IT230 – Gas Station Assignment

Assume that a gas station has asked you to develop a simple program which allows a clerk to perform cashier tasks. The program must allow the clerk to enter a dollar amount of gas purchase and select whether the customer includes car wash in his/her purchase or not. Three buttons (Pay, Print Receipt and Clear) must be included in the GUI for the clerk to perform actions accordingly.

To develop the program, please follow the steps below.

1. Create a Java GUI class, "GasStation1". The GUI must contain the components as shown below. However, the layout can be different. You can come up with your own design.
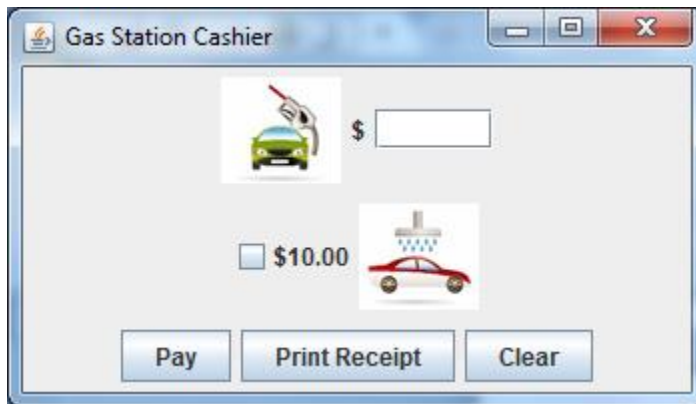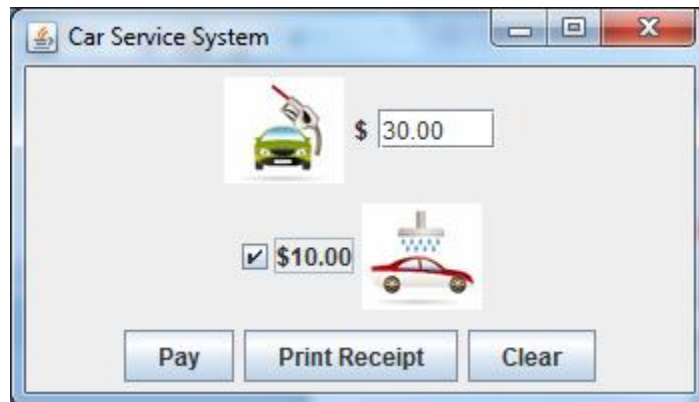

Figure a) GUI

2. Create a new Java GUI class, "GasStation2". The GUI is an exact copy of the GUI you create on "GasStation1".
   a) Add ActionListener to the "Pay" button so that it displays a pop up box containing the information as shown below.
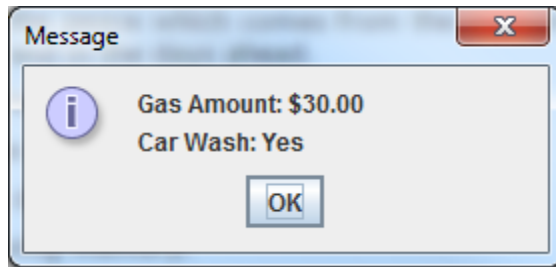   b) Add ActionListener to the "Clear" button so that it clears out information entered and selected.

Figure b) Pop-up box with information appears when "Pay" button is clicked. Car wash is checked.
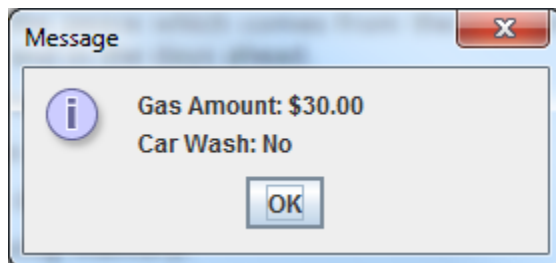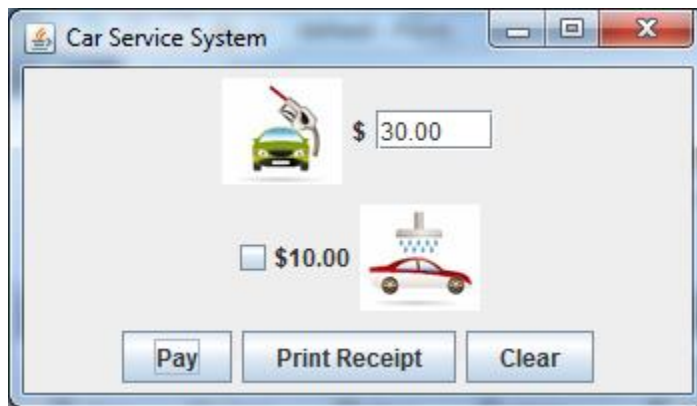

Figure c) Pop-up box with information appears when "Pay" button is clicked. Car wash is not checked.

3. Create the following Java Exception class
   a) AmountException
      This class must include two constructors. One that displays a default error message, "Error: Amount is required!!!". The other allows the error message to be changed.
   b) Create a new Java GUI, "GasStation3" The GUI is an exact copy of the GUI you create on the "GasStation2". Modify this class by adding the exception you create above to detect the following:

If the dollar amount for gas is blank, the program must throw the AmountException and pop-up the default error message.
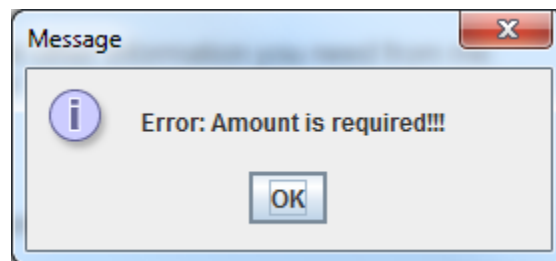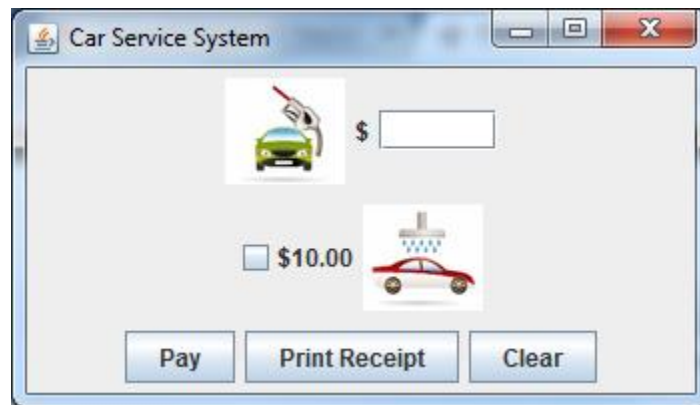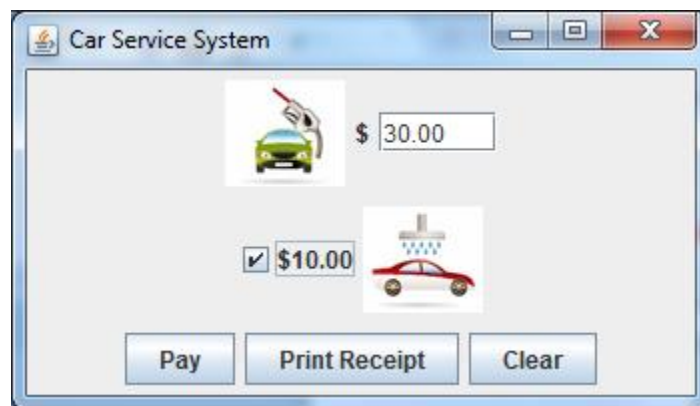

Figure d) "Pay" button is clicked while the dollar amount for gas is blank.

4. Create a new Java GUI class, "GasStation4". The GUI is an exact copy of the GUI you create on the "GasStation3".
    a) Modify this class by adding a process of writing the data to a text file when the "Pay " button is clicked. Name your file as "receipt.txt".
    b) Modify the class by adding a process of reading the data from the text file, "receipt.txt", and print the content in the file when "Print Receipt" button is clicked.
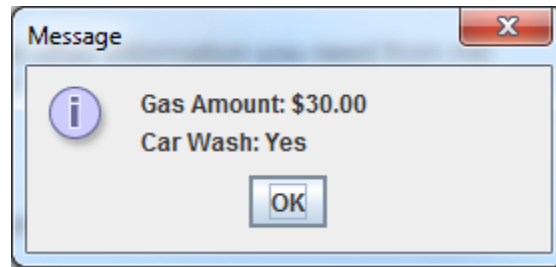
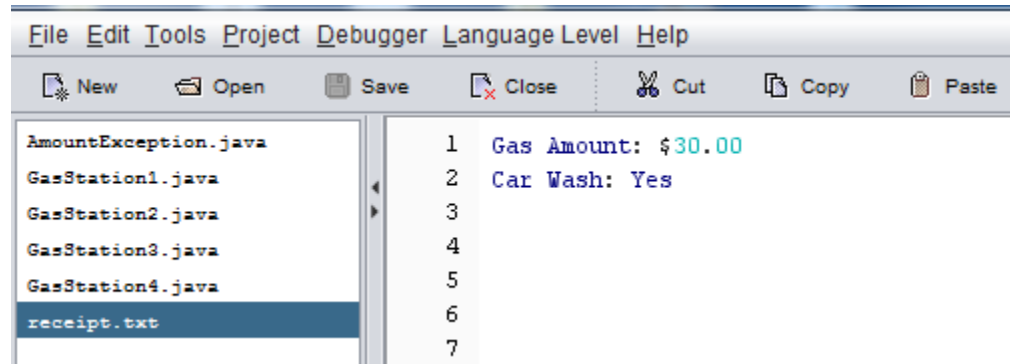**Figure e)** Input information and pop-up box

Figure f) Content is saved in the receipt.txt file.

Figure g) When the "Print Receipt" button is clicked, the content in the file is printed.

5. Create a new Java GUI class, "GasStation5". The GUI is an exact copy of the GUI you create on the "GasStation4".
   a) Modify this class so that when the "Pay" button is clicked, it also includes the total purchase in the pop-up box and write the total amount to the receipt.txt.
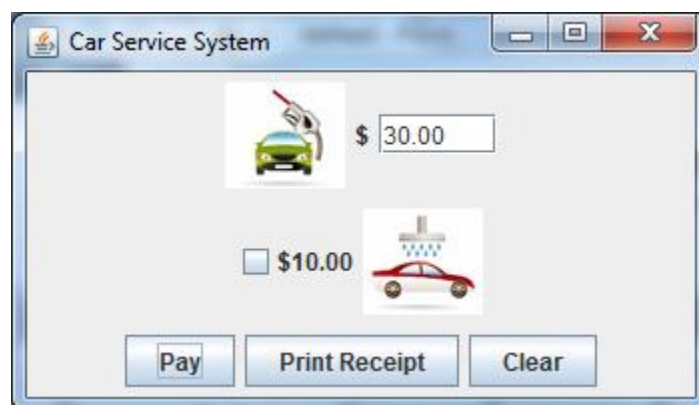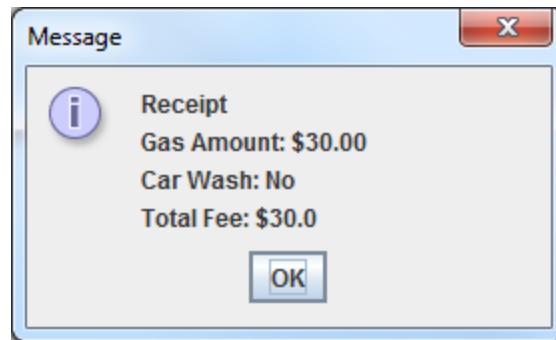
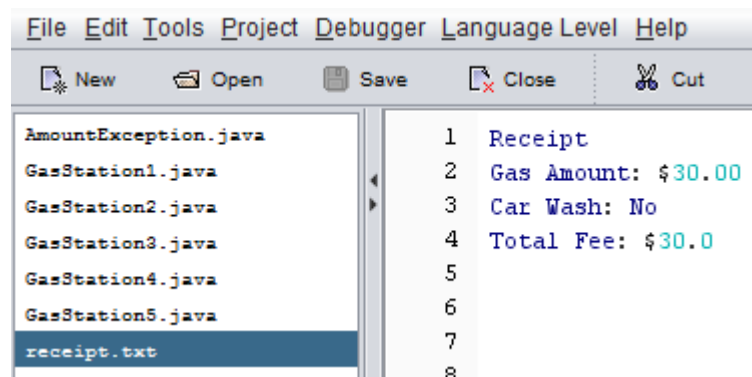**Figure h)** Pop-up box when car wash is not checked

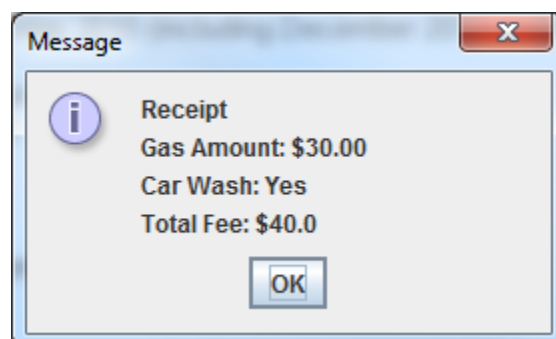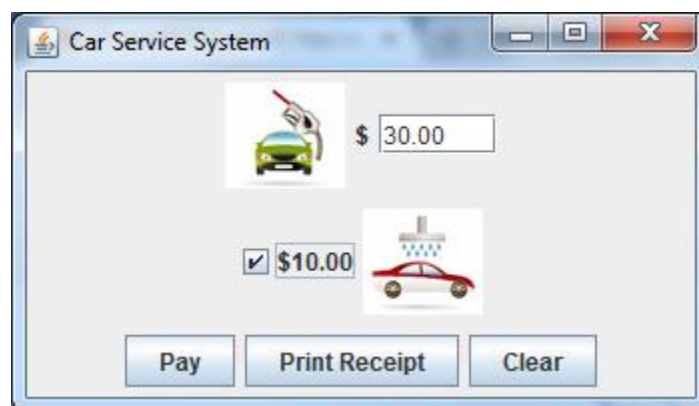**Figure i)** receipt.txt when car wash is not checked

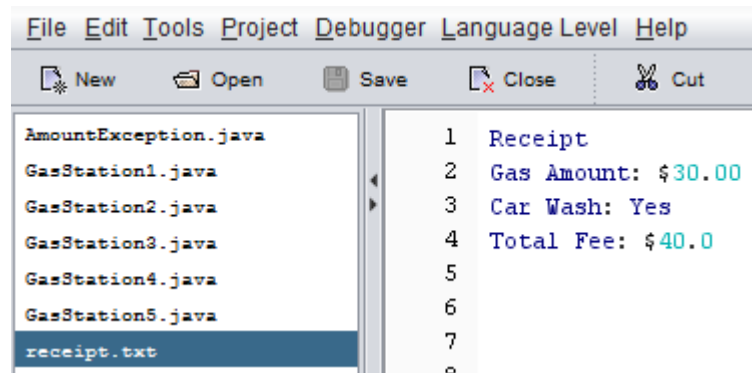**Figure j)** Pop-up box when car wash is checked

Figure k) receipt.txt when car wash is checked

b) Use the AmountException you created above to also check that the dollar amount for gas is not a zero or negative number. If a zero or negative number is entered, your program must throw the AmountException with a new error message saying "Error: Your dollar amount is either a zero or negative number!!!" and should not perform anything else.
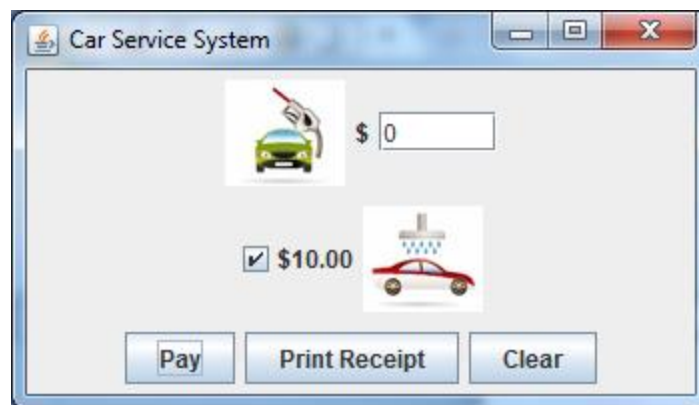

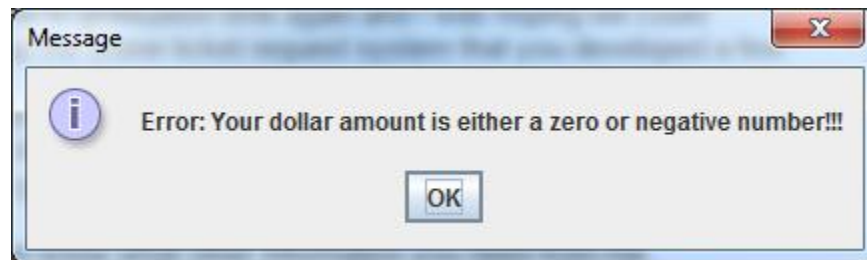**Figure l)** 0 is entered in the dollar amount.

Figure m) When "Pay" button is clicked, AmountException is thrown with the error message.

Note: At this point, when the dollar amount is blank, the error message must still be the default error message, "Error: Amount is required!!!".