COMP1618 Exercise 3 – Decisions

Task 1: The if Statement, Comparing Strings, and Flags

1. Download the **Lab2.zip** file from Moodle.
2. **Extract all..** and add *Pizza.java* and *PizzaOrder.java* to the same project (Refer to Exercise 1 to how to create a new project with existing codes)
3. *Pizza.java* is correct, so you will not be editing this file. You only need to compile it. Compile and run *PizzaOrder.java*. You will be able to make selections, but at this point, you will always get a 12-inch Hand-tossed pizza no matter what you select, but you will be able to choose toppings. You will also notice that the output does not look like money. So we need to edit *PizzaOrder.java* to complete the program so that it works correctly.

```
44          //ADD LINES HERE FOR TASK #1
```

4. Construct a simple if statement. The condition will compare the String input by the user as his/her first name with the first names of the owners, Abdul and Diane. Be sure that the comparison is not case sensitive.
5. If the user has either first name, set the discount flag to true.

Task 2: The if-else-if Statement

1. Write an if-else-if statement that lets the computer choose which statements to execute by the user input size (10, 12, 14, or 16). For each option, two statements need to be executed:
    a. A call to the setSize method passing in the size indicated.
    b. A call to the setCost method passing in the appropriate adjustment.

```
order.setCost(-2); // adjustment -£2 (= £10.99-£12.99)
order.setSize(inches);
```

Notice that in the Pizza.java program, the constructor creates a 12 inch Hand-tossed pizza for £12.99. The setCost method **adjusts** the cost, so a 10 inch pizza will need its cost decreased by 2, while the 16 inch pizza cost will need to increase by 4.

```
56          //set price and size of pizza ordered
57          //ADD LINES HERE FOR TASK #2
```

2. The default else of the above if-else-if statement should print a statement that the user input was not one of the choices, so a 12-inch pizza will be made.
3. Compile, debug, and run. You should now be able to get correct output for size and price (it will still have Hand-tossed crust, the output won't look like money, and no discount will be applied yet). Run your program multiple times ordering a 10, 12, 14, 16, and 17-inch pizza.

Task 3: Switch Statement

1. Write a switch statement that compares the user's choice with the appropriate characters (make sure that both capital letters and small letters will work).
2. Each case will call the setCrust method passing in the appropriate String indicating crust type.

3. The default case will print a statement that the user input was not one of the choices, so a hand-tossed crust will be made.
4. Compile, debug, and run. You should now be able to get crust types other than Hand-tossed. Run your program multiple times to make sure all cases of the switch statement operate correctly.

```
70          //set user's crust choice on pizza ordered
71          //ADD LINES FOR TASK #3
72          //prompt user and get topping choices one at a time
```

Task 4: Using a Flag as a Condition

1. Write an if-statement that uses the flag as the condition. Remember that the flag is a Boolean variable, therefore is true or false. It does not have to be compared to anything.
2. The body of the if-statement should contain two statements:
    a. A statement that prints a message indicating that the user is eligible for a £2.00 discount.
    b. A statement that reduces the variable cost by 2.
3. Compile, debug, and run. Test your program using the owners' names (both capitalized and not) as well as a different name. The discount should be correctly at this time.

```
142         //apply discount if user is eligible
143         //ADD LINES FOR TASK #4 HERE
```

Task 5 Formatting Numbers

1. Add an import statement to use the DecimalFormat class.
2. Create a DecimalFormat object that always shows 2 decimal places.
3. Edit the appropriate lines in the main method so that any monetary output has 2 decimal places.
4. Compile, debug, and run. Your output should be completely correct at this time, and numeric output should look like money.

```
145         //EDIT PROGRAM FOR TASK #5
146         //SO ALL MONEY OUTPUT APPEARS WITH 2 DECIMAL PLACES
```

Congratulations! You completed the exercise on Java Decisions.