Lab 5: Discount Calculator

CSE 174 – Fall 2021

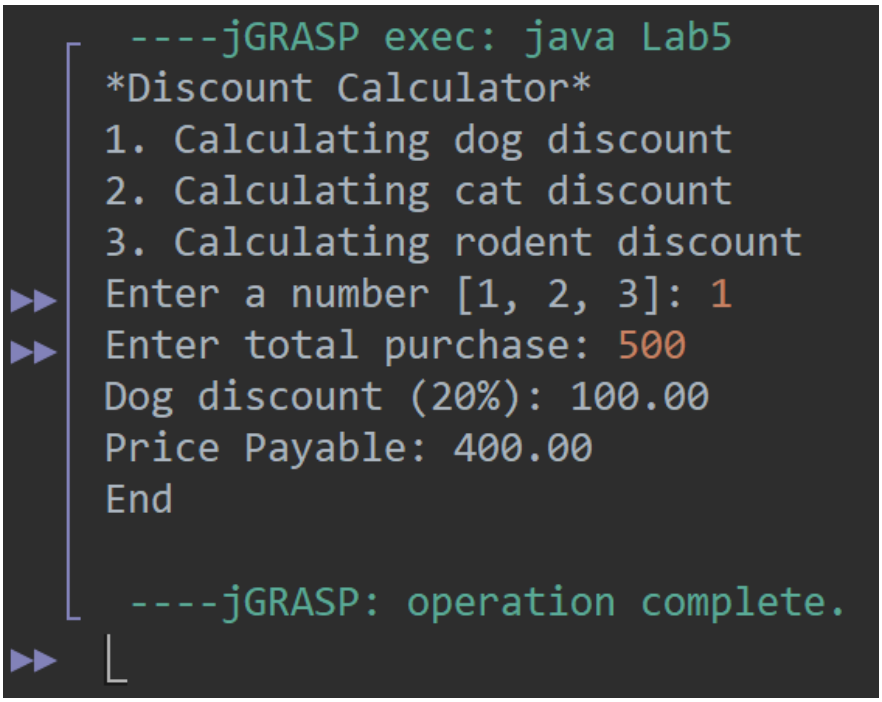
lab5: 20 points – Due Saturday, Sep 25, 2021 by 11:59pm

Discount Calculator

The Animal Friends Humane Society has just opened, and in order to encourage hype they have decided to do their grand opening with a special discount program! They have hired you to develop a program to be used by the cashiers to calculate discounts given to adopters based on the type of animal adopted. This program needs calculate the discount for all animals based on the following table:

Discount	Purchase less than or equal to $100	Purchase greater than $100
Dogs	10%	20%
Cats	10%	15%
Rodents (Rats, Hamsters, etc.)	10%	12%

Just an example of what the code should look like when it's done:



Instructions Continue on Next Page!

Part 1: Printing the Menu

In this part you just need to prompt the cashier with a series of menu options and allow them to select an option from the menu. The options are as follows:

- 1. Calculating dog discount
- 2. Calculating cat discount
- 3. Calculating rodent discount

Once you are done your output should look like the following when you start the program:

```
----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]:
```

Note: At Animal Friends Humane Society we have a rigorous cashier training program, so we can assume the cashier will always input proper inputs.

Part 2: Getting Selection and Total Purchase

We can't get very far if you just let the inputs from the user go into the ether, plus we need to know how much stuff they are buying.

1. If you did not already, store the selection made by the user for use later (aka: Part 3).
2. Next you will need to prompt the user for the total amount of their purchase and store that for later.
    - **Keep in mind that prices in our store are down to the penny, so we need to make sure our cashers can input the exact total**

```
----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 1
Enter total purchase: 75
```

Part 3: Calculating the Discount

Now the most important part. If we calculate the wrong discount we can either leave a poor impression on our adopters or worse yet...lose money!!!

- Based on the input from the cashier, use an if-else or a switch-case statement to perform the proper calculation.
    - Remember you can combine conditionals (say you want to check that the selected option was 1 AND the total is greater than 100).
    - There are multiple ways to do this! If you have time feel free to see if you can come up with other ways to solve the same problem.

Sample Runs on Next Page!

BEFORE YOU START WORK ON THIS PART SEE THE LOGGING SECTION BELOW THESE IMAGES!!

```
 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 1
Enter total purchase: 154
Dog discount (20%): 30.80
Price Payable: 123.20
End

 ----jGRASP: operation complete.

 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 1
Enter total purchase: 83
Dog discount (10%): 8.30
Price Payable: 74.70
End

 ----jGRASP: operation complete.

 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 2
Enter total purchase: 94
Cat discount (10%): 9.40
Price Payable: 84.60
End

 ----jGRASP: operation complete.
```

```
 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 2
Enter total purchase: 139
Cat discount (15%): 20.85
Price Payable: 118.15
End

 ----jGRASP: operation complete.

 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 3
Enter total purchase: 35
Rodent discount (10%): 3.50
Price Payable: 31.50
End

 ----jGRASP: operation complete.

 ----jGRASP exec: java Lab5
*Discount Calculator*
1. Calculating dog discount
2. Calculating cat discount
3. Calculating rodent discount
Enter a number [1, 2, 3]: 3
Enter total purchase: 112
Rodent discount (12%): 13.44
Price Payable: 98.56
End

 ----jGRASP: operation complete.
```

Note: As you can see all the generated outputs are formatted using printf with 2 digits after the decimal point. We don't take halfpennies.

Instructions Continue on Next Page!

Double check the following:

1. Always use **meaningful** variable names. Don't use names such as "a", "b", "c".
2. Add comments at the top of your code with at least your name, section, and some descriptions.
3. Add comments inside your code to explain what is happening inside the code.
4. Remember to follow style guidelines as you write your code.

Additional tests:

There are two additional tests on the CODE plugin **that you are not able to see, but your code needs to pass them** in order to get full points. These additional tests simulate a real world situation when other people use your program and you never know what values they might use to run your code with. As a programmer, you always need to test your program using different inputs to make sure everything in your code works as expected.

Submission

After testing your code thoroughly, when you believe that you have correctly solved the problem, and that your code follows the style guidelines, submit it on canvas. If the autograder rejects your solution, fix it and resubmit it again.

Scoring Rubric (More detail on Canvas Rubric):

- **Successful Submission via CODE (12 points):** You will receive full credit for this if your code passes all the tests. Otherwise you will get zero or partial credit.
- **Additional Test Cases (4 points):** You will receive full credit for this if your code passes all the additional tests. Otherwise you will get zero or partial credit.
- **Correct Style and Having Comments (2 points):** You will receive full credit if your code has 0 style errors. Also your code has comments at the top at least with your name and description, and some comments inside the code to explain the code.
- **Proper Programming Practices (2 Points):** If your program is written applying all of the programming practices covered in class (e.g. variable naming, using proper conditions, minimal solutions, proper logic, avoiding hard coded values, etc.) you will receive full credit.