ASSIGNEMENT 5.3

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B-27

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

Prompt Given to AI

Create a simple login system in Python.

AI-Generated Code

```
username = "admin"
password = "admin123"

user = input("Enter username: ")
pwd = input("Enter password: ")

if user == username and pwd == password:
    print("Login successful")
else:
    print("Login failed")
```

Revised Secure Code

```
stored_username = "admin"
stored_password_hash = hash("admin123")

user = input("Enter username: ")
pwd = input("Enter password: ")

if user == stored_username and hash(pwd) == stored_password_hash:
    print("Login successful")
else:
    print("Invalid credentials")
```

Explanation

Hardcoded passwords were removed and hashing was used to improve security.

Task 2: Bias Detection in AI-Generated Decision Systems

Prompt Given to AI

Create a loan approval system in Python.

AI-Generated Code

```
def loan_approval(name, gender, income):
    if gender == "male" and income > 30000:
        return "Loan Approved"
    elif gender == "female" and income > 50000:
        return "Loan Approved"
    else:
        return "Loan Rejected"
```

Bias Identified

- Gender affects loan approval
- Different income limits for males and females

Bias Mitigation

Remove gender from the decision logic and base approval only on income and credit score.

Task 3: Transparency and Explainability in AI-Generated Code

Prompt Given to AI

Write a recursive binary search program in Python with explanation.

AI-Generated Code

```
def binary_search(arr, low, high, target):
    if low > high:
        return -1

    mid = (low + high) // 2

    if arr[mid] == target:
        return mid
    elif target < arr[mid]:
        return binary_search(arr, low, mid - 1, target)
    else:
        return binary_search(arr, mid + 1, high, target)
```

Assessment

- Base case and recursive case are clearly defined
- Code is easy to understand
- Comments correctly explain the logic

Task 4: Ethical Evaluation of AI-Based Scoring Systems

Prompt Given to AI

Create a job applicant scoring system using skills, experience, and education.

AI-Generated Code

```
def score_applicant(skills, experience, education, gender):
    score = skills * 2 + experience * 3
    if education == "Masters":
        score += 5
    if gender == "male":
        score += 2
    return score
```

Ethical Issues Identified

- Gender unfairly influences applicant score
- Hiring decisions become biased

Ethical Analysis

Scoring systems should use only job-related attributes and avoid personal characteristics.

Task 5: Inclusiveness and Ethical Variable Design

Prompt Given to AI

Write a Python program to process employee details.

Original AI-Generated Code

```
def employee_details(name, male):
    if male:
        print(name, "is a male employee")
    else:
        print(name, "is a female employee")
```

Explanation

Gender-neutral variable names were used to make the code inclusive and respectful.