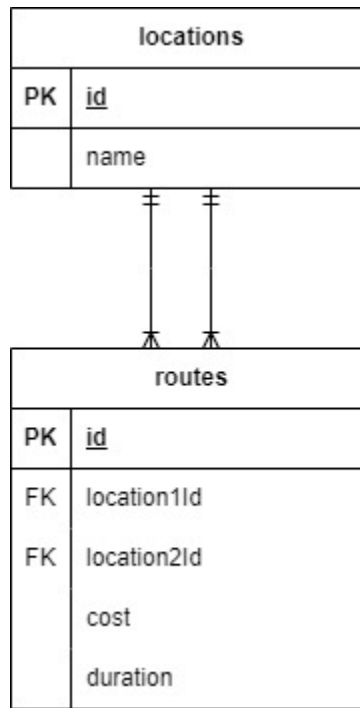


## ENTITY RELATIONSHIP DIAGRAM (ERD)



## CONTENTS

This Test Project proposal consists of the following documentation/files:

**script.sql, Logis-API.zip, Logis-API-specification.pdf, Papercut.Smtp.Setup.exe, data.txt**

## DELIVERABLES

The screenshot shows a web application window titled "Item Delivery Panel". On the left, there is a list of items, each represented by a tile. Each tile contains an "Item Type" dropdown menu, an "Item Name" label, an "address" label, and a right-pointing arrow icon. On the right, there is a detailed view titled "Item Delivery Description". This view displays the following information: "Name: item name", "Item Type: type", "Estimated Cost: RM xx.xx", "Estimated Delivered Date: dd/mm/yyyy", and "Delivery Route:". The delivery route is visualized as a diagram with four boxes: "George Town", "Taiping", "Ipoh", and "Shah Alam". Arrows labeled "TO" connect "George Town" to "Taiping", "Ipoh" to "Shah Alam", and "Taiping" to "Shah Alam". At the bottom right of the description panel, there is a button labeled "Complete Delivery".

### Admin Item Delivery Panel

Design an “Item Delivery Panel” to display all deliverable items. This panel features a combo box in the top-left corner for filtering the item list. By default, the combo box is unselected, and all items are displayed. The item types are retrieved from the Logis API’s `GetItemTypes` method. The items, fetched using the `GetItems` method of the same API, are displayed as tiles sorted by the closest delivery expiry date. Each tile includes an item type image (retrieved using `GetItemTypeImage`), the item name, address, and an icon button.

When the icon button is clicked, a detailed description of the item delivery is shown. This includes the item name, item type, estimated delivery cost, estimated delivery date, and a diagram displaying the delivery route. The delivery route is calculated based on the most economical path that ensures delivery within the item’s expiry date. For instance, if there are two possible paths for delivery within the item’s expiry date (assuming today’s date is 27 Feb 2024), the path with the lowest cost is chosen as the delivery route. If an item cannot be delivered within its expiry date, only the item name and type are displayed, along with a message stating, “This item is not able to be delivered within the date.”

There is also a button to update the item status. If the item can be delivered within the date,

“Complete Delivery” is displayed; otherwise, “Suspend Delivery” is displayed. Upon clicking the button, an email is dispatched to the receiver using the Papercut software. The email is sent from the address “admin@logis.my”.

The title of the email varies based on the delivery status. If the delivery is completed, the email title should be “Complete Delivery”.

Dear {receiver name},

We are pleased to inform you that the item, **{item name in bold}** was successfully delivered on {estimated delivered date in dd/mm/yyyy}. The total cost of the delivery amounted to RM {estimated amount}.

Thank you for your business with us.

Conversely, if the delivery is suspended, the title should be “Suspend Delivery”.

Dear {receiver name},

We regret to inform you that we are unable to deliver the item, **{item name in bold}**, within the expected timeframe. We sincerely apologize for any inconvenience this may cause.

Thank you for your understanding.

Once the status is updated, the item should be removed from the list. However, since we don't store the item in a database, the item will reappear the next time the application is executed.

## Unit Test

Write a unit test to verify the contents of the “data.txt” file. This file contains several test cases, each with a given departure location id and arrival location id. The test should calculate the longest duration required to deliver an item and verify whether this matches the value in the “longest duration” field. The output of the test should display the total number of test cases that matched and did not match the calculated longest duration.