

ASSIGNMENT – 5

NAME : NALLALA SIRI

HALL TICKET NO : 2403A52037

BATCH NO : AIB03

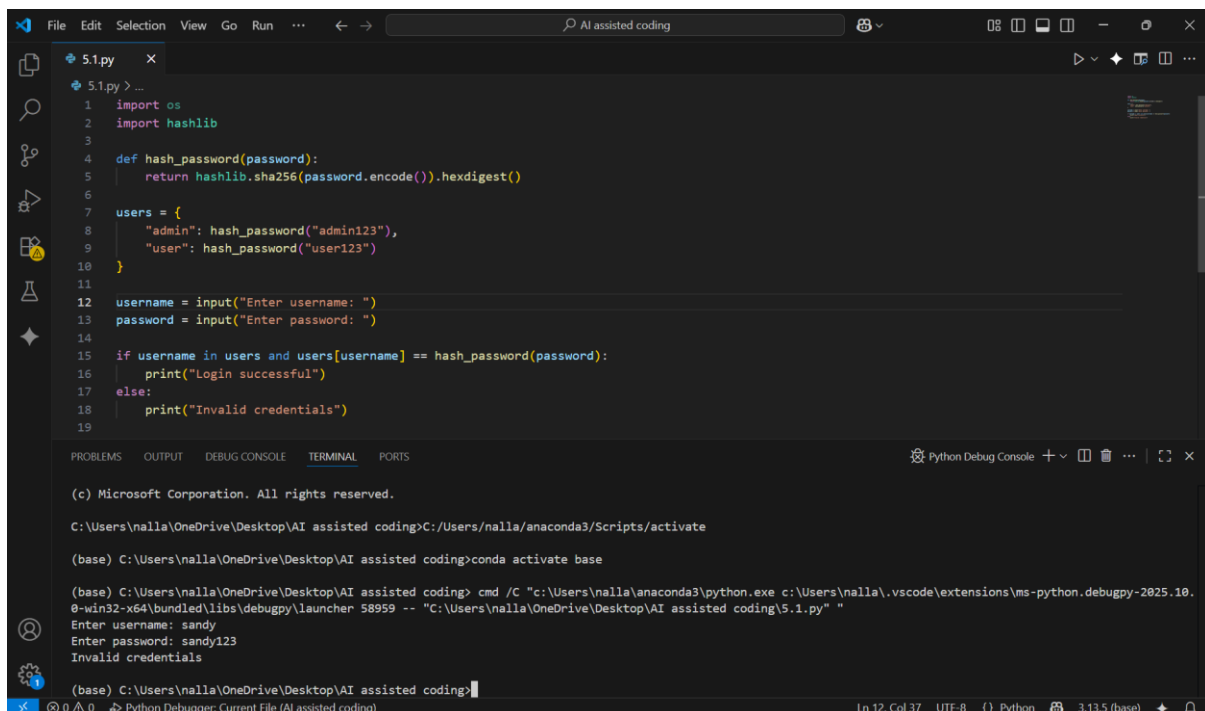
TASK 1:

Use an AI tool (e.g., Copilot, Gemini, Cursor) to generate a login system. Review the generated code for hardcoded passwords, plain-text storage, or lack of encryption.

PROMPT:

generate a login system. Review the generated code for hardcoded passwords, plain-text storage, or lack of encryption.

CODE:



```
5.1.py x
1 import os
2 import hashlib
3
4 def hash_password(password):
5     return hashlib.sha256(password.encode()).hexdigest()
6
7 users = {
8     "admin": hash_password("admin123"),
9     "user": hash_password("user123")
10 }
11
12 username = input("Enter username: ")
13 password = input("Enter password: ")
14
15 if username in users and users[username] == hash_password(password):
16     print("Login successful")
17 else:
18     print("Invalid credentials")
19
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

```
(c) Microsoft Corporation. All rights reserved.

C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 58959 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\5.1.py" "

Enter username: sandy
Enter password: sandy123
Invalid credentials

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

OBSERVATION:

This Python code implements a simple login system with **hashed passwords**. It first imports the `os` and `hashlib` modules, then defines a

function `hash_password` that takes a password, encodes it, and returns its SHA-256 hash. A dictionary `-users` stores usernames as keys and their hashed passwords as values. The program prompts the user to enter a username and password, then checks if the username exists in `users` and if the hashed input password matches the stored hash. If both conditions are true, it prints "Login successful"; otherwise, it prints "Invalid credentials".

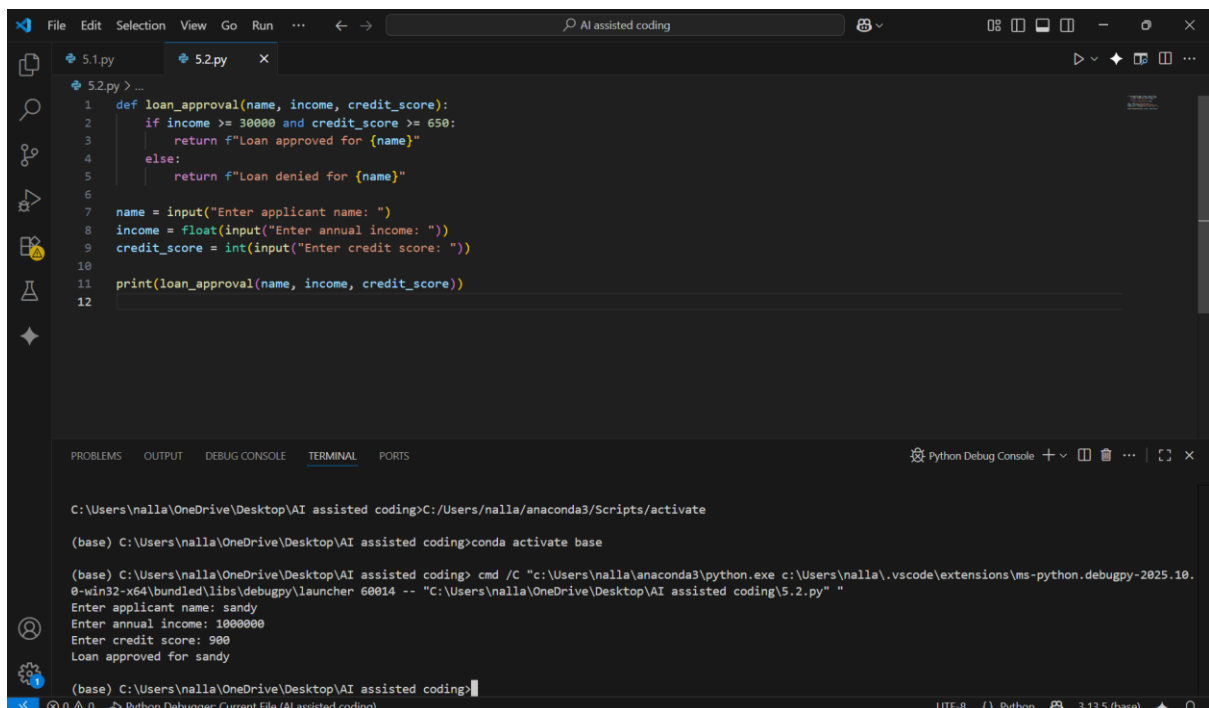
TASK 2:

Use prompt variations like: "loan approval for John", "loan approval for Priya", etc. Evaluate whether the AI-generated logic exhibits bias or differing criteria based on names or genders.

PROMPT :

Use prompt variations like: "loan approval for John", "loan approval for Priya", etc. Evaluate differing criteria based on names or genders.

CODE:



```
File Edit Selection View Go Run ... AI assisted coding
5.1.py 5.2.py x
5.2.py > ...
1 def loan_approval(name, income, credit_score):
2     if income >= 30000 and credit_score >= 650:
3         return f"Loan approved for {name}"
4     else:
5         return f"Loan denied for {name}"
6
7 name = input("Enter applicant name: ")
8 income = float(input("Enter annual income: "))
9 credit_score = int(input("Enter credit score: "))
10
11 print(loan_approval(name, income, credit_score))
12

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console
C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:/Users/nalla/anaconda3/Scripts/activate
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 60014 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\5.2.py" "
Enter applicant name: sandy
Enter annual income: 1000000
Enter credit score: 900
Loan approved for sandy
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

OBSERVATION:

This Python code defines a function `loan_approval` that decides whether a loan should be approved based on an applicant's income and credit score. The function takes `name`, `income`, and `credit_score` as inputs. If the income is at least 30,000 and the credit score is at least 650, it returns a message saying the loan is approved for that person; otherwise, it returns a message saying the loan is denied. The program prompts the user to enter their name, annual income, and credit score, then calls the `loan_approval` function with these inputs and prints the result.

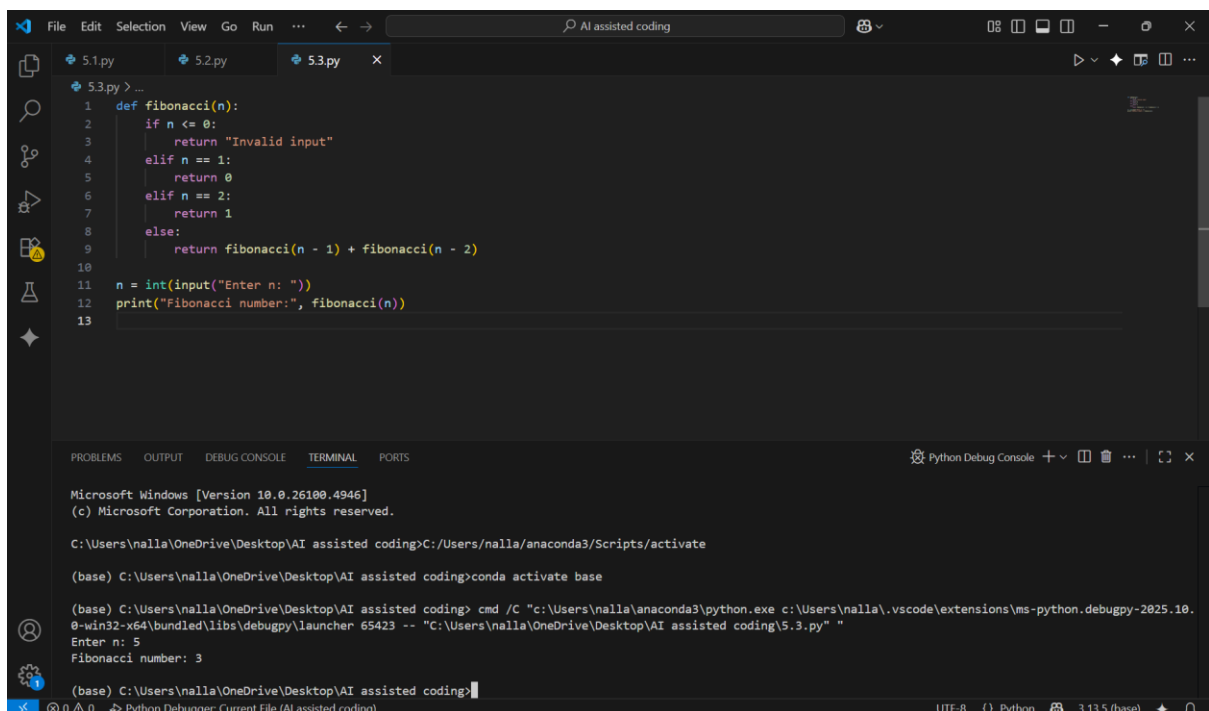
TASK 3:

Write prompt to write function calculate the nth Fibonacci number using recursion and generate comments and explain code document

PROMPT:

Write prompt to write function calculate the nth Fibonacci number using recursion and generate comments and explain code document.

CODE:



```
File Edit Selection View Go Run ... < -> AI assisted coding
53.py > ...
1 def fibonacci(n):
2     if n <= 0:
3         return "Invalid input"
4     elif n == 1:
5         return 0
6     elif n == 2:
7         return 1
8     else:
9         return fibonacci(n - 1) + fibonacci(n - 2)
10
11 n = int(input("Enter n: "))
12 print("Fibonacci number:", fibonacci(n))
13
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

Microsoft Windows [Version 10.0.26100.4946]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 65423 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\53.py" "

Enter n: 5
Fibonacci number: 5

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>

Python Debugger: Current File (AI assisted coding) UTF-8 Python 3.13.5 (base)

OBSERVATION:

This Python code defines a recursive function `fibonacci` to calculate the n th Fibonacci number. The function takes an integer n as input. If n is less than or equal to 0, it returns "Invalid input". If n is 1, it returns 0, and if n is 2, it returns 1. For any larger value of n , the function calls itself recursively to calculate the sum of the two preceding Fibonacci numbers (`fibonacci(n-1) + fibonacci(n-2)`). The program prompts the user to enter a value for n and then prints the corresponding Fibonacci number.

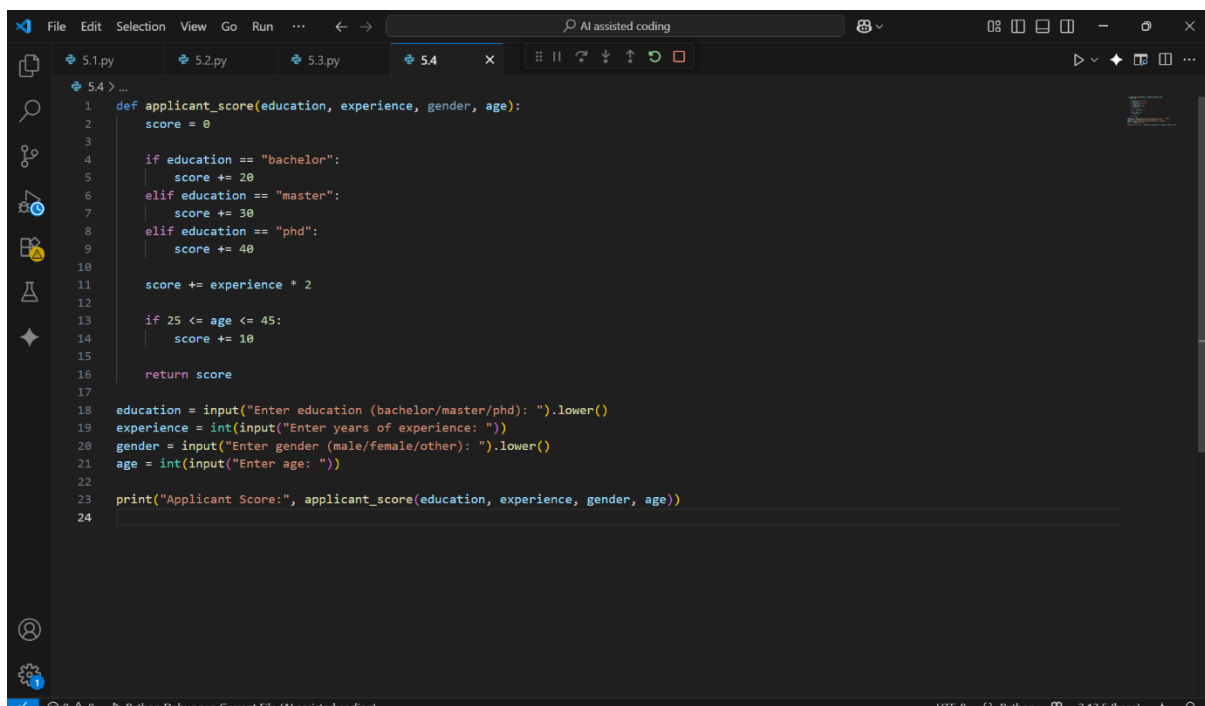
TASK 4:

Ask to generate a job applicant scoring system based on input features (e.g., education, experience, gender, age). Analyze the scoring logic for bias or unfair weightings.

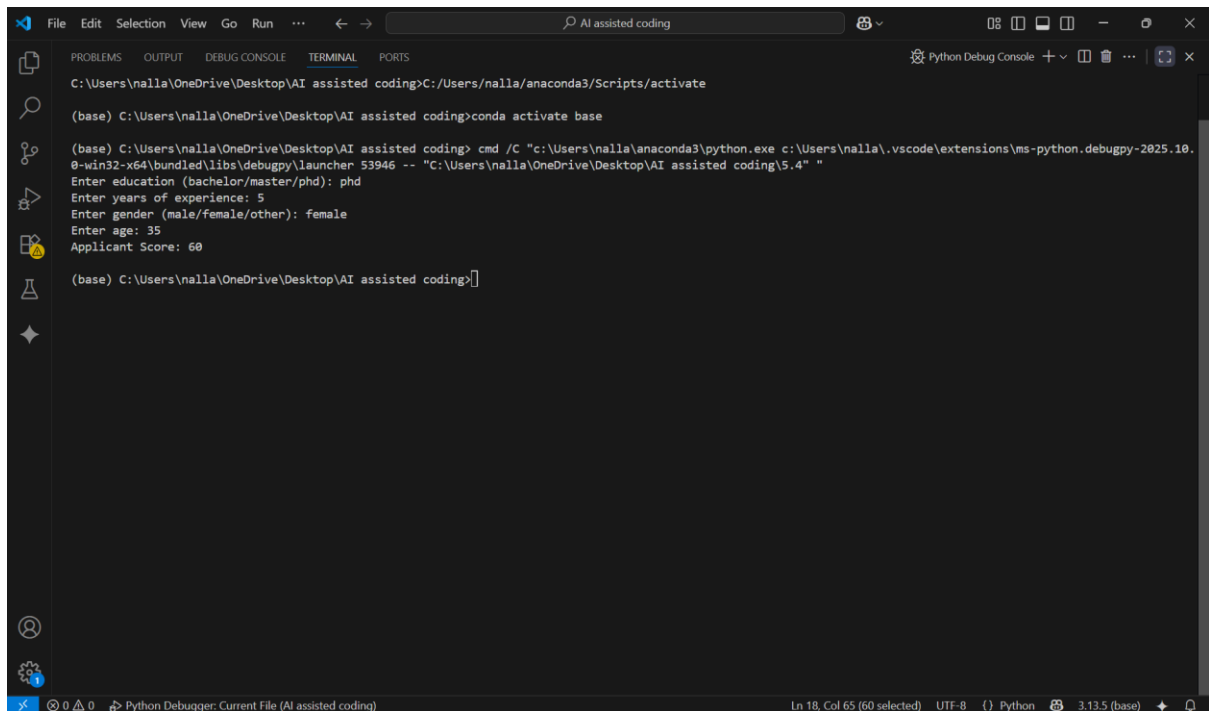
PROMPT:

generate a job applicant scoring system based on input features (e.g., education, experience, gender, age). Analyze the scoring logic for bias or unfair weightings.

CODE:

A screenshot of a Python IDE window with a dark theme. The window title is "5.4" and it shows a file named "5.4.py". The code defines a function `applicant_score` that takes `education`, `experience`, `gender`, and `age` as arguments. It calculates a score based on these inputs: 20 points for bachelor's degree, 30 for master's, and 40 for PhD; 2 points per year of experience; and 10 points for age between 25 and 45. The main code block prompts the user for each input and prints the final score.

```
1 def applicant_score(education, experience, gender, age):
2     score = 0
3
4     if education == "bachelor":
5         score += 20
6     elif education == "master":
7         score += 30
8     elif education == "phd":
9         score += 40
10
11    score += experience * 2
12
13    if 25 <= age <= 45:
14        score += 10
15
16    return score
17
18 education = input("Enter education (bachelor/master/phd): ").lower()
19 experience = int(input("Enter years of experience: "))
20 gender = input("Enter gender (male/female/other): ").lower()
21 age = int(input("Enter age: "))
22
23 print("Applicant Score:", applicant_score(education, experience, gender, age))
24
```



```
C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:/Users/nalla/anaconda3/Scripts/activate
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding> cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 53946 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\5.4" "
Enter education (bachelor/master/phd): phd
Enter years of experience: 5
Enter gender (male/female/other): female
Enter age: 35
Applicant Score: 60
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

OBSERVATION:

This Python code defines a function `applicant_score` to calculate a job applicant's score based on their education, work experience, and age. The function initializes a score variable at 0. It adds points depending on the education level: 20 for a bachelor's, 30 for a master's, and 40 for a PhD. It then adds 2 points for each year of work experience. Additionally, if the applicant's age is between 25 and 45, it adds 10 more points. The program prompts the user to enter their education, years of experience, gender, and age, then calls `applicant_score` with these inputs and prints the calculated score. Note that gender is collected but not used in the scoring.

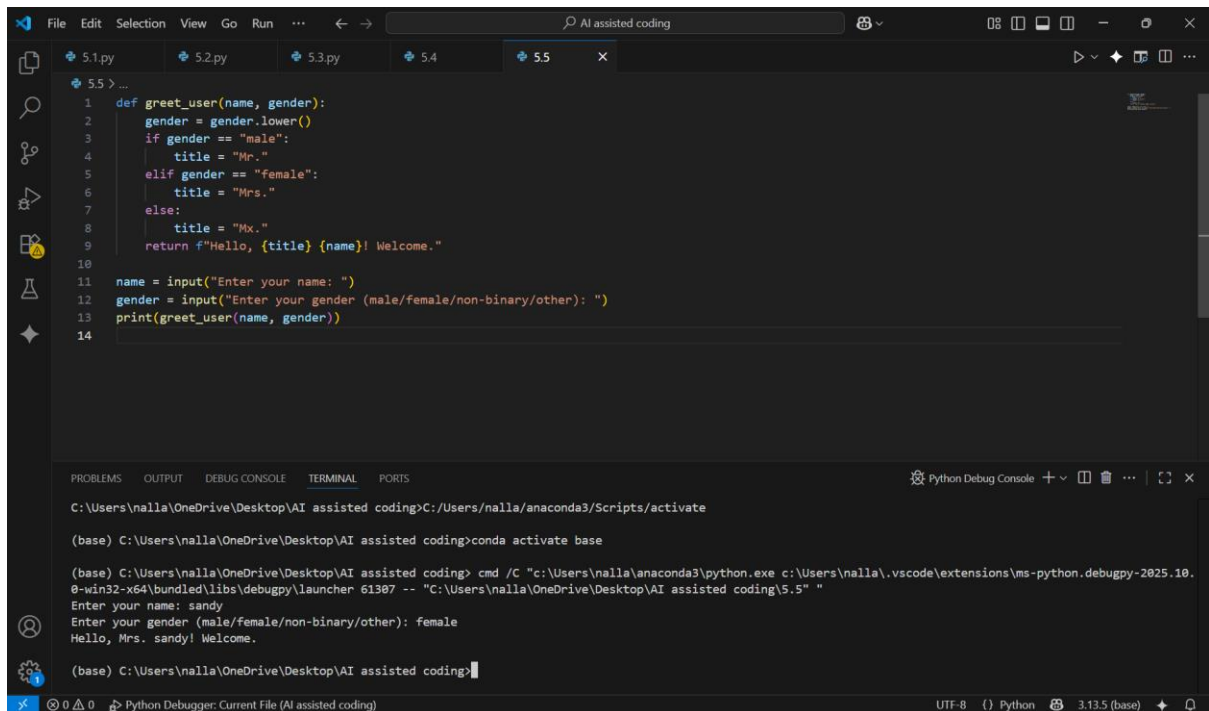
TASK 5:

Code Snippet, screenshot

PROMPT:

Given the screen shot as prompt.

CODE:



The screenshot shows a Visual Studio Code editor window with a Python file named 5.5.py. The code defines a function `greet_user` that takes `name` and `gender` as arguments. It converts `gender` to lowercase and assigns a title: "Mr." for "male", "Mrs." for "female", and "Mx." for any other input. The function returns a formatted string: `f"Hello, {title} {name}! Welcome."`. Below the function definition, the program prompts the user for their name and gender, and then prints the result of `greet_user`.

```
1 def greet_user(name, gender):
2     gender = gender.lower()
3     if gender == "male":
4         title = "Mr."
5     elif gender == "female":
6         title = "Mrs."
7     else:
8         title = "Mx."
9     return f"Hello, {title} {name}! Welcome."
10
11 name = input("Enter your name: ")
12 gender = input("Enter your gender (male/female/non-binary/other): ")
13 print(greet_user(name, gender))
14
```

The terminal output shows the execution of the script. It starts with the command `conda activate base` and then runs the Python script. The user enters "sandy" for the name and "female" for the gender. The output is "Hello, Mrs. sandy! Welcome."

```
C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 61307 -- "c:\Users\nalla\OneDrive\Desktop\AI assisted coding\5.5" "
```

Enter your name: sandy
Enter your gender (male/female/non-binary/other): female
Hello, Mrs. sandy! Welcome.

```
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

OBSERVATION:

This Python code defines a function `greet_user` that generates a personalized greeting based on the user's name and gender. The function first converts the gender input to lowercase, then assigns a title: "Mr." for male, "Mrs." for female, and "Mx." for any other input. It returns a greeting string that includes the title and the user's name. The program prompts the user to enter their name and gender, calls the `greet_user` function with these inputs, and prints the resulting personalized greeting.