

Assignment - 5.4
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Prompt to Copilot

Generate a Python script that collects user name, age, and email. Add comments on how to anonymize or protect this data.

The screenshot shows a code editor interface with a dark theme. On the left is the code editor pane displaying a Python script. On the right are several tabs and toolbars.

```
1 import hashlib
2
3 # Collect user data
4 name = input("Enter your name: ")
5 age = input("Enter your age: ")
6 email = input("Enter your email: ")
7
8 # Hash email to anonymize personal identity
9 hashed_email = hashlib.sha256(email.encode()).hexdigest()
10
11 # NOTE: Never store raw personal data in plain text.
12 # Use hashing or encryption before storing in databases.
13
14 user_data = {
15     "name": name,
16     "age": age,
17     "email_hash": hashed_email
18 }
19
20 print("Stored User Data:", user_data)
21
```

Below the code editor are several tabs: PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The TERMINAL tab is active, showing the command line output:

```
/usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
● (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Enter your name: ramcharan
Enter your age: 21
Enter your email: 3423@gmail.com
Stored User Data: {'name': 'ramcharan', 'age': '21', 'email_hash': 'f3bc4be2e24ca721f6cff8e6b8aca3110604f3ce7c27c2ce7719a2e29bcae74f'}
```

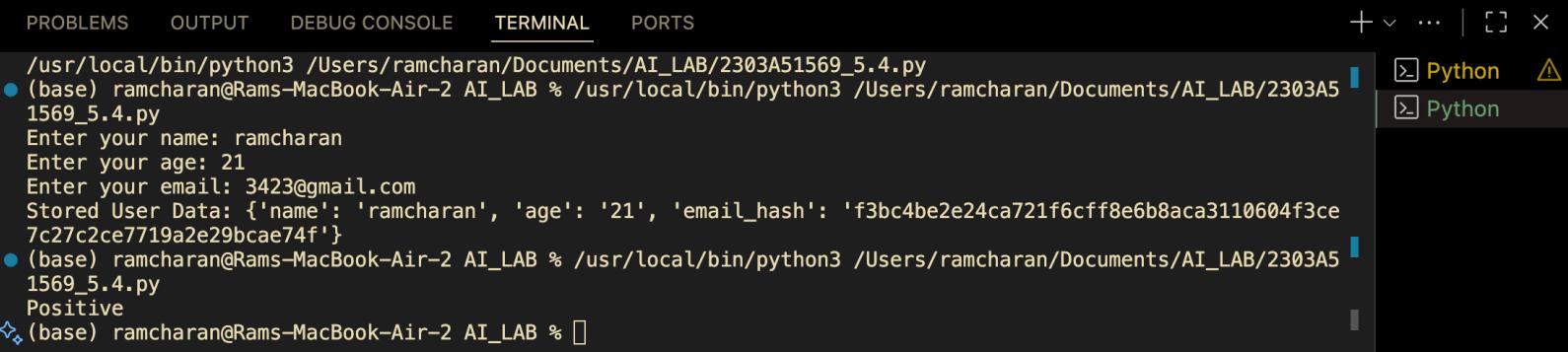
On the far right, there are two Python-related dropdown menus:

- Python (highlighted)
- Python

Prompt to Copilot

Generate a Python function for sentiment analysis and handle potential bias in data.

```
1 def analyze_sentiment(text):
2     # Simple word-based sentiment check (demo purpose)
3     positive_words = ["good", "happy", "great", "excellent"]
4     negative_words = ["bad", "sad", "terrible", "poor"]
5
6     text = text.lower()
7
8     score = 0
9     for word in positive_words:
10        if word in text:
11            score += 1
12        for word in negative_words:
13            if word in text:
14                score -= 1
15
16    # Ethical consideration:
17    # Ensure training data is diverse and balanced
18    # Remove offensive or culturally biased terms
19    # Avoid making decisions only based on limited keywords
20
21    if score > 0:
```



The screenshot shows a terminal window with the following content:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + × ... | [] ×
/usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
● (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Enter your name: ramcharan
Enter your age: 21
Enter your email: 3423@gmail.com
Stored User Data: {'name': 'ramcharan', 'age': '21', 'email_hash': 'f3bc4be2e24ca721f6cff8e6b8aca3110604f3ce7c27c2ce7719a2e29bcae74f'}
● (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Positive
✧ (base) ramcharan@Rams-MacBook-Air-2 AI_LAB %
```

The terminal shows the execution of the Python script, which prompts for user information and prints a positive sentiment analysis result. The interface includes tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is selected), and PORTS, along with standard window control buttons.

Prompt to Copilot

Generate product recommendation code that follows fairness and transparency.

```
1 def recommend_products(user_history, all_products):
2     recommendations = []
3
4     for product in all_products:
5         if product["category"] in user_history:
6             recommendations.append(product)
7
8     # Ethical Guidelines:
9     # - Do not promote only paid or sponsored products
10    # - Ensure equal visibility to small sellers
11    # - Explain why items are recommended
12
13    return recommendations
14
15
16 user_history = ["electronics", "books"]
17
18 products = [
19     {"name": "Laptop", "category": "electronics"},
20     {"name": "Novel", "category": "books"},
21     {"name": "Shoes", "category": "fashion"}
```

The screenshot shows a code editor interface with a dark theme. At the top, there are tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. The TERMINAL tab is active, displaying the following log:

```
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5_1569_5.4.py
Enter your name: ramcharan
Enter your age: 21
Enter your email: 3423@gmail.com
Stored User Data: {'name': 'ramcharan', 'age': '21', 'email_hash': 'f3bc4be2e24ca721f6cff8e6b8aca3110604f3ce7c27c2ce7719a2e29bcae74f'}
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5_1569_5.4.py
Positive
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5_1569_5.4.py
Recommended Products: [{"name": "Laptop", "category": "electronics"}, {"name": "Novel", "category": "books"}]
```

On the right side of the terminal, there is a sidebar with two entries under the heading "Python":

- Python (yellow)
- Python (green)

Prompt to Copilot

Generate logging functionality that avoids sensitive data.

```
1 import logging
2
3 logging.basicConfig(filename="app.log", level=logging.INFO)
4
5 def login_user(username, password):
6     # DO NOT log passwords or emails
7
8     logging.info(f"Login attempt for user: {username}")
9
10    # Simulated authentication
11    if password == "admin123":
12        logging.info("Login successful")
13        return True
14    else:
15        logging.warning("Login failed")
16        return False
17
18
19 login_user("|_user", "test123")
20
21 # Ethical Logging:
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
7c27c2ce7719a2e29bcae74f'}

- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
Positive
- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
Recommended Products: [{'name': 'Laptop', 'category': 'electronics'}, {'name': 'Novel', 'category': 'books'}]
- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py

Python

Python

Prompt to Copilot

Generate ML model code and add responsible usage documentation.

```
1  from sklearn.linear_model import LinearRegression
2  import numpy as np
3
4  # Sample training data
5  X = np.array([[1], [2], [3], [4]])
6  y = np.array([100, 200, 300, 400])
7
8  model = LinearRegression()
9  model.fit(X, y)
10
11 prediction = model.predict([[5]])
12 print("Predicted value:", prediction)
13
14 """
15 Responsible AI Guidelines:
16 - This model is trained on very small data; predictions may be inaccurate.
17 - Do not use for financial or medical decisions.
18 - Always test with real-world datasets.
19 - Monitor model bias and performance regularly.
20 - Provide explanation of predictions to users when possible.
21 """
```

The screenshot shows a code editor interface with a dark theme. At the top, there are tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, and PORTS. Below these tabs is a terminal window displaying the execution of a Python script named '1569_5.4.py'. The terminal output includes several lines of text indicating the model's training data, its prediction for an input of 5 (outputting [500]), and a block of text titled 'Responsible AI Guidelines' with five bullet points. To the right of the terminal, there is a sidebar with two entries under the heading 'Python': a green square icon followed by 'Python' and a grey square icon followed by 'Python'.

```
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
Positive
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
Recommended Products: [{'name': 'Laptop', 'category': 'electronics'}, {'name': 'Novel', 'category': 'books'}]
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
(base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A5
1569_5.4.py
Predicted value: [500.]
```