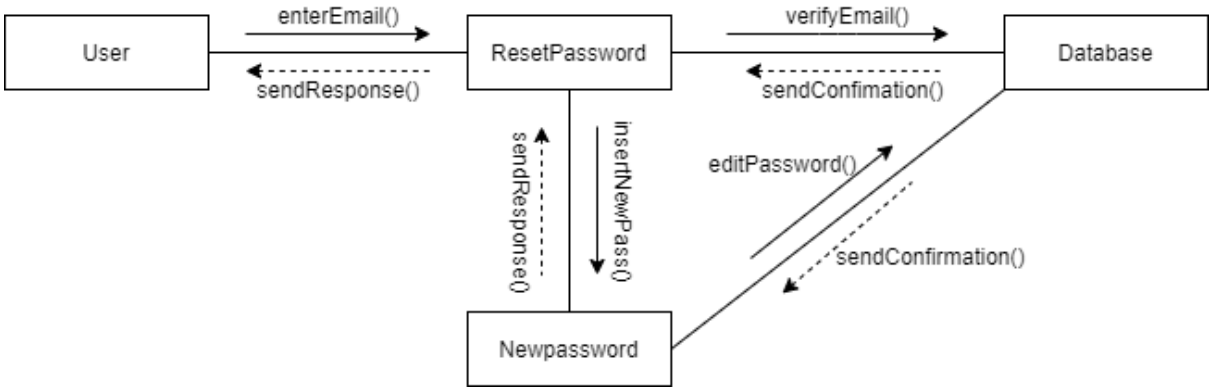


4.7 Collaboration Diagrams

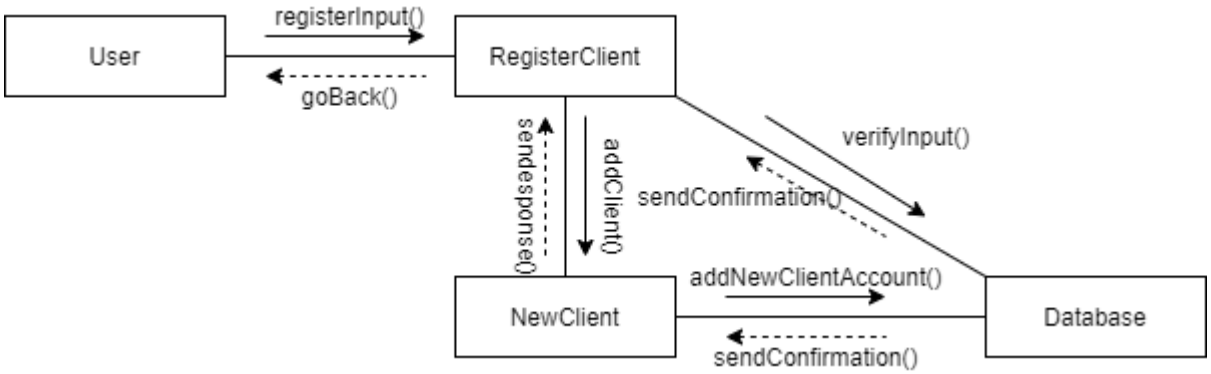
Col-01 change password



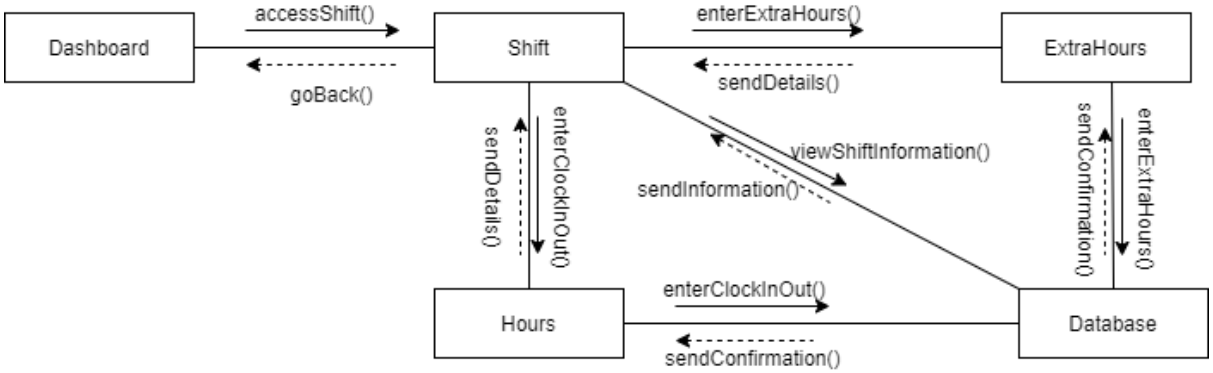
Col-02 reset password



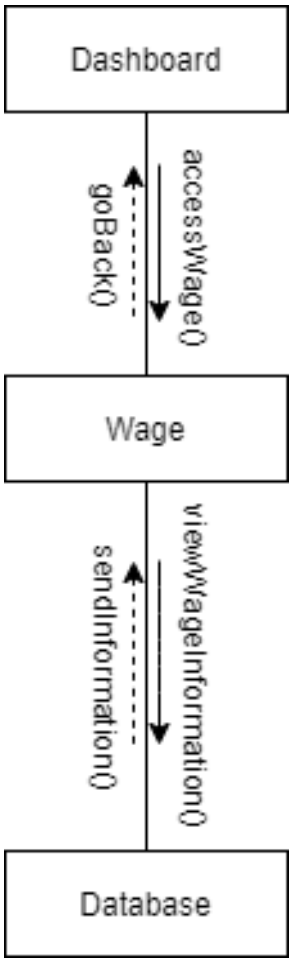
Col-03 register account



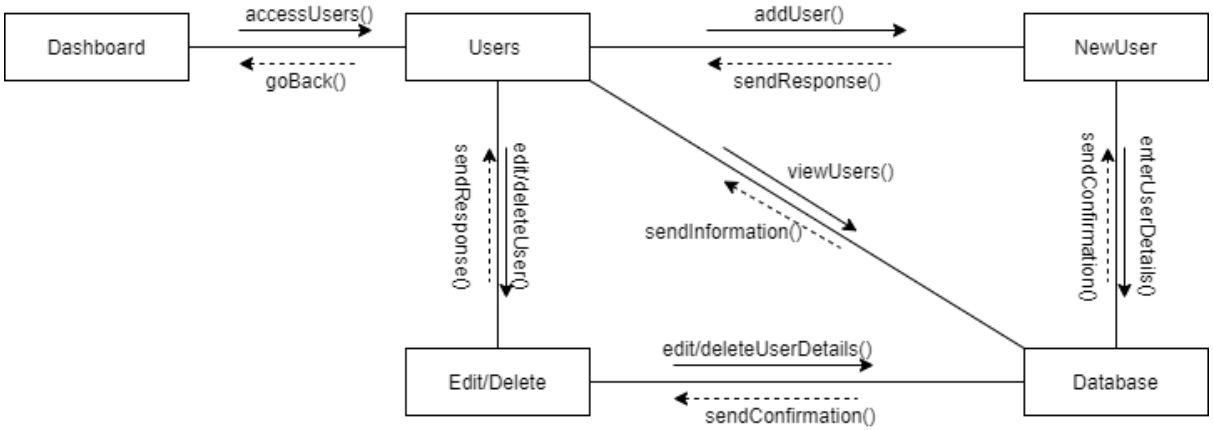
Col-04_06 view shift and enter extra hours



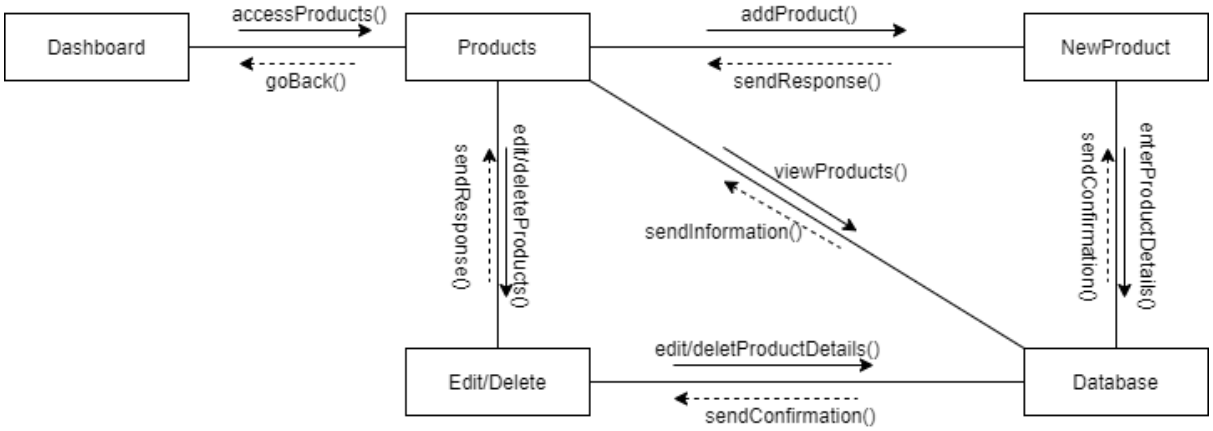
Col-05 view wage



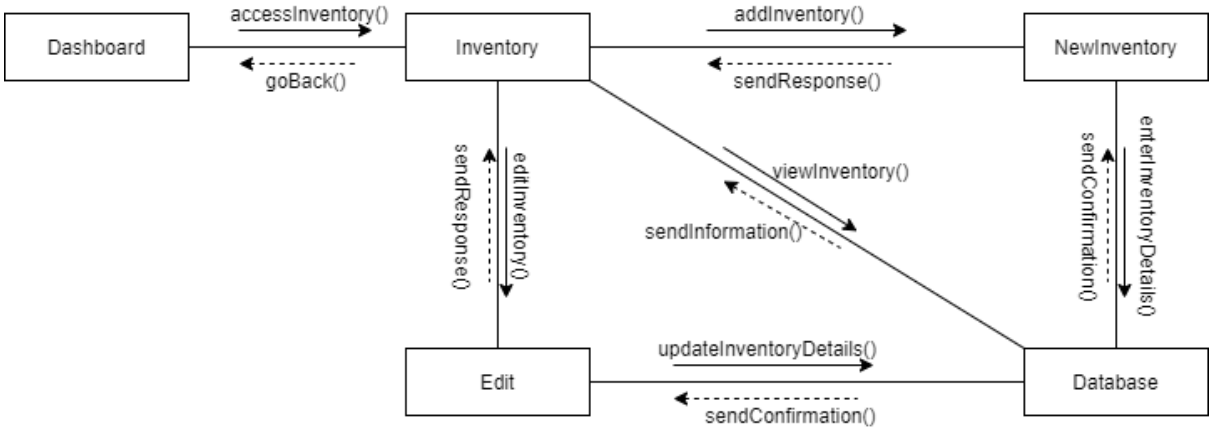
Col-07.1_07.2_07.2.1_07.2.2 create view edit delete user



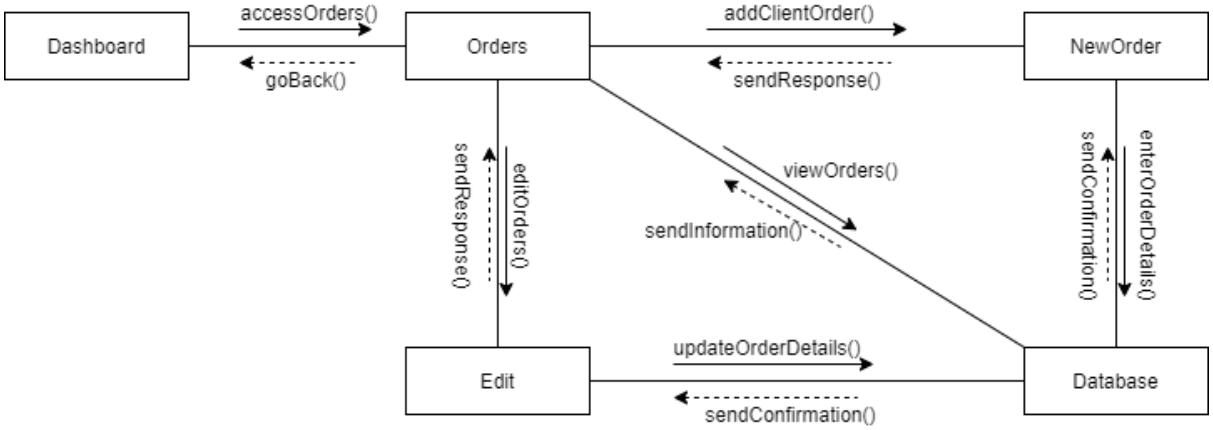
Col-07.3_07.3.1_07.3.2_07.3.3 add view edit delete product



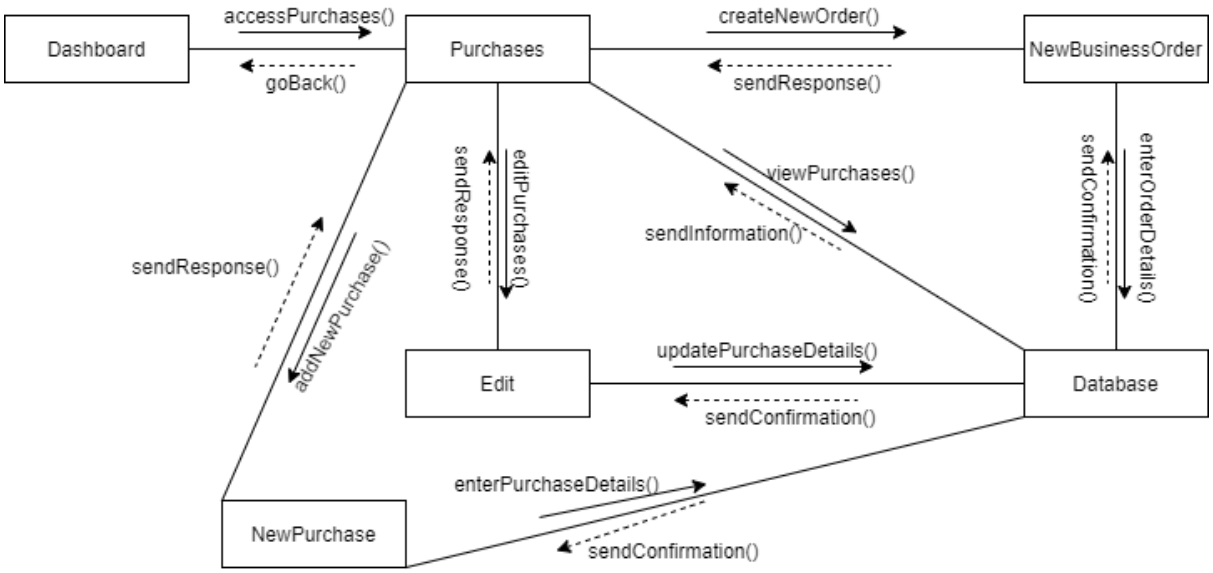
Col-07.4_07.4.1_07.4.2 create view manage inventory



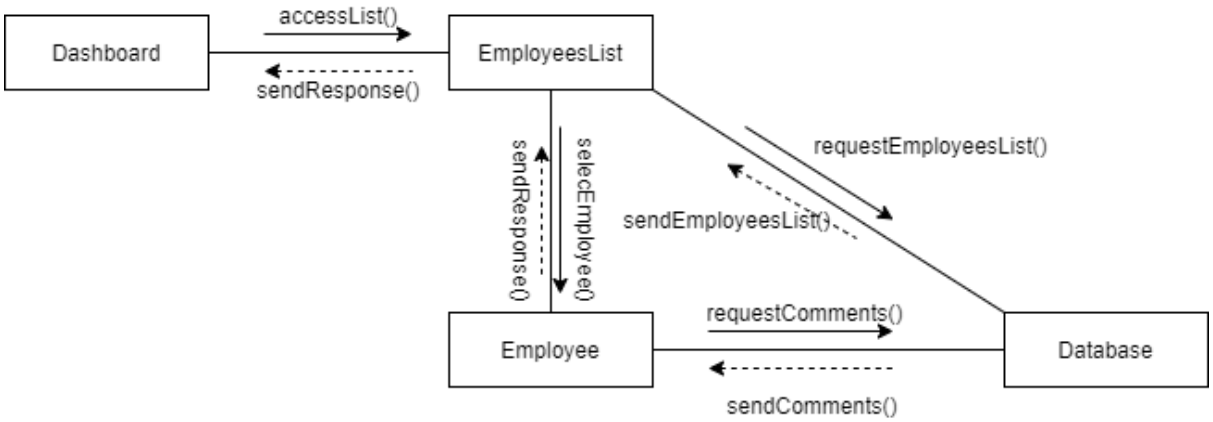
Col-07.5_07.5.1_07.5.2 view edit add client order



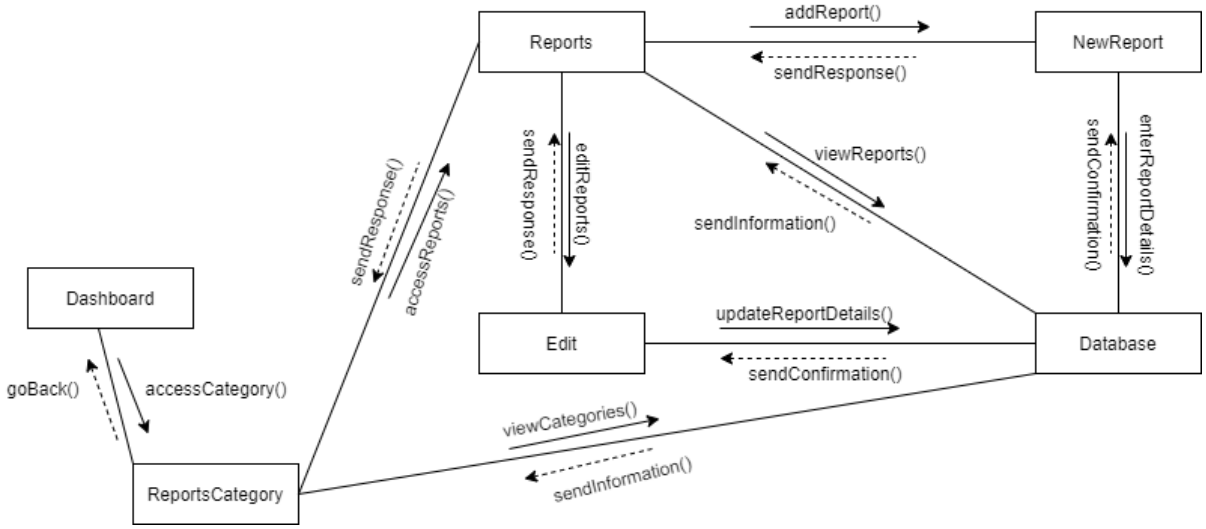
Col-07.6_07.6.1_07.6.2_07.6.3 view create manage add purchase



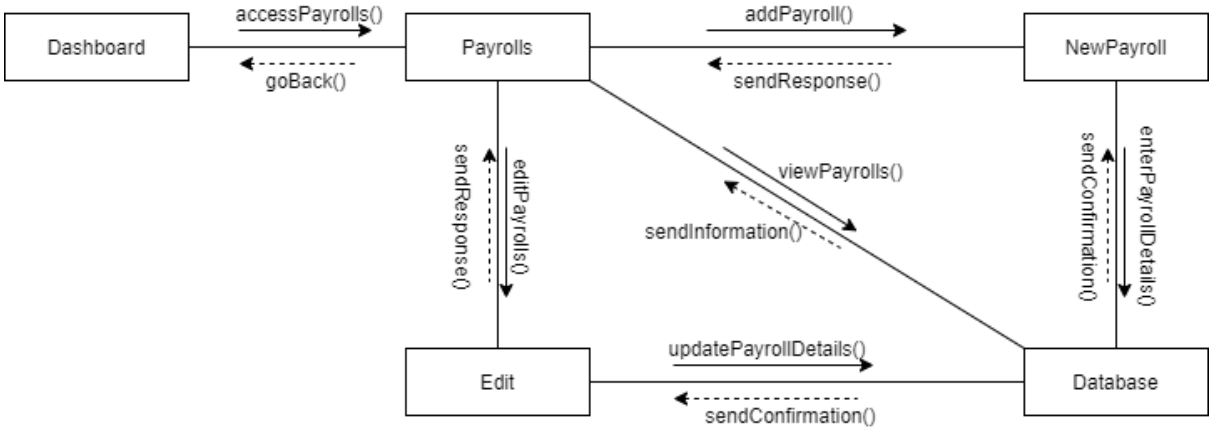
Col- 07.7_07.10 view employees and comments



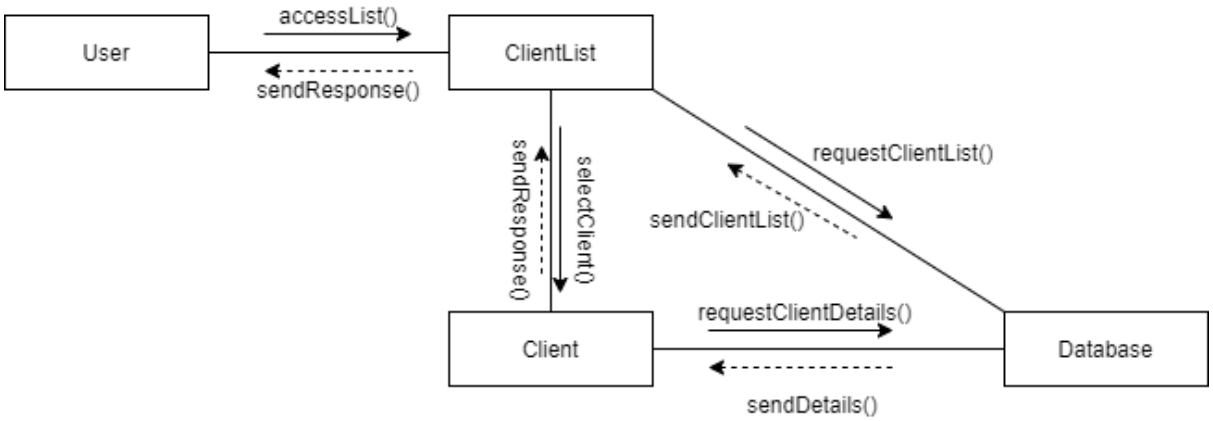
Col-07.8_07.8.1_07.8.2 view create edit reports



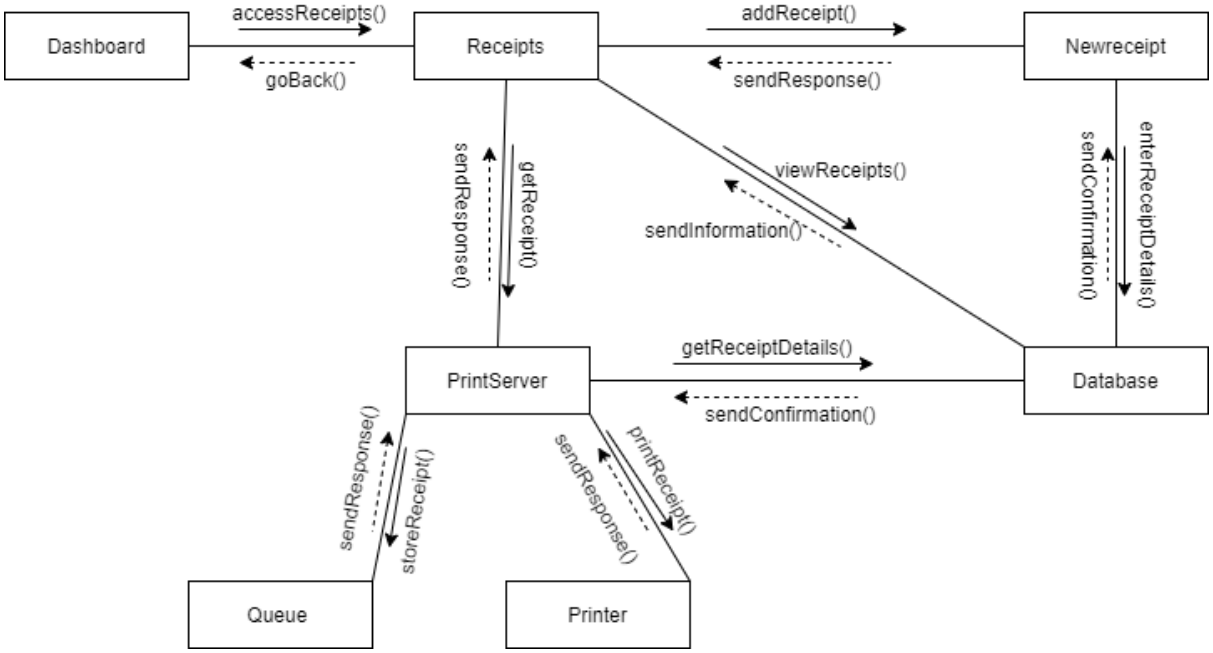
Col-07.9_07.9.1_07.9.2 prepare view edit payroll



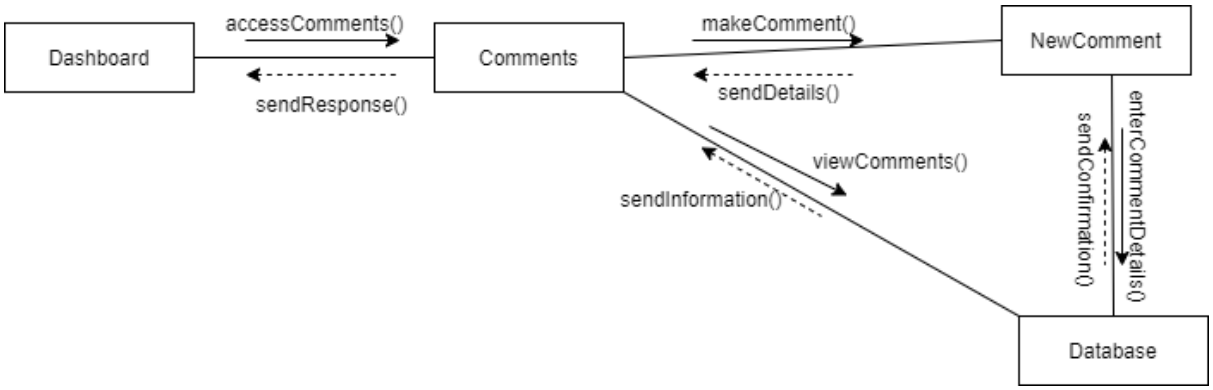
Col-07.11 view clients



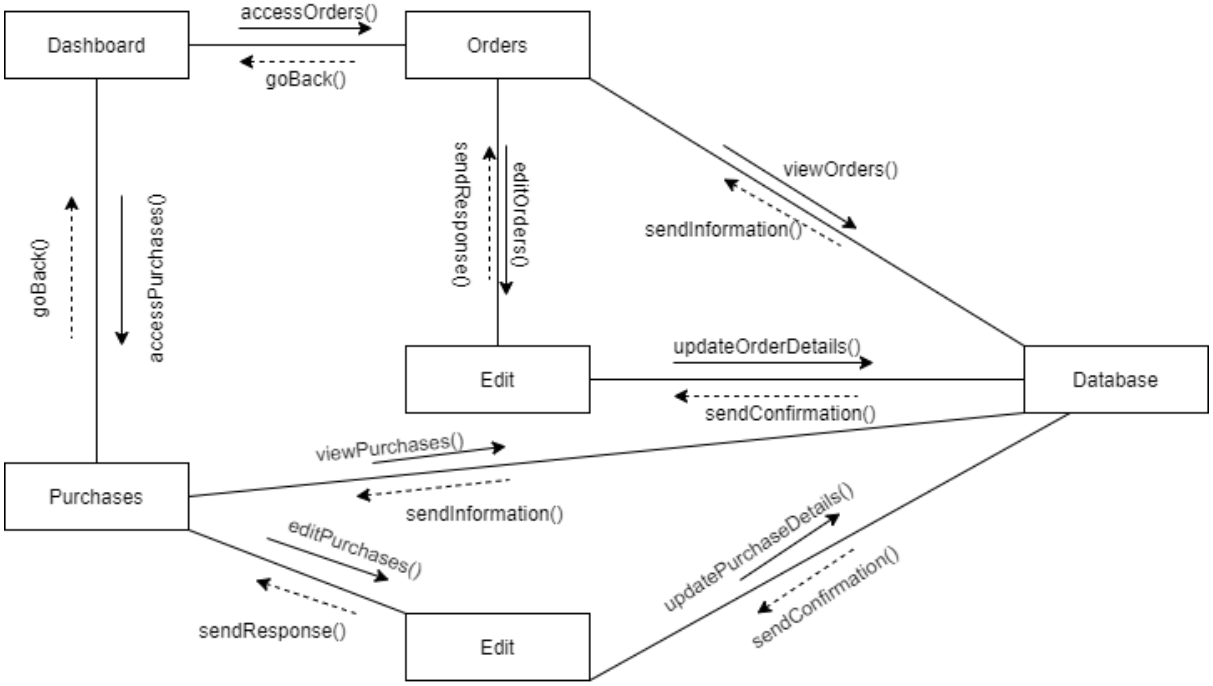
Col-08.1_08.2_08.3_09 add view print receipt



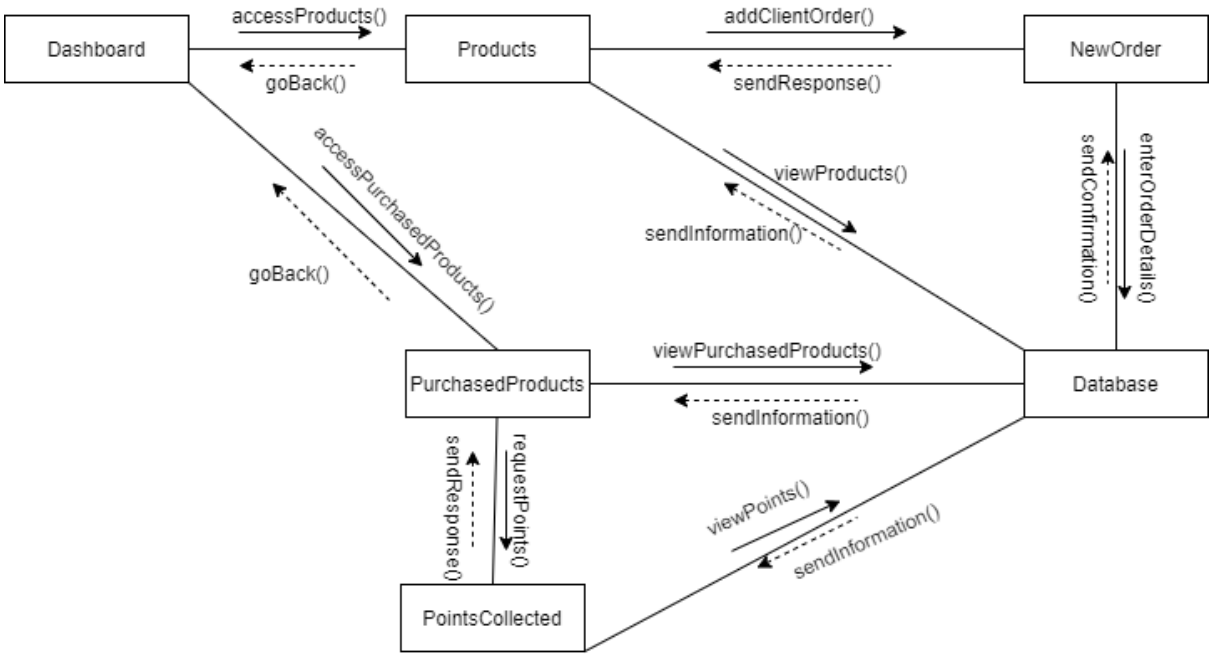
Col-10 make comment



Col-11.1_11.2 driver views/edits purchases and client orders

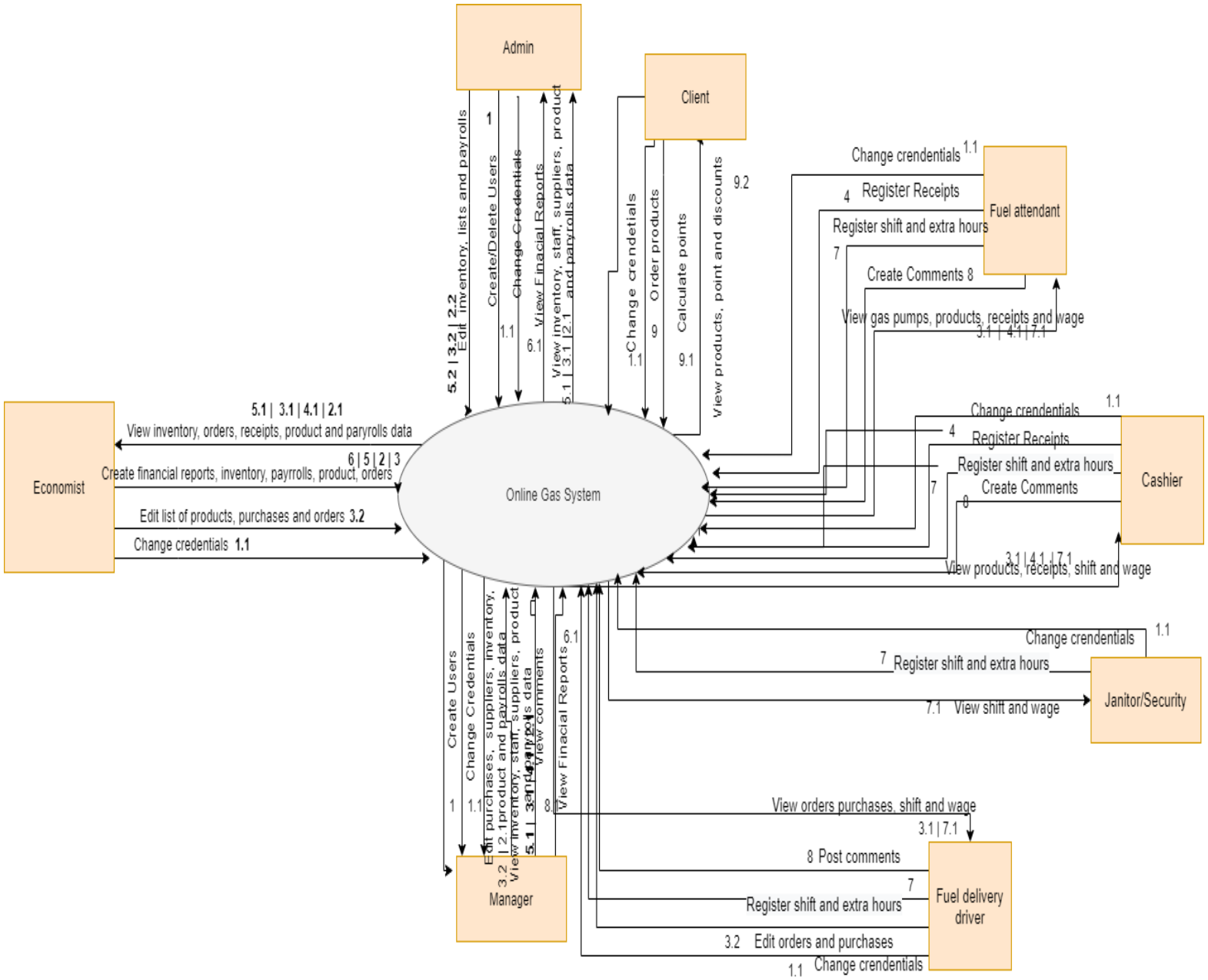


Col-12.1_12.2 client view/orders product



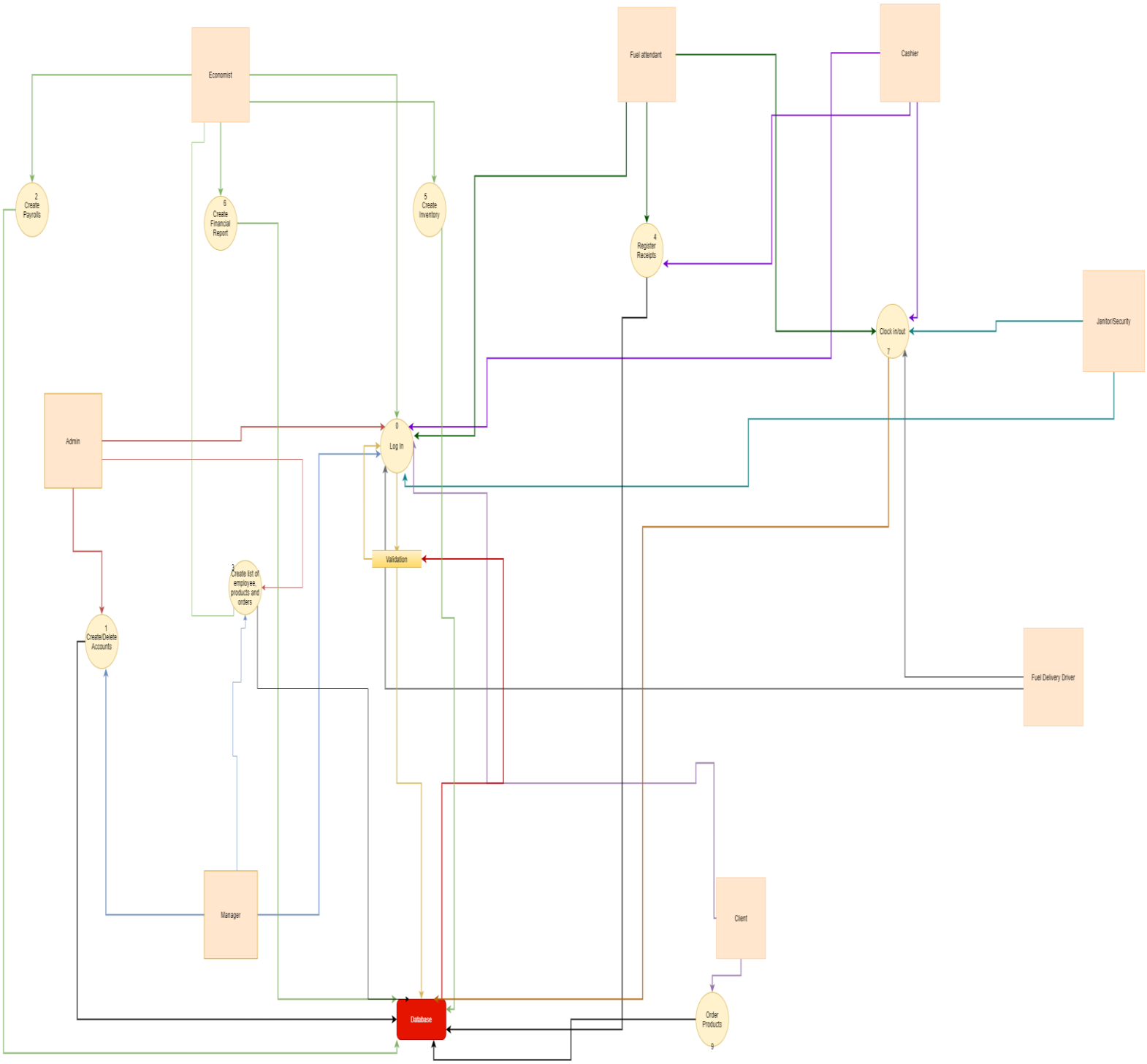
4.8 Data Flow Diagrams

Level 0

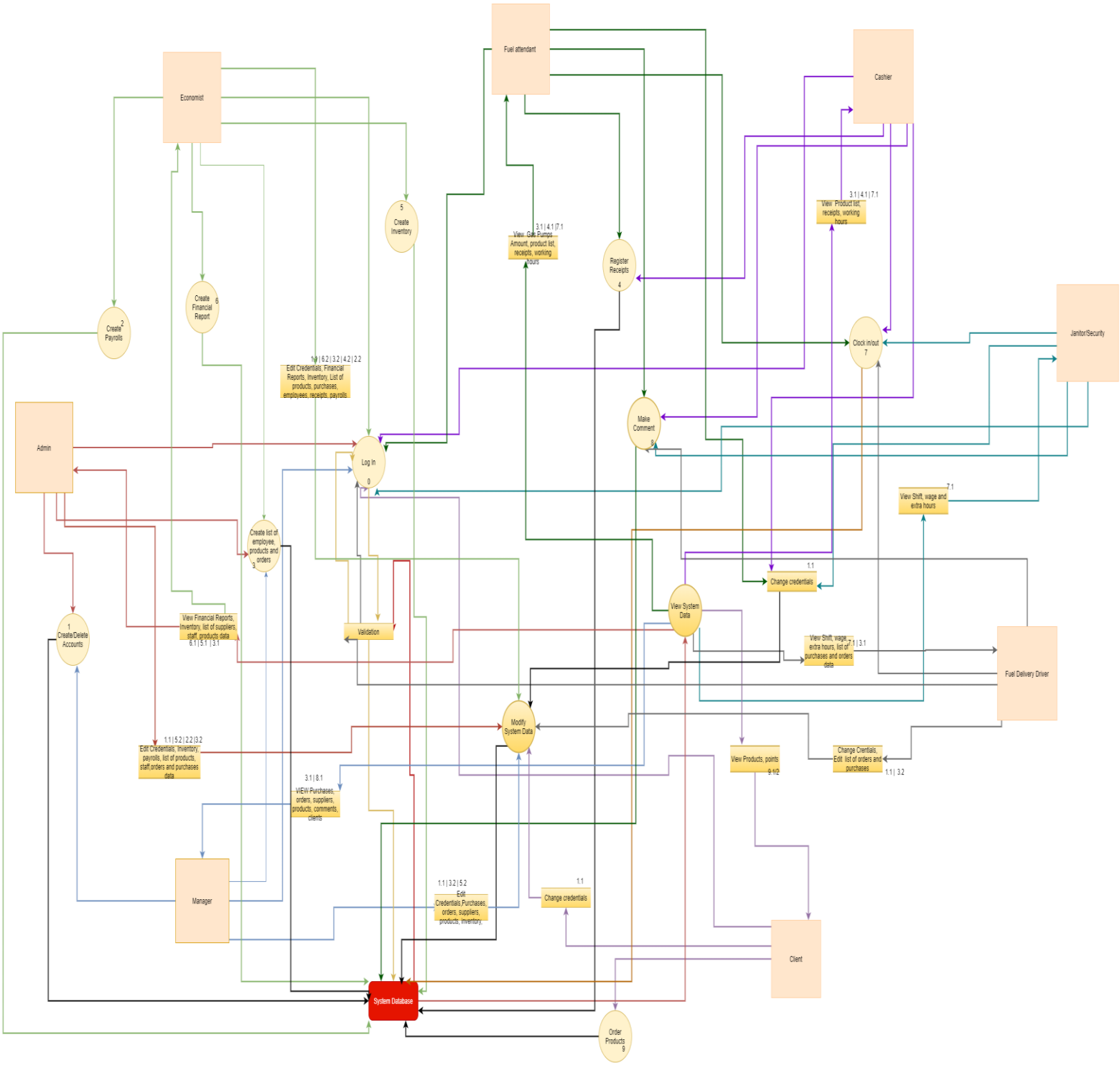


DFD LEVEL 0

Level 1

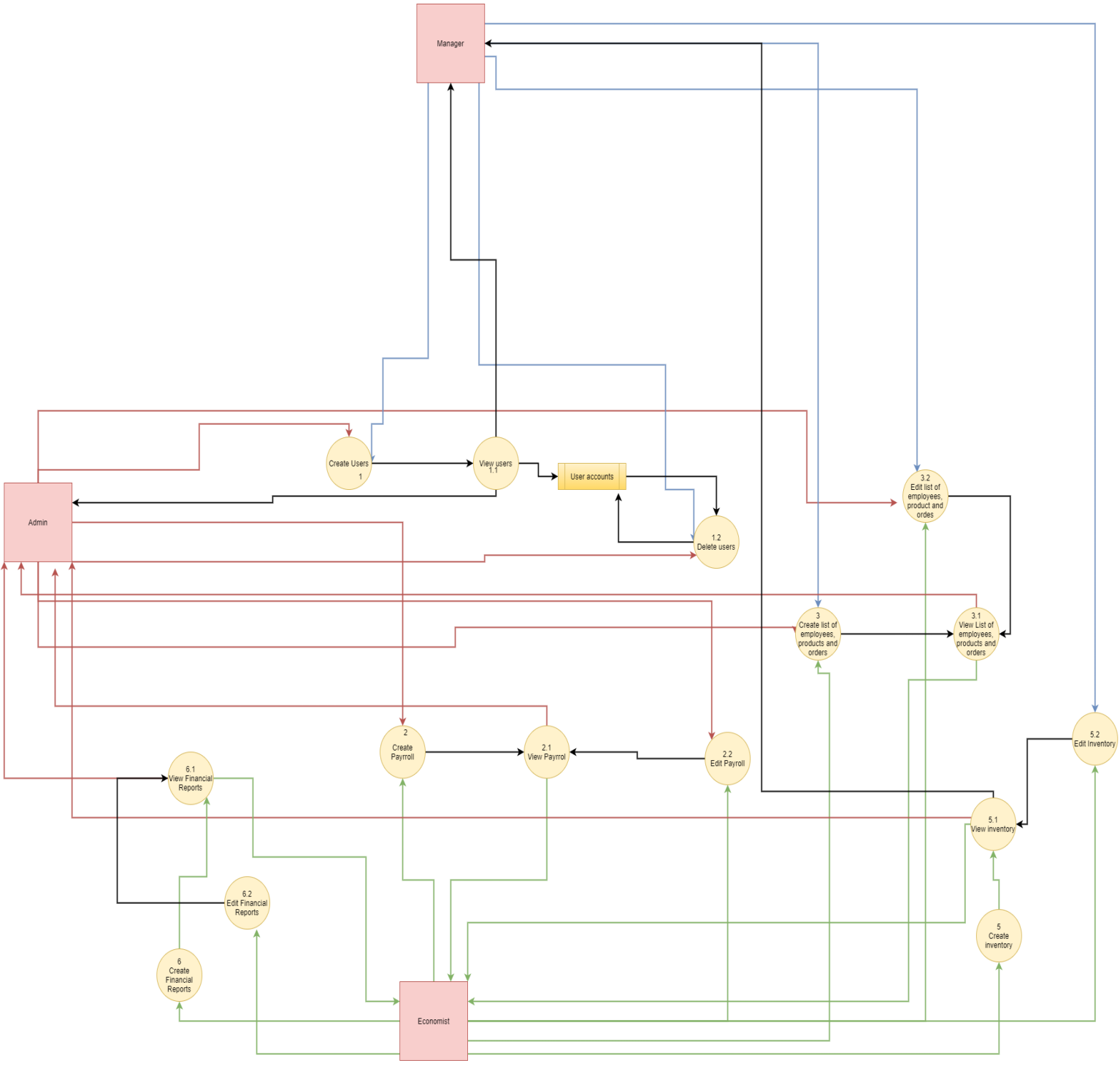

Economist
Fuel attendant
Cashier
2
Create Payrolls
6
Create Financial Report
5
Create Inventory
4
Register Receipts
Janitor/Security
Clock in/out
7
Admin
0
Log In
Validation
3
Create list of employee, products and orders
1
Create/Delete Accounts
Fuel Delivery Driver
Manager
Client
Database
Order Products
9

Level 2



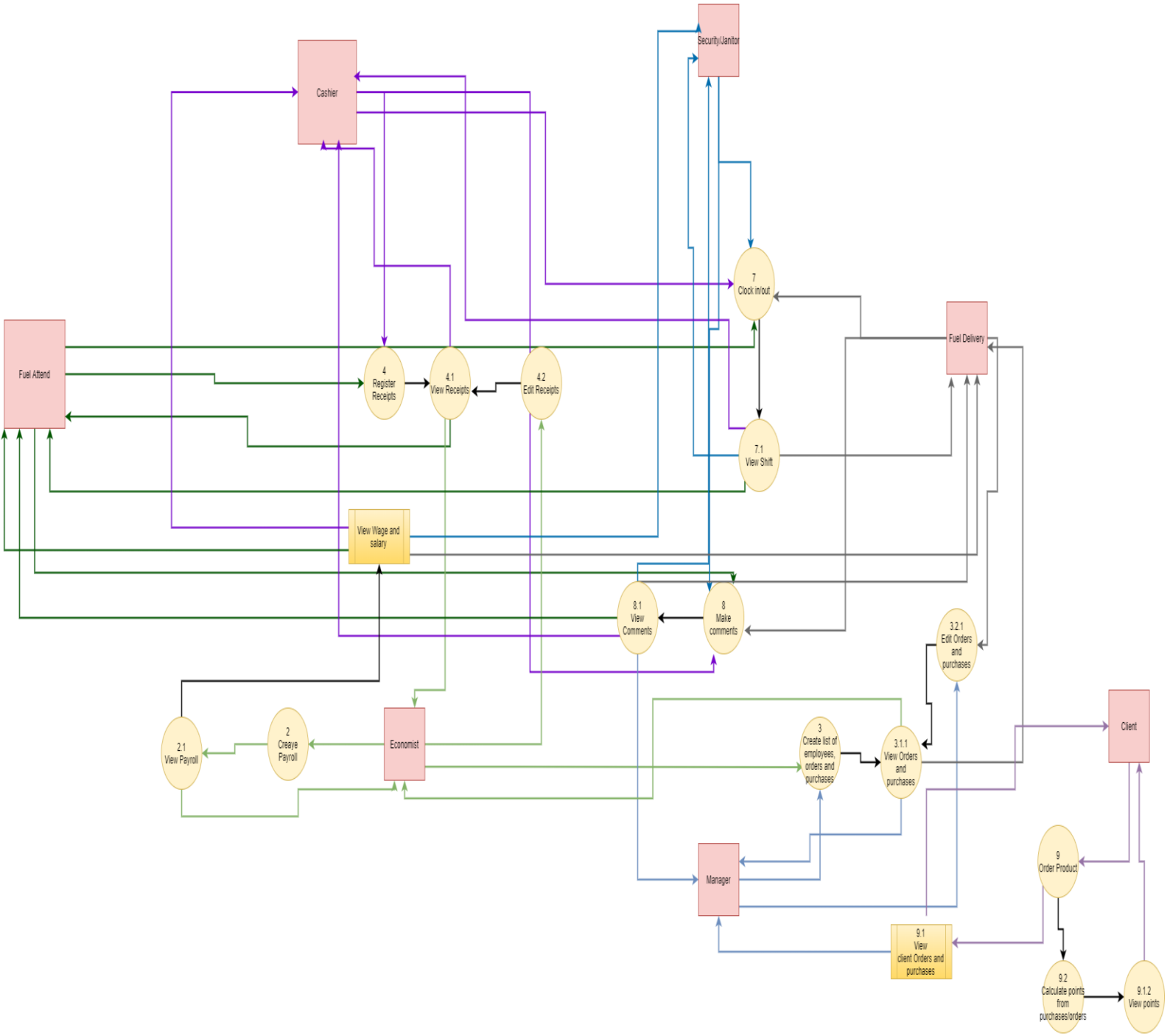
DFD LEVEL 2

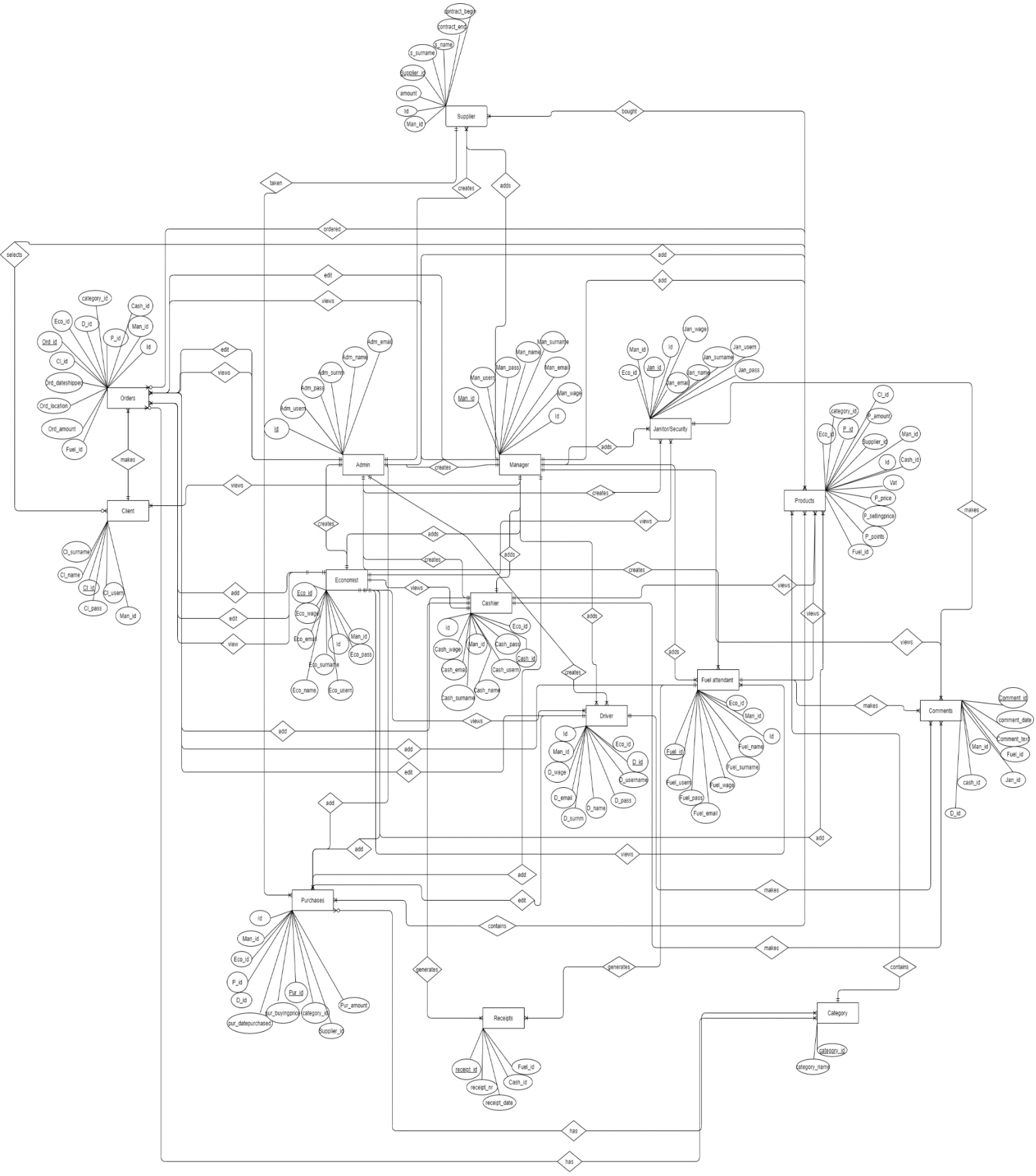
Level 3 admin/ manager/ economist



DFD LEVEL 3 Admin, Manager and Economist

Level 3 other users



DFD LEVEL 3 FUEL ATTENDANT, CASHIER, JANITOR/SECURITY AND CLIENT

4.9 ER Diagram