

SWEN301 Requirements Analysis Document

Team 2 - Kelburn Fly Coders

Priyanka Bhula 300279352

Michelle O'Neill 301025406

Kasz Semilla 300303528

Peter Scriven 300392961

Donald Tang 300292291

Use Case Diagram

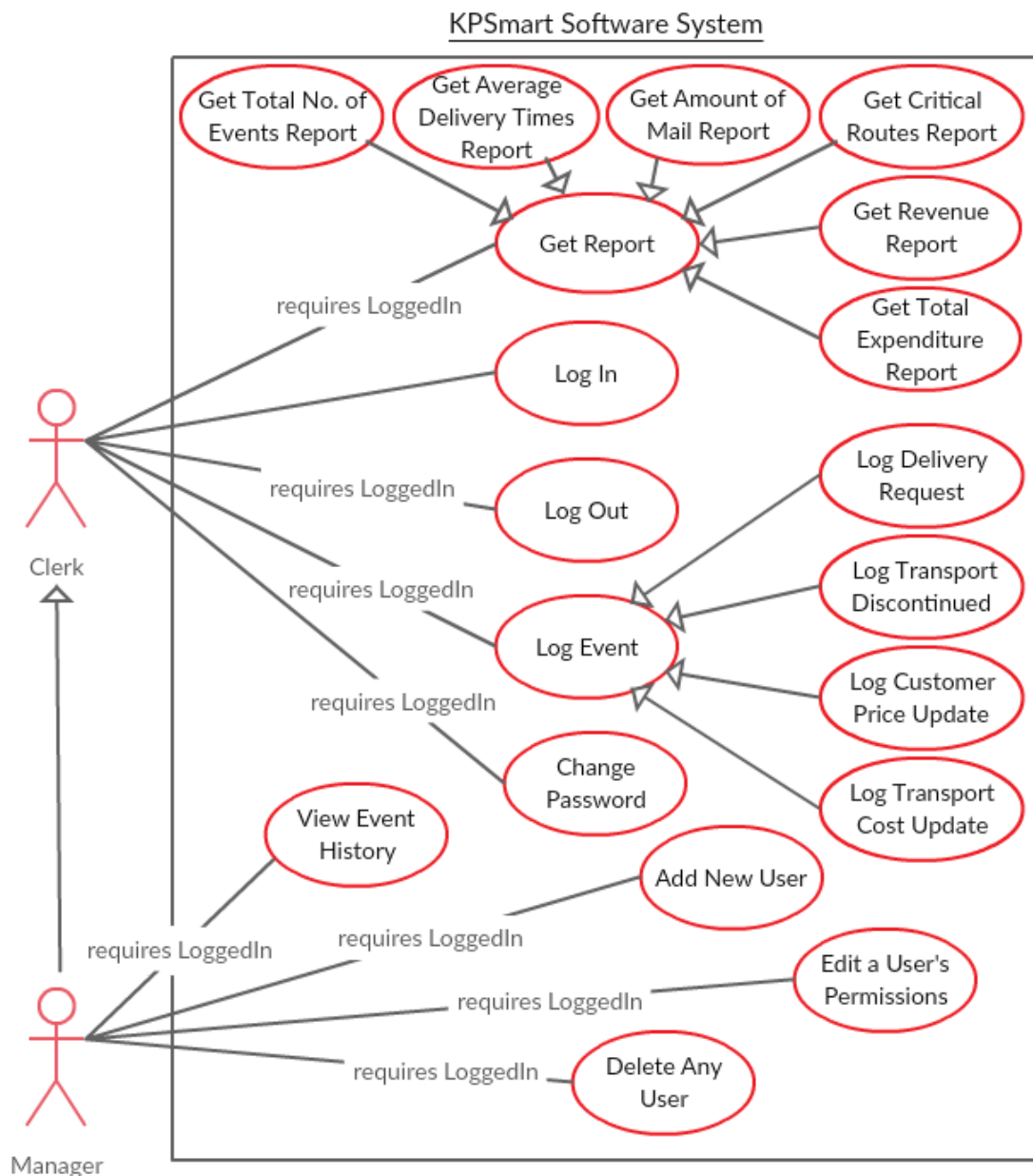


Figure 1: Use case diagram for the KPSmart Software System

Use Cases

01 - Log Delivery Request

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: A delivery request is logged in the system.

Main Success Scenario:

1. A customer submits a single item of mail to be sent from one location to another.
2. The clerk or manager inputs the origin, destination, weight, volume into the system and requests potential routes.
3. The system returns a list of potential routes and their associated priorities and customer prices.
4. The customer chooses a route and the clerk or manager submits this choice to the system.
5. The system adds the mail delivery event to the system's list of mail events.
6. The system updates the Total Events, Total Revenue, Total Expenditure, Amount of Mail and Average Delivery Times reports.
7. The system writes the mail event to the log file, along with the current user and time logged.

Exception Scenarios:

- 2a. Any of the values inputted by the user are invalid.
 - 2a1. The system gives an error message to the user and asks them to re-enter valid data.
- 3a. The system returns no potential routes.
 - 3a1. The customer cannot send the package.
- 3b. The system does not return a route with a priority the customer wants.
 - 3b1. The customer either cannot deliver the item or must select the alternative priority route.

02 - Log Customer Price Update

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: A new Customer Price Update event is logged in the system.

Main Success Scenario:

1. A clerk or manager inputs the new data (new price per gram, new price per cubic centimetre) for a given route (origin, destination, priority) into the system.
2. The system updates all routes that match this (origin, destination, priority) to refer to the new price.
3. The system updates the Total Events and Critical Routes reports.
4. The system writes the price event to the log file, with the user and time logged.

Exception Scenarios:

- 1a. Any part of the data entered by the user is invalid.
 - 1a1. The system gives the user an error message and prompts them to re-enter the data.
- 2a. There are no routes that match the (origin, destination, priority).
 - 2a1. The price is simply added to the system and not associated with any routes.

03 - Log Transport Cost Update

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: A new Transport Cost event is logged in the system.

Main Success Scenario:

1. A clerk or Manager inputs the new data (origin, destination, name of firm, type of transport, new price per gram, new price per cubic cm, day of the week departs origin, frequency it departs, duration of the trip).
2. The system finds the corresponding price object and associates it with the new cost event (route).
3. The system adds the cost event to its internal model.
4. The system updates its Total Events and Critical Routes reports.
5. The system writes the cost update event to the log file, with the user and time logged.

Exception Scenarios:

- 1a. Any of the data the user entered is invalid.
 - 1a1. The system gives an error informing the user and asks them to re-enter the data.
- 2a. The system finds no corresponding price object.
 - 2a1. A popup box is created asking the user to enter information for a corresponding customer price.
 - 2a2.1 If the user fills out the customer price information, a price event is created, associated with the new cost update and both objects are entered into the system.
 - 2a2.2 If the user exits the popup without entering valid information, the new cost update information is discarded.

04 - Log Discontinued Transport Route

Actors: Clerk, Manager

Preconditions: A there is a transport route existing in the log that matches the one that will be entered by the clerk/manager.

Postconditions: A new Discontinue Route event is logged in the system.

Main Success Scenario:

1. A clerk/manager inputs the data (origin, destination) into the system to mark it as no longer available for use.
2. The system finds and returns to the user all routes with the requested origin and destination.
3. The clerk/manager selects one of the given routes to discontinue.
4. The selected route is removed from the system model.
5. The system updates the Total Events, Average Delivery Times and Critical Routes reports.
6. The system writes the discontinue route event to the log file, with the user and time logged.

Exception Scenarios:

- 1a. There are no existing transport routes that matches the specified (origin, destination).
 - 1a1. The user is shown an error message and asked to enter different data.

05 - Get Total Revenue Report

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: A Total Revenue Report is displayed in the GUI.

Main Success Scenario:

1. A clerk/manager requests a report for the total amount of revenue of the system.
2. The system returns the running total it keeps to the GUI.

06 - Get Total Expenditure Report

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: A Total Expenditure Report is displayed in the GUI.

Main Success Scenario:

1. A clerk/manager requests a report for the amount of expenditure.
2. The system returns the running total it keeps to the GUI.

07 - Get Total Number of Events Report

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: Display total number of events in the GUI.

Main Success Scenario:

1. A clerk/manager requests a total number of events report.
2. The system returns the running total it keeps to the GUI.

08 - Get Amount of Mail Report

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: Display total amount of mail in GUI.

Main Success Scenario:

1. A clerk/manager requests an amount of mail report.
2. The system returns the running total it keeps to the GUI.

09 - Get Average Delivery Times Report

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: Display Average Delivery Times in GUI.

Main Success Scenario:

1. A clerk/manager requests an Average Delivery Times Report.
2. The system returns the running total it keeps to the GUI.

10 - Get Critical Routes Report

Actors: Manager, Clerk

Preconditions: A clerk/manager logged into system.

Postconditions: Display critical routes report.

Main Success Scenario:

1. The manager requests a routes report
2. The system returns the running total it keeps to the GUI.

11 - View Event History

Actors: Manager

Preconditions: A manager logged into system.

Postconditions: Event History displayed in the GUI

Main Success Scenario:

1. A manager requests to view the record of events that have been logged in the system
2. The information for the latest event is displayed in the GUI, along with controls that allow the manager to navigate through the events by going to the next, previous, first or last events.

Exception Scenarios:

- 2a. There are no events logged in the system
 - 1a1. The event history will show no data and the controls will not work

12 - Log In

Actors: Clerk, Manager

Preconditions: none

Postconditions: The user is logged into the system

Main Success Scenario:

1. The user enters in a username and password into the system.
2. The system logs the user in with manager or clerk permissions according to their account information stored in the system.

Exception Scenarios:

- 1a. The user enters an invalid username/password combination.
 - 1a1. The system requests the user enter the information again.

13 - Log Out

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: No one is logged into the system.

Main Success Scenario:

1. The manager/clerk tells the system to log them out.
2. The system logs the current user out.

14 - Change Password

Actors: Clerk, Manager

Preconditions: A clerk/manager logged into system.

Postconditions: The clerk/manager logged in has a different password for their account.

Main Success Scenario:

1. The user navigates to the change password page
2. The user enters a new password twice into the system
3. The system changes the user's password to the new password and informs them of this change.

Exception Scenarios:

- 2a. The 2 entries of the new password do not match
 - 1a1. The user's password is unchanged and the user is asked to enter in the new password again

15 - Add New User

Actors: Manager

Preconditions: A manager logged into system.

Postconditions: A new user added to the system.

Main Success Scenario:

1. The manager navigates to the add user page
2. The manager submits information for a new user (username, password, isManager).
3. The systems creates a new user with these characteristics and informs the current user

Exception Scenarios:

- 2a. Any of the (username, password, isManager) data is invalid (e.g. username is taken, password is blank).
 - 2a1. The system asks the user to submit the information again.

16 - Edit User Permissions

Actors: Manager

Preconditions: A manager logged into system.

Postconditions: A user in the system is changed from being a manger to a clerk or vice versa.

Main Success Scenario:

1. A manager navigates to the edit user page
2. The manager searches for a user by username
3. The system returns the searched for user and their current permission level (clerk or manager).
4. The manager submits a new permission level for the user
5. The system modifies the selected user's permission level and informs the manager.

Exception Scenarios:

- 3a. No user exists in the system for the corresponding username.
 - 3a1. The system informs the manager of this and returns nothing
- 4a. The modified permission level is the same as the previous permission level
 - 4a1. The selected user is left unchanged

17 - Delete User

Actors: Manager

Preconditions: A manager logged into system.

Postconditions: A user is removed from the system.

Main Success Scenario:

1. A manager navigates to the edit user page
2. The manager searches for a user by username
3. The system returns the searched for user
4. The manager submits a delete request
5. The system deletes the user

Exception Scenarios:

- 3a. No user exists in the system for the corresponding username.
 - 3a1. The system informs the manager of this and returns nothing
- 4a. The manager deletes themselves
 - 4a1. The system logs the manager out and then deletes their accounts.

General Assumptions

All these use cases are operating under the assumptions:

- The config file and logfile are in the correct location and the KPSmart application can access them as it was designed to.
- The config file and logfile are not modified by any programs other than KPSmart.

Notes

There are no exceptional scenarios for use cases 05, 06, 07, 09, 10, 11 as there is no way there can be an exceptional situation. Even if no events have been entered into the system, the running totals the system keeps for these reports will just be zero.

Class Diagram

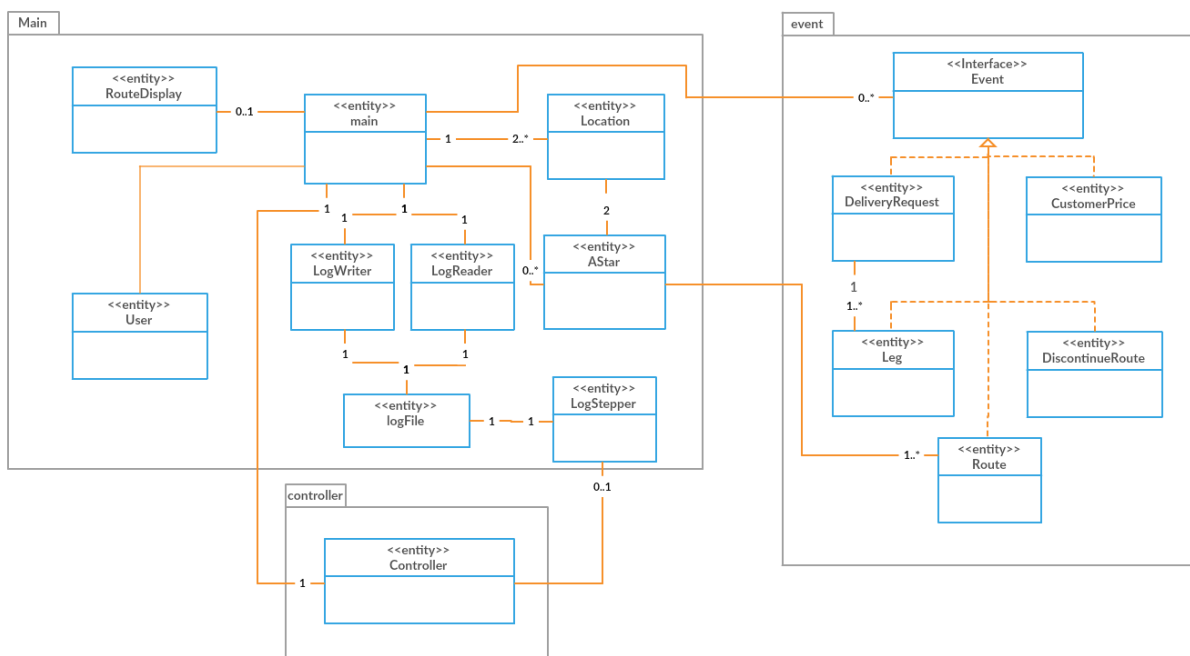


Figure 2: Class diagram for KPSmart Software System