AI-ASSITED CODING

ASSIGNMENT 5.3

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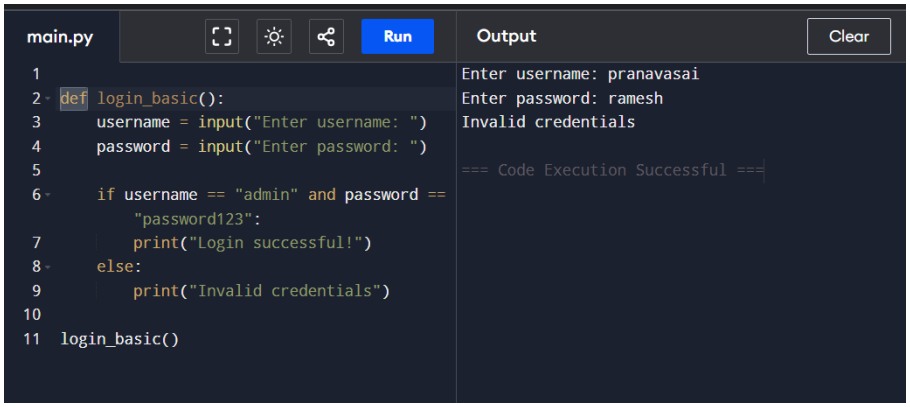
BATCH-27

Ethical and Secure Use of AI-Generated Code

Task 1: Privacy and Data Security in AI-Generated Code

PROMPT: GENERATE AN LOGIN CODE IN PYTHON

CODE AND OUTPUT:



Security Issues Identified:
- Credentials are hardcoded
- Password is stored and compared in plain text
- No input validation or hashing

PROMPT: GENERATE A SECURE CODE

CODE AND OUTPUT:

```python
import getpass, hashlib

stored_hash = hashlib.sha256('securePass'
    .encode()).hexdigest()
user_pass = getpass.getpass('Password: ')

if hashlib.sha256(user_pass.encode
    ()).hexdigest() == stored_hash:
    print('Login successful')
else:
    print('Login failed')
```

```
Password:
Login failed

=== Code Execution Successful ===
```

Improvements:
- Removed hardcoded credentials
- Used password hashing
- Used secure password input

Task 2: Bias Detection in AI-Generated Decision Systems

PROMPT:

Generate A Loan Approval Code (Biased Example):

CODE AND OUTPUT:

main.py Run Output Clear

```python
applicant_gender = "male"
income = 60000

if applicant_gender == "male" and income >
    50000:
    approve = True
else:
    approve = False

print("Loan Approved:", approve)
```

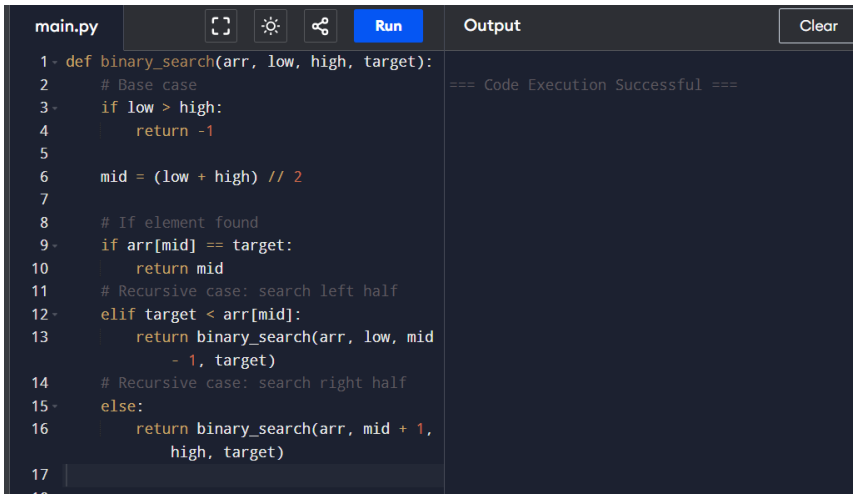
```
Loan Approved: True

=== Code Execution Successful ===
```

Bias Identified:
- Approval depends on gender
- Gender is irrelevant to loan eligibility

Fairness Discussion:
Such logic unfairly disadvantages applicants based on gender.

Mitigation Strategies:
- Remove gender from decision logic
- Use only financial criteria
- Regular bias audits



Task 3: Transparency and Explainability (Recursive Binary Search)

PROMPT: Generate a Recursive Binary Search Code:

Code and Output:

Explanation:
- Base case stops recursion when search range is invalid
- Recursive case reduces problem size each call
Code is beginner-friendly, well-commented, and logically clear.

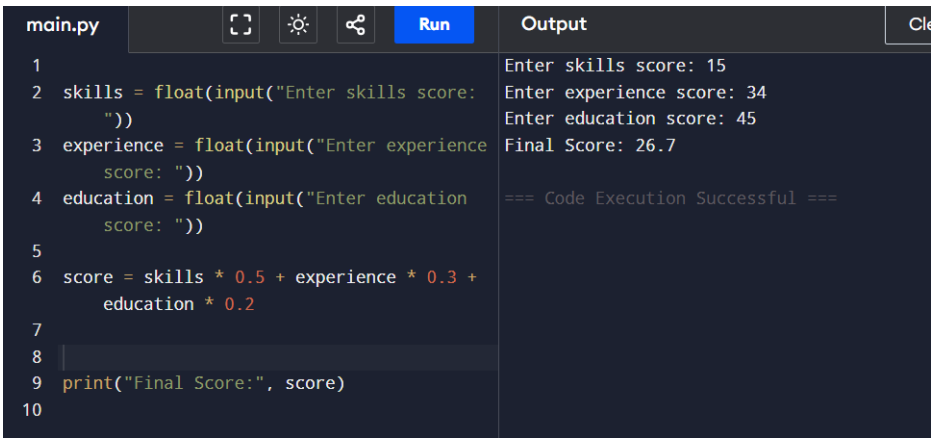
Task 4: Ethical Evaluation of AI-Based Scoring Systems

PROMPT:Generate a Scoring Code:

CODE AND OUTPUT:

Bias Analysis:
- No gender or name used
- Logic is objective and skill-based

Ethical Evaluation:
Scoring is fair as it relies on job-relevant attributes.



Task 5: Inclusiveness and Ethical Variable Design

PROMPT: generate a code for bonus based on if gender is male

CODE:

```python
if gender == 'male':
    bonus = 1000
else:
    bonus = 500
```

Issues:
- Gender-based assumptions
- Non-inclusive logic

Revised Inclusive Code:

PROMPT: GENERATE A CODE BASED ON PERFORMANCE

CODE AND OUPUT:

```python
# Input performance rating
performance_rating = float(input("Enter performance rating (1 to 5): "))

# Bonus calculation based on performance
if performance_rating >= 4:
    bonus = 1000
else:
    bonus = 500

# Output
print("Bonus Amount:", bonus)
```

```
Enter performance rating (1 to 5): 4
Bonus Amount: 1000

=== Code Execution Successful ===
```

Improvements:
- Removed gender dependency
- Used performance-based logic