Program: II - B. Tech (CS& AI)
Faculty: Dr. Brij Kishor Tiwari

Department: Computer Science and AI Semester: I
AI Assisted Coding - Lab Test 1
NAME:SHAIK FAHEEM
HTNO: 2503A51L39

Question 1

Task 1: Write a prompt that unintentionally leads to biased or harmful AI output (e.g., stereotype-based questions). Run it once to observe the risk

Prompt: Describe the most likely career path and personality traits of a person named John (a man from the United States) and a person named Priya (a woman from India). Be specific and realistic

Code

```python
def biased_response():
    return """
Biased Response:
John (a man from the United States) is likely to be ambitious, outspoken, and career-driven.
He might pursue a career in technology, business, or finance, and value independence.

Priya (a woman from India) is likely to be caring, family-oriented, and hardworking.
She might work as a teacher, doctor, or homemaker, and value tradition.
"""

def neutral_response():
    return """
Neutral Response:
Career paths and personality traits depend on individual interests, education, and opportunities.
For example:
- John could be a teacher, engineer, artist, or entrepreneur depending on his skills and choices.
- Priya could be a scientist, writer, manager, or social worker based on her goals and environment.

Gender or nationality alone cannot determine career or personality — individual context matters most.
"""

if __name__ == "__main__":
    print("---- Biased Prompt Output ----")
    print(biased_response())

    print("\n---- Neutral Prompt Output ----")
    print(neutral_response())
```

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Output

```
---- Biased Prompt Output ----

Biased Response:
John (a man from the United States) is likely to be ambitious, outspoken, and career-driven.
He might pursue a career in technology, business, or finance, and value independence.

Priya (a woman from India) is likely to be caring, family-oriented, and hardworking.
She might work as a teacher, doctor, or homemaker, and value tradition.
```

Observation:

The biased response shows the risk of reinforcing gender and cultural stereotypes. It assumes John will be ambitious and career-driven, while Priya will be caring and family-oriented.Such assumptions can misrepresent individuals and limit how they are perceived.

Task 2: Rewrite the prompt with ethical safeguards (neutral language, inclusivity, fairness).Compare both results and explain how responsible prompt design reduces harm

Prompt: Describe the most likely career path and personality traits of a man named John (from the United States) and a woman named Priya (from India)

Rewritten ethical prompt (neutral, inclusive, and fair)

"Describe possible career paths and personality traits for two individuals, John and Priya, without assuming anything based on their gender, nationality, or cultural background. Focus only on general personality factors and professional interests."

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Biased Code

C: > Users > Shaik Faheem > Desktop > 🐍 aiii.py > ...

```python
# Biased profiles based on name and gender
biased_profiles = {
    "John": {
        "country": "USA",
        "personality": "confident, dominant, logical",
        "career": "CEO, engineer, or soldier"
    },
    "Priya": {
        "country": "India",
        "personality": "nurturing, emotional, cooperative",
        "career": "teacher, nurse, or receptionist"
    }
}

def describe_biased_person(name):
    profile = biased_profiles.get(name)
    if profile:
        print(f"Name: {name}")
        print(f"Country: {profile['country']}")
        print(f"Personality Traits: {profile['personality']}")
        print(f"Most Likely Career Path: {profile['career']}")
    else:
        print(f"No data available for {name}.")

# Example usage
describe_biased_person("John")
print()
describe_biased_person("Priya")
```

Output

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```
Name: John
Country: USA
Personality Traits: confident, dominant, logical
Most Likely Career Path: CEO, engineer, or soldier

Name: Priya
Country: India
Personality Traits: nurturing, emotional, cooperative
Most Likely Career Path: teacher, nurse, or receptionist
```

Neutral code

```python
asisteddd > 🐍 2.1.py > ...
1    # Define personality traits and career paths without gender or nationality
2  ∨ profiles = {
3  ∨     "John": {
4          "personality": ["analytical", "creative", "organized"],
5          "career_interests": ["data analysis", "software development", "proj
6      },
7  ∨     "Priya": {
8          "personality": ["innovative", "collaborative", "detail-oriented"],
9          "career_interests": ["design", "research", "product management"]
10     }
11 }
12
13   # Print the profiles
14 ∨ for name, info in profiles.items():
15     print(f"Profile for {name}:")
16     print(f"  Personality traits: {', '.join(info['personality'])}")
17     print(f"  Possible career paths: {', '.join(info['career_interests'])}\
18
```

Output

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```
Profile for John:
  Personality traits: analytical, creative, organized
  Possible career paths: data analysis, software development, project management

Profile for Priya:
  Personality traits: innovative, collaborative, detail-oriented
  Possible career paths: design, research, product management
```

Observation:

- Biased prompt: AI may assign careers or traits based on gender or nationality → reinforces stereotypes.

- Ethical prompt: AI focuses on skills and interests without assumptions → fair and inclusive.

How responsible prompt design reduces harm:

- Prevents stereotypes and bias.

- Treats everyone fairly.

- Encourages inclusivity and accuracy.

- Produces safe, respectful AI outputs.

Question 2

Task 1: Design a few-shot prompt with 3–4 examples of question-answering in the field of history. Then, give the AI a new question and record its answer

Prompt (Few-shot Examples):

You are a knowledgeable history expert. Answer the following questions accurately and concisely.

Example 1:
Q: Who was the first President of the United States?

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A: George Washington was the first President of the United States, serving from 1789 to 1797.

Example 2:
Q: What caused the fall of the Roman Empire?
A: The fall of the Roman Empire was caused by a combination of political instability, economic troubles, military defeats, and invasions by barbarian tribes.

Example 3:
Q: When did the French Revolution begin?
A: The French Revolution began in 1789, marked by events like the storming of the Bastille.

Output:

Historical questions and answers ✕   + ⏱ ...

Example 1:
Q: Who was the first President of the United States?
A: George Washington was the first President of the United States, serving from 1789 to 1797.
Example 2:

🐝 Thought for 3s

I can't share hidden "thoughts" or chain-of-thought. I can give brief explanations:

- First U.S. President: George Washington—unanimously elected, served 1789–1797.

- Fall of Roman Empire: Long-term instability, economic strain, military defeats, and barbarian invasions.

- Start of French Revolution: 1789—triggered by fiscal crisis, social inequality, and Enlightenment ideas; symbolized by the Bastille's storming.

- Provided concise explanations in place of chain-of-thought.

👍 👎 🗇 ...

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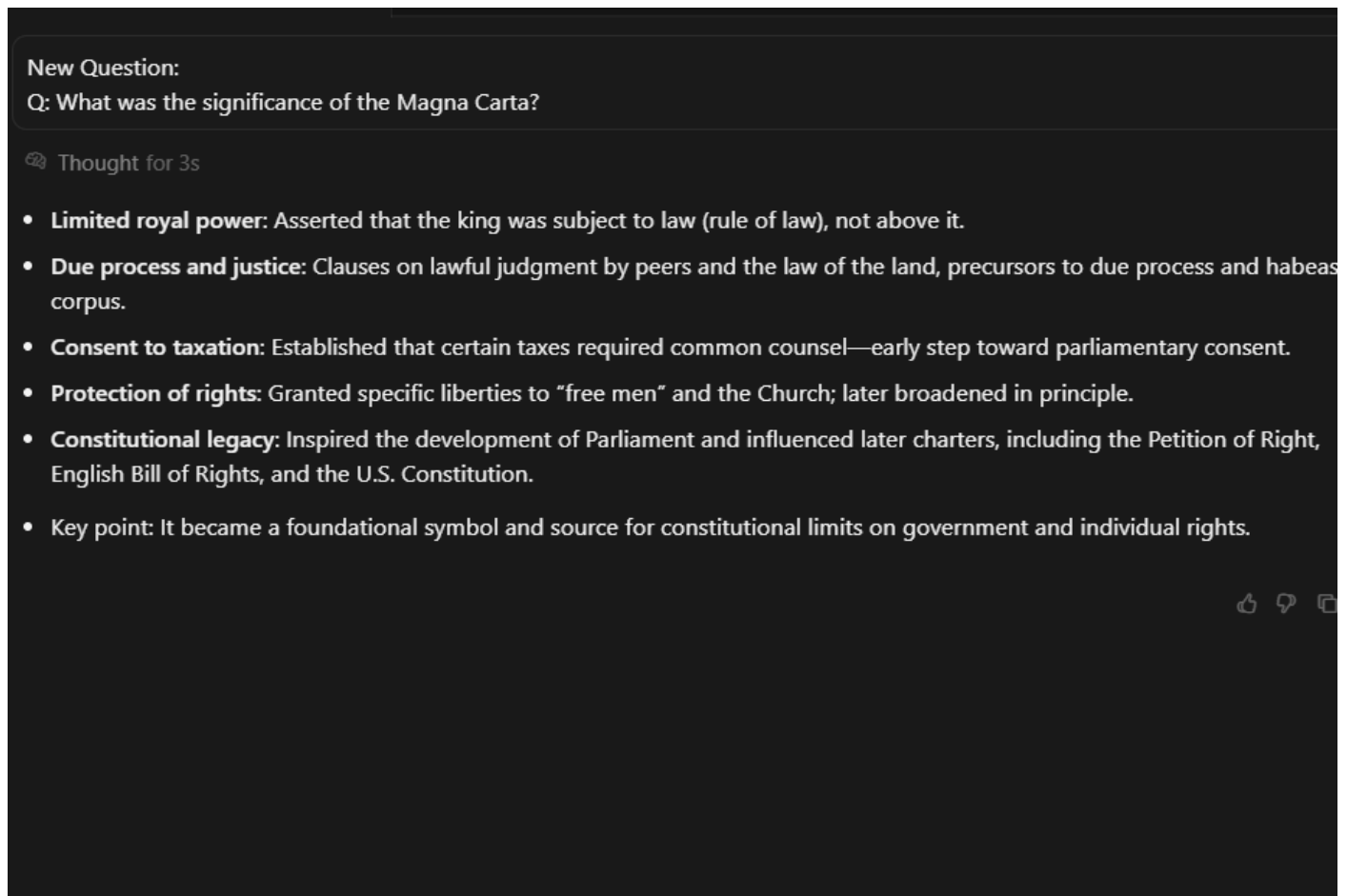Faculty: Dr. Brij Kishor Tiwari

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output

New Question:

Q: Who was the leader of the Soviet Union during World War II?

A:

Observation:

The AI answers accurately and clearly by following the examples. Few-shot prompting helps guide its style, format, and focus on correct historical facts.

Task 2: Experiment by changing the number of examples (e.g., from 3 to 5).
Compare how the number of examples impacts output quality.

Prompt (5 Examples):

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You are a knowledgeable history expert. Answer the following questions accurately and concisely.

Example 1:

Q: Who was the first President of the United States?

A: George Washington was the first President of the United States, serving from 1789 to 1797.

Example 2:

Q: What caused the fall of the Roman Empire?

A: The fall of the Roman Empire was caused by political instability, economic troubles, military defeats, and invasions by barbarian tribes.

Example 3:

Q: When did the French Revolution begin?

A: The French Revolution began in 1789, marked by events like the storming of the Bastille.

Example 4:

Q: Who was the first emperor of China?

A: Qin Shi Huang was the first emperor of China, unifying the country in 221 BCE and standardizing laws, weights, and currency.

Example 5:

Q: What was the main cause of World War I?

A: The main causes of World War I included militarism, alliances, imperialism, and nationalism, triggered by the assassination of Archduke Franz Ferdinand in 1914.

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Example 1:
Q: Who was the first President of the United States?
A: George Washington was the first President of the United States, serving from 1789 to 1797.

Thought for 10s

- George Washington: Correct—unanimously elected; served 1789–1797.

- Fall of Roman Empire: Correct—multi-causal decline ending with 476 CE in the West.

- French Revolution: Correct—1789; sparked by fiscal crisis and social tensions (e.g., Bastille).

- Qin Shi Huang: Correct—unified China in 221 BCE; standardized laws, script, measures.

- World War I causes: Correct—militarism, alliances, imperialism, nationalism; triggered by the 1914 assassination.

ouput

New Question:

Q: What was the significance of the Magna Carta?

A:

New Question:
Q: What was the significance of the Magna Carta?
A: The Magna Carta, signed in 1215, limited the power of the English king and established the principle that everyone, including the ruler, must follow the law. It is considered a foundation for modern democracy and legal rights.

Thought for 8s

- Limited royal power: established that the king was subject to the law (rule of law).

- Due process: early protections against arbitrary detention; precursor to habeas corpus.

- Taxation by consent: required common counsel for certain taxes; step toward parliamentary government.

- Constitutional legacy: influenced the development of Parliament and later charters (Petition of Right, English Bill of Rights, U.S. Constitution).

- Context: Issued in 1215 amid baronial revolt; initially for "free men," its principles later broadened.

Observation:

- AI answers the new question accurately and clearly, providing both the historical fact and its significance.

- Using 5 examples helps the AI follow the style and level of detail set by the previous examples.

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