

## Assignment 6.2

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Batch – 03

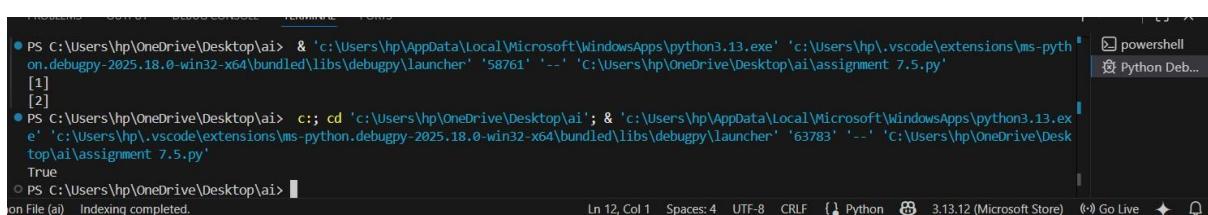
### Task 1: (Classes – Data Validation)

- Prompt AI to generate a Student class with attributes: name, roll\_no, and marks. Add a method is\_pass() that returns whether the student has passed (marks  $\geq 40$ ).

```
Fact.py > ...
1  class Student:
2      def __init__(self, name, roll_no, marks):
3          self.name = name
4          self.roll_no = roll_no
5          self.marks = marks
6
7      def is_pass(self):
8          return self.marks >= 40
9
10
11 s1 = Student("Akshith", 1177, 65)
12 print(s1.is_pass())
```

### Expected Output-1

- Python class with constructor and validation logic
- Clear method implementation returning pass/fail status
- Students analyze correctness and clarity of class design



The screenshot shows a terminal window with the following command and output:

```
PS C:\Users\hp\OneDrive\Desktop\ai> & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\.vscode\extensions\ms-python.python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '58761' --- 'c:\Users\hp\OneDrive\Desktop\ai\assignment 7.5.py'
[1]
[2]
PS C:\Users\hp\OneDrive\Desktop\ai> c:; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '63783' --- 'c:\Users\hp\OneDrive\Desktop\ai\assignment 7.5.py'
True
PS C:\Users\hp\OneDrive\Desktop\ai>
```

The terminal shows the execution of a Python script named 'assignment 7.5.py'. The script creates a 'Student' class with attributes 'name', 'roll\_no', and 'marks', and a method 'is\_pass()' that returns True if marks are greater than or equal to 40. The output indicates that the script was run successfully and returned 'True'.

## Task 2: (Loops – Pattern Generation)

Ask AI to generate a function that prints a right-angled triangle star pattern using a for loop. Then regenerate the same pattern using a while loop.

```
assignment 7.5.py > ...
1 def triangle_while(n):
2     i = 1
3     while i <= n:
4         print("*" * i)
5         i += 1
6
7 triangle_while(5)
8 # Task 5: Privacy-Aware Data Logging
```

## Output-2

- Correct pattern output using both loop types
- Logical loop structure with proper conditions

```
● PS C:\Users\hp\OneDrive\Desktop\ai> c;; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\W...
e' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '49562...
top\ai\assignment 7.5.py'
*
**
***
****
*****
○ PS C:\Users\hp\OneDrive\Desktop\ai> []
```

## Task 3: (Conditional Statements – Number Analysis) Ask AI to

write a function that checks whether a given number is positive, negative, or zero using if-elif-else. Test the function with multiple inputs.

```
assignment 7.5.py > ...
1  def check_number(num):
2      if num > 0:
3          return "Positive"
4      elif num < 0:
5          return "Negative"
6      else:
7          return "Zero"
8
9 print(check_number(10))
10 print(check_number(-5))
11 print(check_number(0))
12 |
```

### Output-3

- Function correctly classifies numbers
- Proper handling of all conditions
- Students analyze decision logic

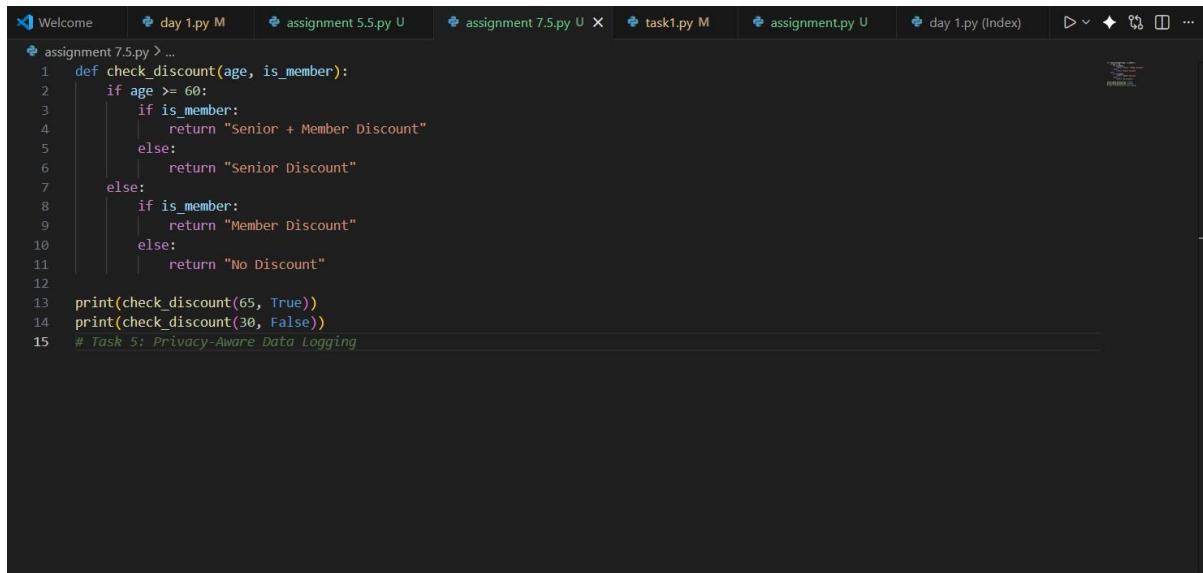
```
● PS C:\Users\hp\OneDrive\Desktop\ai> c:; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\VSCode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '5394top\ai\assignment 7.5.py'
Positive
Negative
Zero
○ PS C:\Users\hp\OneDrive\Desktop\ai> []
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```

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### Task 4: (Nested Conditionals)

Generate a function `check_discount(age, is_member)` that determines discount eligibility:

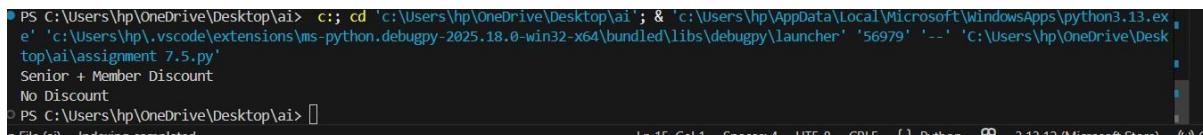
- Age  $\geq 60 \rightarrow$  Senior discount
- Member  $\rightarrow$  Additional discount Use nested if statements.



```
assignment 7.5.py > ...
1 def check_discount(age, is_member):
2     if age >= 60:
3         if is_member:
4             return "Senior + Member Discount"
5         else:
6             return "Senior Discount"
7     else:
8         if is_member:
9             return "Member Discount"
10        else:
11            return "No Discount"
12
13 print(check_discount(65, True))
14 print(check_discount(30, False))
15 # Task 5: Privacy-Aware Data Logging
```

## Output-4

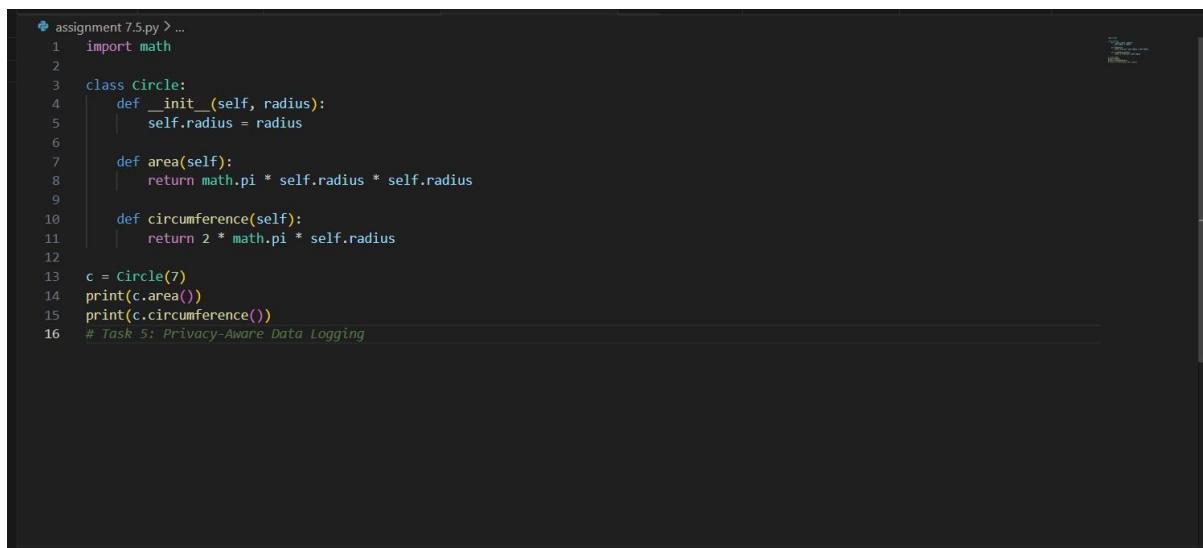
- Python code using nested conditionals
- Clear explanation of decision flow



```
PS C:\Users\hp\OneDrive\Desktop\ai> cd 'c:\users\hp\OneDrive\Desktop\ai'; & 'c:\users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '56979' '--' 'c:\Users\hp\OneDrive\Desktop\ai\assignment 7.5.py'
Senior + Member Discount
No Discount
PS C:\Users\hp\OneDrive\Desktop\ai>
```

## Task 5: (Class – Mathematical Opera)

- Ask AI to create a Circle class with methods to calculate area () and circumference () given the radius.

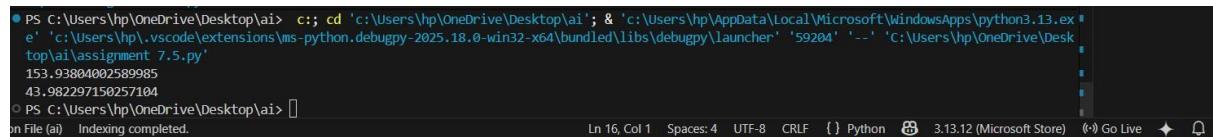


```
assignment 7.5.py > ...
1 import math
2
3 class Circle:
4     def __init__(self, radius):
5         self.radius = radius
6
7     def area(self):
8         return math.pi * self.radius * self.radius
9
10    def circumference(self):
11        return 2 * math.pi * self.radius
12
13 c = Circle(7)
14 print(c.area())
15 print(c.circumference())
16 # Task 5: Privacy-Aware Data Logging
```

## Output-5

- Correct mathematical computation

- Well-structured class with methods
- Code explanation provided



```
● PS C:\Users\hp\OneDrive\Desktop\ai> c;; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '59204' '--' 'C:\Users\hp\OneDrive\Desktop\ai\assignment_7.5.py'
153.93804002589985
43.982297150257104
○ PS C:\Users\hp\OneDrive\Desktop\ai> []
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```

The screenshot shows a terminal window with the following command and output:

```
● PS C:\Users\hp\OneDrive\Desktop\ai> c;; cd 'c:\Users\hp\OneDrive\Desktop\ai'; & 'c:\Users\hp\AppData\Local\Microsoft\WindowsApps\python3.13.exe' 'c:\Users\hp\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '59204' '--' 'C:\Users\hp\OneDrive\Desktop\ai\assignment_7.5.py'
153.93804002589985
43.982297150257104
○ PS C:\Users\hp\OneDrive\Desktop\ai> []
In File (ai) Indexing completed
```