

# AI ASSISTED CODING

## LAB ASSIGNMENT-5.4

### Task Description #1:

- Prompt GitHub Copilot to generate a Python script that collects user data (e.g., name, age, email). Then, ask Copilot to add comments on how to anonymize or protect this data.

PROMPT : "Generate a Python script that collects user name, age, and email.

Add comments on how to anonymize or protect this data."""

```
Lab-5.4.py > ...
1  #Task 1:
2  # Collect user data
3  name = input("Enter your name: ")
4  age = input("Enter your age: ")
5  email = input("Enter your email: ")
6
7  print(f"Data collected - \n Name: {name},\n Age: {age},\n Email: {email}")
8  # Task 2:
```

The screenshot shows a code editor with a Python file named `Lab-5.4.py`. The code is as follows:

```
Lab-5.4.py > ...
1  #Task 1:
2  # Collect user data
3  name = input("Enter your name: ")
4  age = input("Enter your age: ")
5  email = input("Enter your email: ")
6
7  print(f"Data collected - \n Name: {name},\n Age: {age},\n Email: {email}")
8  # Task 2:
```

Below the code editor is a terminal window showing the execution of the script and its output. The terminal shows:

```
PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python.exe "c:/Users/saiku/OneDrive/Desktop/AI ASSISTANT CODING/Lab-5.4.py"
Enter your name: ram
Enter your age: 20
Enter your email: ram@gmail.com
User data collected securely.
PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING>
```

## Task Description #2:

- Ask Copilot to generate a Python function for sentiment analysis.

Then prompt Copilot to identify and handle potential biases in the data.

Prompt: Generate a Python function for sentiment analysis and include comments to handle or reduce data bias.

```
Lab-5.4.py > ...
1 print("\n--- Task 2: Sentiment Analysis with Bias Awareness ---")
2
3 def analyze_sentiment(text):
4     positive_words = ["good", "happy", "great", "excellent"]
5     negative_words = ["bad", "sad", "terrible", "poor"]
6
7     text = text.lower()
8     score = 0
9
10    for word in positive_words:
11        if word in text:
12            score += 1
13
14    for word in negative_words:
15        if word in text:
16            score -= 1
17
18    # Ethical Notes:
19    # - Dataset should be balanced and diverse
20    # - Remove offensive or culturally biased terms
21    # - Avoid making decisions using limited keywords
22
23    if score > 0:
24        return "Positive"
25
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

Python + □

```
PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python.exe "c:/Users/saiku/OneDrive\Desktop\AI ASSISTANT CODING\Lab-5.4.py"
--- Task 2: Sentiment Analysis with Bias Awareness ---
Enter a sentence for sentiment analysis: saikumar
Sentiment: Neutral
PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING>
○ PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> []
```

## Task Description #3:

- Use Copilot to write a Python program that recommends products based on user history. Ask it to follow ethical guidelines like transparency and fairness.

Prompt: Write a Python program that recommends products based on user history and follows ethical guidelines like transparency and fairness.

```

Lab-5.4.py > ...
1  print("\n--- Task 3: Ethical Product Recommendation ---")
2
3  def recommend_products(user_categories, products):
4      recommendations = []
5
6      for product in products:
7          if product["category"] in user_categories:
8              recommendations.append(product)
9
10     # Ethical Guidelines:
11     # - Avoid favoritism toward sponsored products
12     # - Give equal visibility to all sellers
13     # - Clearly explain recommendation logic to users
14
15     return recommendations
16
17 user_history = ["electronics", "books"]
18
19 product_list = [
20     {"name": "Laptop", "category": "electronics"},
21     {"name": "Story Book", "category": "books"},
22     {"name": "Shoes", "category": "fashion"},
23 ]
24

```

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PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python SISTANT CODING/Lab-5.4.py"

- Task 3: Ethical Product Recommendation ---
 

Recommendations based on your interests:

  - Laptop
  - Story Book

Reason: Products were recommended based on your browsing categories.

○ PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> █

## Task Description #4:

- Prompt Copilot to generate logging functionality in a Python web application. Then, ask it to ensure the logs do not record sensitive information.

Prompt: Generate logging functionality for a Python web application and ensure logs do not record sensitive information.



```
Lab-5.4.py > ...
1  print("\n--- Task 4: Ethical Logging ---")
2
3  import logging
4
5  logging.basicConfig(filename="app.log", level=logging.INFO)
6
7  def login_user(username, password):
8      # Never log passwords, emails, or tokens
9
10     logging.info(f"Login attempt by user: {username}")
11
12     if password == "admin123":
13         logging.info("Login successful")
14         print("Login Successful")
15         return True
16     else:
17         logging.warning("Login failed")
18         print("Login Failed")
19         return False
20
21 login_user("test_user", "1234")
22
23 # Ethical Logging Rules:
24 # - Do not log personal identifiers
```

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PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python.exe "c:/Users/saiku/OneDrive/Desktop/AI ASSISTANT CODING/Lab-5.4.py"

--- Task 4: Ethical Logging ---  
Login Failed

PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING>

## Task Description #5:

- Ask Copilot to generate a machine learning model. Then, prompt it to add documentation on how to use the model responsibly (e.g., explainability, accuracy limits).

Prompt: Generate a machine learning model and add documentation on responsible usage, explainability, and limitations.

```
Lab-5.4.py 4, v  ~
Lab-5.4.py > ...
1  from sklearn.linear_model import LinearRegression
2  import numpy as np
3
4  print("\n--- Task 5: Responsible Machine Learning Model ---")
5
6
7  # Sample training data (very small dataset)
8  X = np.array([[1], [2], [3], [4]])
9  y = np.array([100, 200, 300, 400])
10
11 model = LinearRegression()
12 model.fit(X, y)
13
14 prediction = model.predict([[5]])
15 print("Predicted Output:", prediction)
16
17 """
18 Responsible AI Usage Notes:
19 - This model is trained on limited sample data
20 - Predictions may not generalize to real-world cases
21 - Do NOT use for medical, legal, or financial decisions
22 - Always evaluate accuracy and bias before deployment
23 - Provide explainable results to end users
24 """
PROBLEMS 🔍 OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS Python + v
PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python.exe "c:/Users/saiku/One
SISTANT CODING/Lab-5.4.py"
> Traceback (most recent call last):
  File "c:/Users/saiku/OneDrive/Desktop/AI ASSISTANT CODING/Lab-5.4.py", line 1, in <module>
    from sklearn.linear_model import LinearRegression
ModuleNotFoundError: No module named 'sklearn'
> PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING>
```