

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:
```

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS Python + - [ ] [X] ... [ ] [X]
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>

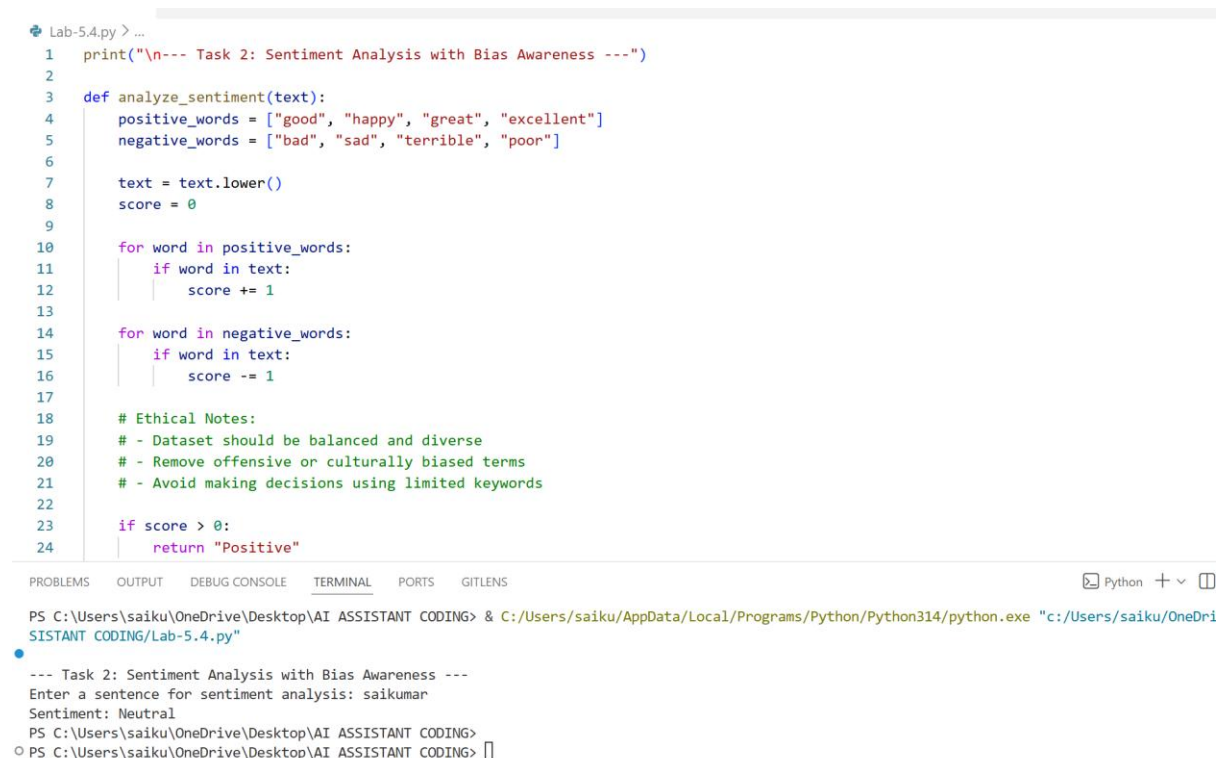
```

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"
```

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/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>

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
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

PS C:\Users\saiku\OneDrive\Desktop\AI ASSISTANT CODING> & C:/Users/saiku/AppData/Local/Programs/Python/Python314/python SINSTANT 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
```

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 2, 0
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 2 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> █
```