

04.06 Module Four Project

Name:

Directions

If you are up for a programming challenge, read on. *If not*, take a deep breath and then read on. You will use the software development life cycle (SDLC) to create a working program of your choice that will test Boolean conditions based on user input. Your program can include any Python skills and functions you have learned up to this point.

This assignment has five parts.

Step One: Planning & Analysis

Read the options carefully and choose **ONE** as the basis of your project.

Option 1 – Members Only

If you were going to create a club, what would it be and how could people join? Think about the membership requirements. Would members have to be between certain ages? Would they have to like certain things? Would they need certain skills? Because you are president of the club, you get to decide the criteria! (Just make sure the conditions are school appropriate.)

Follow these steps to begin your planning:

1. Create a club name and explain your club's purpose.
2. List the conditions (at least 3) to be a member of your club. Remember you have learned about `if`, `if-else`, `elif`, and logical operators (`and`, `or`, `not`), so you can test for just about anything.

Option 2 – Discount Deals

Saving money makes people smile! So, your job is to spread the cheer by coming up with a discount plan. For example, maybe people who are under 18 with green eyes get \$5 off the admission price. Maybe you want to reward honor roll students, military personnel, or state residents with free parking. Since this is your discount plan, you get to decide the criteria. (Just make sure the conditions are school appropriate.)

Follow these steps to begin your planning:

1. Choose a place (amusement park, movie theatre, sporting event, online store, etc.) and explain your discount program.
2. List the conditions (at least 3) to qualify for a discount. Remember you have learned about `if`, `if-else`, `elif`, and logical operators (`and`, `or`, `not`), so you can test for just about anything.

Option 3 – Programmer’s Adventure

If you want to journey the road less traveled and create your own program option, go for it! Keep in mind, the goal of your program is to evaluate **at least three** conditions based on user input. Remember you have learned about `if`, `if-else`, `elif`, and logical operators (`and`, `or`, `not`), so you can test for just about anything.

Possible Program Options:

- *Eye on the Prize* – Create a contest and the conditions to win.
- *Let Them Eat Cake!* – Order a cake based on certain conditions.
- *Dream Destination* – Suggest a vacation destination based on certain conditions.

Step Two: Design

It’s time to design your program by writing pseudocode. Be sure detail the input, calculations, decisions, and output. Your program must include the following elements:

- **Input statements**
 - Three input statements requesting data (numeric or non-numeric) from the user
 - Use of the `int()` and `float()` functions, if needed
- **Decision statements**
 - One `if`, `if-else`, or `elif` statement
 - One logical operator (`and`, `or`, `not`) in a Boolean condition
- **Output statements**
 - Create clear and well organized output to display messages that show the user’s input and the results of the decision statements.
 - Show proper use of the `str()` function, if needed.
- **Optional**
 - Use a list to store values.

Insert your pseudocode here:

- ❖ Define main
 - Print "Welcome to the Eco-Friendly Online Store!"
 - Set age to int of input of "Please enter your age: "
 - Set product_type to the input of "Please enter the product type (e.g., sustainable): "
 - Set community_involvement to the input of "Have you participated in a community clean-up event in the last 6 months? (yes/no): "

- Set `total_purchase_amount` to the float of the input of "Enter your total purchase amount: \$"
 - Set `discount_amount` to 0
 - Set `discount_message` to ""
 - If age is less than 25
 - Add 10 to `discount_amount`
 - Add "You receive a \$10 discount for being under 25.\n" to `discount_message`
 - If `product_type` to lower equals sustainable
 - Add $0.15 * \text{total_purchase_amount}$ to `discount_amount`
 - Add "You receive a 15% discount of \$[DISCOUNT AMOUNT] for purchasing sustainable products.\n" to `discount_message`
 - If `community_involvement` to lower equals yes
 - Add 5 to `discount_amount`
 - Add "You receive a \$5 discount for participating in community clean-up events.\n" to `discount_message`
 - Set `final_amount` to `total_purchase_amount - discount_amount`
 - Print "\nThank you for your purchase!"
 - Print "Your total purchase amount is: \$[TOTAL_PURCHASE_AMOUNT]"
 - Print `discount_message`
 - Print "Your total discount is: \$[DISCOUNT_AMOUNT]"
 - Print "Your final amount after discount is: \$[FINAL_AMOUNT]"
- ❖ Call main

Step Three: Coding

Use the following guidelines to write your program:

1. To code the program, use the Python IDLE.
2. Using comments, type a heading that includes your name, today's date, and a short description of the program.
3. Follow the Python style conventions regarding indentation and the use of white space in your program.
4. Use meaningful names for all variables.

Example of expected output: The output for your program should resemble the following screen shot. Your specific results will vary depending on the choices you make and the input provided.

Output:

This is the Wacky Writers Club!

Wanda, thank you for answering the application questions.

Your application replies are:

Age: 15

Love to write: y

Favorite genre: mystery

Previous work published: n

Willing to share a story: n

We love that you love to write. We do, too!

Unfortunately, you do not meet the willingness to share requirement for a membership to the Wacky Writers Club at this time.

Output:

Let's pick a vacation destination!

Chloe, thank you for your selections!

You said your ideal vacation would be on wavy water, looking for an adventure, and traveling abroad.

The vacation destination recommended is to explore the Australian Reefs in an undersea ship!

Insert a copy of your code from the IDLE here:

```
def main():  
  
    # Welcome message  
  
    print("Welcome to the Eco-Friendly Online Store!")  
  
    # Input statements  
  
    age = int(input("Please enter your age: ")) # Input age  
  
    product_type = input("Please enter the product type (e.g.,  
sustainable): ") # Input product type  
  
    community_involvement = input("Have you participated in a community  
clean-up event in the last 6 months? (yes/no): ") # Input involvement  
  
    # Assume a predefined total purchase amount  
  
    total_purchase_amount = float(input("Enter your total purchase amount:  
$")) # Input total purchase amount
```

```
# Initialize discount variables

discount_amount = 0

discount_message = ""

# Decision statements

if age < 25:

    discount_amount += 10

    discount_message += "You receive a $10 discount for being under
25.\n"

if product_type.lower() == "sustainable":

    discount = 0.15 * total_purchase_amount

    discount_amount += discount

    discount_message += "You receive a 15% discount of $" +
str(round(discount, 2)) + " for purchasing sustainable products.\n"

if community_involvement.lower() == "yes":

    discount_amount += 5

    discount_message += "You receive a $5 discount for participating
in community clean-up events.\n"

# Calculate final amount

final_amount = total_purchase_amount - discount_amount
```

```

# Output statements

print("\nThank you for your purchase!")

print("Your total purchase amount is: $" +
str(round(total_purchase_amount, 2)))

print(discount_message)

print("Your total discount is: $" + str(round(discount_amount, 2)))

print("Your final amount after discount is: $" +
str(round(final_amount, 2)))

# Run the discount program

main()

```

Step Four: Testing

Run your code and evaluate the output. Then, answer the following questions in the testing chart. Use two to three meaningful sentences to answer each question.

Testing Question	Response
What bugs did you identify in your code?	I had accidentally forgotten to use my int str and float so i had gotten some syntax errors
How did you fix the bugs?	Just added the int str and float statements

Step Five: Maintenance

Passionate programmers strive to improve their code! In two to three meaningful sentences, answer the following questions in the maintenance chart to consider the next steps of your program.

Maintenance Question	Response
	Add more discount opportunities.

What design and functionality improvements could you make to your program?	Break the code into smaller functions for better organization and readability. Use f strings to increase efficiency.
How can you get feedback on ways to improve your program?	User Surveys, User Testing, Feedback Forms, Social Media and Online Communities, Beta Testing, Analytics and Usage Tracking, Engage with Stakeholders, Focus Groups
How can you expand your program into a new, better program in the future?	Add more discount opportunities. Break the code into smaller functions for better organization and readability/
What are potential bugs users may possibly encounter if your program is expanded into a new program in the future?	Possible syntax errors. Slow execution. plenty of other reasons