Express Delivery is a major shipping company, and you have been hired to design and develop a Java program that meets the following functionality. Please read below for detailed program requirements.

Part 1: Program specification

The program should only execute by clicking on the "act" button on the Greenfoot interface.

When the user adds an instance of an actor sub class to the Greenfoot scenario and clicks on the act button, the program should display a menu with the following options:

Welcome to Express Delivery. You can select an option from 1-4.

1. Add Shipping Order
2. Update Shipping Status
3. Display all Orders
4. Exit the system

Your program should repeatedly display the menu, until user selects the option 4.

If the user selects the option 1 – "Add Shipping Order":

The program should ask the user for the weight of the parcel and the distance to destination. Also, the program should ask the user to enter a voucher code, if they want to use a voucher.

Weight of the parcel: The Company only accepts to deliver parcels 30kg or less due to the company's insurance policy. Minimum parcel weight must be 1 kg.

The minimum distance for a parcel delivery is 5km. Maximum distance for the destination is 3000km. 5 km or part thereof will be charged according to the Table 1.

If the user enters a valid input for the weight and distance, the program should calculate the total shipping cost using the rates given in the Table 1. In case of an invalid input, the program should display an appropriate error message using a dialog box and should repeatedly ask for input until valid input is provided.

Table1: Shipping rates

Weight of Package (in Kilograms)	Rate per 5 km
2 kg or less	$8.10
Over 2 kg but not more than 6 kg	$9.20
Over 6 kg but not more than 10 kg	$12.70
Over 10 kg but not more than 30 kg	$16.80

If an existing voucher number (as per Table 2) is matched with the user entered voucher code, the shipping charges should be decreased by the value of the voucher and amount payable must be calculated for that order. Any leftover voucher amounts will be foregone. In case of an invalid voucher number, display an error message using a dialog box: **"Invalid voucher number."**

Details of the new shipping order such as total shipping cost, amount payable (final shipping amount after applying any voucher codes), voucher amount used, shipment Id and the shipment status should be stored in the program. Your program must be able to save the above data for up to 50 orders.

You must also track the total number of shipping orders placed in your program.

Program should also create a shipment Id and update the status for each new order as below.

Shipment ID: This should be a unique number auto generated using the following simple algorithm.

- Use your student ID as the first Shipment Id. Increment it by 1 for the next shipment.

Shipment status: It can be one of the following codes: 'D','P', or 'W'.

'D': Delivered to the destination

'P': Processing

'W': Waiting at the warehouse to be delivered.

When a new shipping order is added, its initial shipment status should be recorded as 'W'.

If the user selects the option 2- "Update Shipping Status":

The program should display the shipping Ids of all the orders with status codes 'P' and 'W'. Then ask the user to enter the shipment Id for which they wish to update the status code. If the entered value matches with an existing shipment ID, then a status code - 'D' or 'P' should be entered. Otherwise, the program should display an appropriate error message.

If the user selects the option 3- "Display all Orders":

The program should display the shipment Id, total shipping cost (full amount), amount payable (full amount – voucher value), voucher amount used, and shipment status for each new order on the console output.

If the user selects the option 4- "Exit the system":

The Greenfoot program must stop, and the following message must be displayed to the user using a dialog box - "Thank you for using Shipping Express Company".

Part 2: Data

You should use arrays for this assignment. Any data entered by the user must be done using dialog boxes. Apply best programming practices: meaningful identifier names, indentation etc.

Your program should store voucher Ids and voucher amount for up to 5 vouchers as given in Table 1. You need to use suitable data types and data structures and should provide this initial data in your program before run time.

Table 2:

Voucher Number	Voucher value
1111	$10
2222	$20
3333	$30
4444	$40
5555	$50

Part 3: Comments:

You need to add following information to the class documentation (block comments to your program with following details:

Student Name:

Student ID:

Purpose: Applied project

Date:

Version:

You need to use appropriate method heading which gives the name of the method and use block comments to explain the purpose of the method, return type, expected arguments.

All variables, decision statements, loops, etc. need to be documented with comments to explain the purpose of them.