SWEN 301 KPSmart Testing Document

Part of the Submission for Assignment 2

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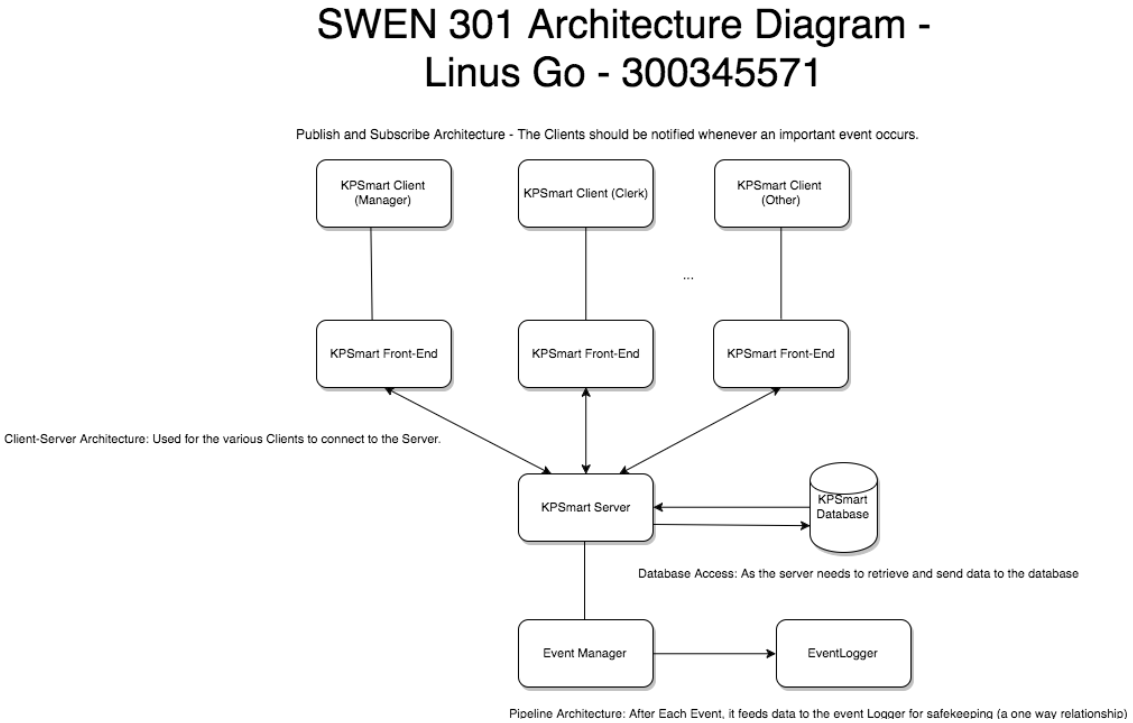
Section I: Architecture Design

My personal take on the Program's Architecture consists of using a mixture of three different architectural styles. They are the *Publish and Subscribe Architecture, Client-Server Architecture and* the *Pipeline Architecture. They all have different uses for different contexts, which I will explain below.*

Publish and Subscribe Architecture – This architecture is mainly used for the Clients, where the Server acts as the publisher and the various Clients acts as subscribers. Whenever an event occurs, such as a route being discontinued, all the clients are notified, as the server "publishes" this information to all.

Client-Server Architecture – This Architecture is mainly used to link the various clients (such as Managers and Clerks) together. For data to be retrieved and sent out, each of the clients must be connected to the server - which will then delegate and dispatch work to other classes, and will return the response back to the client, which is a centralized solution.

Pipeline Architecture – The Event Manager is responsible for recording and storing business events for each time it occurs. It makes sense to have a one-way Pipeline Relationship, where the Event Manager records an event, the pipe (black arrow) represents the event data being sent to the logger, where it is saved to in an XML file. I personally did not think it needed a two-way relationship, so the Pipeline Architecture was a good solution.



Section 2: Test Cases for KPSmart

Brief

The four Use Cases that I will be testing for are the following items:

1. A User Logging in into the KPSmart Program
2. A User requesting a Delivery
3. A User updating the Transport Costs for a given route
4. A User discontinuing an existing route.

Scenario I: User Logging into a System

Test Case ID	Condition/Scenario	Test Data and Settings	Expected Output
1	Login is Successful	Username: linusgo Password: hunter2	Allows the user access into the App.
2	Incorrect Login Attempt – Wrong Password	Username: linusgo Password: blahblah	Displays an error message stating “incorrect login”
3	More than three incorrect Login Attempts are entered	**[Repeated x3]** [Username: linusgo Password: blahblah]	After the third attempt, locks the user from making further login attempts.
4	No details are submitted	Username: - Password: -	Display an error message prompting a user to put their details in.

Scenario II: The User Requests a Delivery

Test Case ID	Condition/Scenario	Test Data and Settings	Expected Output
1	The Clerk Makes a standard delivery with correct and valid inputs.	Origin: Wellington Destination: Auckland Mail Priority: Standard Weight: 0.50kg Volume: 0.5*0.5*0.5m^3	After update is clicked: • Delivery event shows up in the log file • Business figures are updated representing the new delivery.
2	The Clerk inputs a destination that is not served by their network.	Origin: Wellington Destination: Pyongyang Mail Priority: Standard Weight: 0.50kg Volume: 0.5*0.5*0.5m^3	After update is clicked: • The System notifies the clerk that the ***mail cannot be delivered*** • *System prompts the clerk to put a* ***valid destination.***
3	The Clerk forgets to fill in a field inside the delivery form.	Origin: Wellington Destination: - Mail Priority: Standard Weight: 0.50kg Volume: 0.5*0.5*0.5m^3	After update is clicked: • The system notifies the clerk to **fill the missing field in, and try again**
4	The Clerk gets a **domestic** air priority delivery, but no air route exists between the two cities.	Origin: Wellington Destination: Palmerston North Mail Priority: Domestic Air Weight: 0.50kg Volume: 0.5*0.5*0.5m^3	After update is clicked: • The system checks if a domestic air route exists • It then notifies the clerk that **no air route exists between the two cities**, and to change the "Mail Priority".
5	The Clerk gets an **International** air priority delivery, but no air route exists between the two cities.	Origin: Wellington Destination: Apia Mail Priority: International Air Weight: 0.50kg Volume: 0.5*0.5*0.5m^3	After update is clicked: • The system checks if an international air transport route exists for that route • It then notifies the clerk that **no air route exists between the two cities**, and to change the "Mail Priority".

Scenario III: The User Updates Transport Costs

Test Case ID	Condition/Scenario	Test Data and Settings	Expected Output
1	The Clerk updates the Transport Costs field with all correct and valid data.	Origin: Auckland Destination: Singapore Transport Firm Name: DHL Type of Transport: Air Freight Price per gram: $0.50 /g Price per cubic cm: $1.30 /cm^3 Day of Weekly Departures: Monday Frequency of Departures: 12 hours Trip Duration: 10 Hours	• Transport Price Update is added to the log file. • When the Clerk checks the new Transport costs again, the changes are saved.
2	The Clerk forgets to fill in a field in the Transport Costs form.	Origin: Auckland Destination: **-** Transport Firm Name: DHL Type of Transport: Air Freight Price per gram: $0.50 /g Price per cubic cm: $1.30 /cm^3 Day of Weekly Departures: Monday Frequency of Departures: 12 hours Trip Duration: 10 Hours	• The System notifies the user that there is a missing field, and that it must be filled in.
3	The Clerk fills in the Details for a specific Transport Firm that does not exist.	Origin: Auckland Destination: Singapore Transport Firm Name: **Boogey Man Transport** Type of Transport: Air Freight Price per gram: $0.50 /g Price per cubic cm: $1.30 /cm^3 Day of Weekly Departures: Monday Frequency of Departures: 12 hours Trip Duration: 10 Hours	• The system notifies the clerk that the Transport firm is incorrect and does not exist • It then asks the clerk to put in a correct Transport firm in.
4	The Clerk fills in an Invalid Input for the Price Fields.	Origin: Auckland Destination: Singapore Transport Firm Name: FedEx Type of Transport: Air Freight Price per gram: **$-0.50 /g** Price per cubic cm: **$888888888888888.30 /cm^3** Day of Weekly Departures:	• The system verifies if the fields are correct • Since they are incorrect – it tells the clerk to insert a set of

		Monday Frequency of Departures: 12 hours Trip Duration: 10 Hours	valid values.

Scenario IV: The User Wishes to Discontinue a Route

Test Case ID	Condition/Scenario	Test Data and Settings	Expected Output
1	The Clerk enters the valid route information to discontinue the route.	Origin: Busan Destination: Christchurch Name of Transport Firm: Korean Air Cargo Type of Transport: Air Freight	• The system provides a message that the route has been deleted and does not exist anymore.
2	The Clerk enters a route that does not exist in the first place to discontinue.	Origin: Mogadishu Destination: Damascus Name of Transport Firm: Totally not Dangerous Goods Ltd Type of Transport: Wooden Boat	• The system provides a message saying that the **route does not exist to discontinue.**
3	The Clerk forgets to add a field when filling out the information.	Origin: Busan Destination: - Name of Transport Firm: Korean Air Cargo Type of Transport: Air Freight	• The system displays an error message that a field is missing.