

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.

```
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
```

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 %

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:
```

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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 %

Python Python

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"}
22 ]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + - ... | [] x

- (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 % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Recommended Products: [{'name': 'Laptop', 'category': 'electronics'}, {'name': 'Novel', 'category': 'books'}]

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/2303A51569_5.4.py
7c27c2ce7719a2e29bcae74f'}
● (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 % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_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/2303A51569_5.4.py
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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 """
```

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- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Positive
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Recommended Products: [{'name': 'Laptop', 'category': 'electronics'}, {'name': 'Novel', 'category': 'books'}]
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- (base) ramcharan@Rams-MacBook-Air-2 AI_LAB % /usr/local/bin/python3 /Users/ramcharan/Documents/AI_LAB/2303A51569_5.4.py
Predicted value: [500.]