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**Internship Domain: python**

**Task week : 3**

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## TASK 1

### Description

This Python program is a simple **calculator** that:

- Accepts **two numbers** and an **operator** from the user (+, -, \*, /, %, //)
- Performs the selected **arithmetic operation**
- **Safely handles division/modulus/floor division by zero** by checking before calculation
- Displays the **result** clearly
- Shows an error message if the user enters an **invalid operator**

### Program

```

7  # Step 1: Get user input
8  num1 = float(input("Enter the first number: "))
9  operator = input("Enter the operator (+, -, *, /, %, //): ")
10 num2 = float(input("Enter the second number: "))
11
12 # Step 2: Perform operation based on the operator
13 if operator == '+':
14     result = num1 + num2
15     print(f"Result: {num1} + {num2} = {result}")
16
17 elif operator == '-':
18     result = num1 - num2
19     print(f"Result: {num1} - {num2} = {result}")
20
21 elif operator == '*':
22     result = num1 * num2
23     print(f"Result: {num1} * {num2} = {result}")
24
25 elif operator == '/':
26     if num2 == 0:
27         print("Error: Division by zero is not allowed.")
28     else:
29         result = num1 / num2
30         print(f"Result: {num1} / {num2} = {result}")
31
32 elif operator == '%':
33     if num2 == 0:
34         print("Error: Modulus by zero is not allowed.")
35     else:
36         result = num1 % num2
37         print(f"Result: {num1} % {num2} = {result}")
38
39 elif operator == '//':
40     if num2 == 0:
41         print("Error: Floor division by zero is not allowed.")
42     else:
43         result = num1 // num2
44         print(f"Result: {num1} // {num2} = {result}")
45
46 else:
47     print("Invalid operator! Please use +, -, *, /, %, or //")
48

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```

Enter the operator (+, -, *, /, %, //): /
Enter the second number: 2
Result: 5.0 / 2.0 = 2.5
Result: 5.0 / 2.0 = 2.5
PS C:\Users\naazs\Documents\internship 2 taske 3> 

```

## TASK 2

### Discription

This Python program:

1. **Takes marks** for 3 subjects from the user
2. Calculates the **total marks** and **percentage**
3. Assigns a **grade** based on the percentage:
  - A → 85% or above
  - B → 70% to 84.99%
  - C → 50% to 69.99%
  - Fail → Below 50%
4. Displays the **total marks**, **percentage (rounded to 2 decimals)**, and the **grade**

## **PROGRAM**

```
task2.py > ...
1  #Take marks of 3 subjects.
2  #Calculate total, percentage and assign grade:
3  #A (>=85), B (>=70), C (>=50), Fail (<50).
4  # Step 1: Take input of marks for 3 subjects
5  sub1 = float(input("Enter marks for Subject 1: "))
6  sub2 = float(input("Enter marks for Subject 2: "))
7  sub3 = float(input("Enter marks for Subject 3: "))
8
9  # Step 2: Calculate total and percentage
10 total_marks = sub1 + sub2 + sub3
11 percentage = (total_marks / 300) * 100 # Assuming each subject is out of 100
12
13 # Step 3: Assign grade based on percentage
14 if percentage >= 85:
15     grade = "A"
16 elif percentage >= 70:
17     grade = "B"
18 elif percentage >= 50:
19     grade = "C"
20 else:
21     grade = "Fail"
22
23 # Step 4: Display result
24 print(f"\nTotal Marks: {total_marks}/300")
25 print(f"Percentage: {percentage:.2f}%")
26 print(f"Grade: {grade}")
27

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
• PS C:\Users\naaazs\Documents\internship 2 taske 3> & C:/Python/Python313/python.exe "c:/Users/naazs/
Enter marks for Subject 1: 56
Enter marks for Subject 2: 34
Enter marks for Subject 3: 67

Total Marks: 157.0/300
Percentage: 52.33%
Grade: C
• PS C:\Users\naaazs\Documents\internship 2 taske 3> |
```

## TASK 3

### Discription

This Python program:

1. Takes user input for:

- Monthly income
  - Monthly expenses
2. **Calculates savings** by subtracting expenses from income
3. **Classifies savings** based on amount:
  - **Above 10,000** → "Saving Well"
  - **Between 5,000 and 9,999** → "Average"
  - **Below 5,000** → "Try to Save"
4. **Displays the savings and classification status** clearly

## PROGRAM

```
1  #Ask user for monthly income and expenses.
2  #Calculate savings and classify:
3  #>10000 = Saving Well, 5000-9999 = Average, <5000 = Try to Save.
4
5
6
7  # Step 1: Input from user
8  income = float(input("Enter your monthly income: "))
9  expenses = float(input("Enter your monthly expenses: "))
10
11 # Step 2: Calculate savings
12 savings = income - expenses
13
14 # Step 3: Classify savings
15 if savings > 10000:
16     status = "Saving Well"
17 elif 5000 <= savings <= 9999:
18     status = "Average"
19 else:
20     status = "Try to Save"
21
22 # Step 4: Display results
23 print(f"\nYour savings: {savings:.2f}")
24 print(f"Status: {status}")
25
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

```
● PS C:\Users\naazs\Documents\internship 2 taske 3> & C:/Python/Python313/python
Enter your monthly income: 10000
Enter your monthly expenses: 5000

Your savings: 5000.00
Status: Average
○ PS C:\Users\naazs\Documents\internship 2 taske 3> |
```

## TASK4

### Description

This Python program:

1. Asks the user to **enter a username and password**
2. Checks if:
  - **Username** is "admin"
  - **Password** is "1234"
3. If both are correct, it prints ✓ **"Access Granted"**
4. Otherwise, it prints ✗ **"Access Denied"**

```
task4.py > ...
1  #Build a login system. Ask username & password.
2  #If username = 'admin' and password = '1234', print Access Granted. Else, Access Denied.
3  # Step 1: Ask for username and password
4  username = input("Enter your username:")
5  password = input("Enter your password:")
6
7  # Step 2: Check credentials
8  if username == "admin" and password == "1234":
9      print("Access Granted")
10 else:
11     print("Access Denied")
12
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
● PS C:\Users\naaazs\Documents\internship 2 taske 3> & C:/Python/Python313/python.exe "c:/Users/naaazs/Docume
Enter your username: admin
Enter your password: 1234
Access Denied
○ PS C:\Users\naaazs\Documents\internship 2 taske 3> □
```

## TASK 5

### Discription

This Python program:

1. Takes **attendance percentage** and **final marks** from the user
2. Checks two conditions:
  - **Attendance  $\geq 75\%$**
  - **Marks  $\geq 50$**
3. If both conditions are true, it prints "Promoted"
4. Otherwise, it prints "Not Promoted"

### Program

```
tasks.py > ...
1  #Ask user for attendance (%) and final marks. If attendance  $\geq 75$  and marks  $\geq 50$  'n Promote Else 'n Not promoted.
2  # Step 1: Get input from user
3  attendance = float(input("Enter your attendance percentage: "))
4  marks = float(input("Enter your final marks: "))
5
6  # Step 2: Check both conditions
7  if attendance >= 75 and marks >= 50:
8      print(" Promoted")
9  else:
10     print(" Not Promoted")
11
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\naazs\Documents\internship 2 taske 3> & C:/Python/Python313/python.exe "c:/Users/naazs/Documents/internship 2 taske 3/tas
Enter your attendance percentage: 60
Enter your final marks: 50
Not Promoted
PS C:\Users\naazs\Documents\internship 2 taske 3> |
```

## Task 6

### Discretion

This Python program:

1. Takes input for:
  - **Number of products**
  - **Total price of the purchase**

2. Applies discount based on the conditions:
  - **15% discount** if total price > 1000 **and** products > 3
  - **10% discount** if total price > 500

**No discount** otherwise
3. Calculates the **final bill** by subtracting the discount from total price
4. Displays:
  - Original total price
  - Discount amount
  - Final payable bill

#### Program

```
task6.py > ...
1  # Step 1: Input from user
2  products = int(input("Enter number of products: "))
3  total_price = float(input("Enter total price: "))
4
5  # Step 2: Apply discount
6  if total_price > 1000 and products > 3:
7      discount = 0.15 * total_price
8  elif total_price > 500:
9      discount = 0.10 * total_price
10 else:
11     discount = 0.0
12
13 # Step 3: Calculate final amount
14 final_bill = total_price - discount
15
16 # Step 4: Show result
17 print(f"\nTotal Price: Rs. {total_price:.2f}")
18 print(f"Discount Applied: Rs. {discount:.2f}")

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
● PS C:\Users\naazs\Documents\internship 2 taske 3> & C:/Python/Python313/python
Enter number of products: 30
Enter total price: 1000

Total Price: Rs. 1000.00
Discount Applied: Rs. 100.00
Final Bill to Pay: Rs. 900.00
○ PS C:\Users\naazs\Documents\internship 2 taske 3> 
```