**TASK 2**

**Potential Bias in the Telco Customer Churn Dataset**

**1. Gender (Gender)**

**Why it's a potential bias?**

If the churn rate is significantly different between male and female customers, gender could introduce bias.

The model may learn gender-based patterns instead of actual behavioral factors.

**2. Senior Citizen Status (Senior Citizen)**

**Why it's a potential bias?**

Older customers may have different technology preferences or service expectations.

If a model overemphasizes senior citizens as high churn risks, it could unfairly predict their behavior.

**3. Payment Method (Payment Method)**

**Why it's a potential bias?**

Certain payment methods (e.g., **electronic check vs. bank transfer**) might correlate with higher churn rates.

Customers who use mailed checks may be categorized differently, leading to **economic bias**.

**4. Contract Type (Contract)**

**Why it's a potential bias?**

Customers with **month-to-month contracts** are more likely to churn compared to those with **two-year contracts**.

The model might over-rely on contract length instead of other behavioral factors.

**5. Paperless Billing (Paperless Billing)**

**Why it's a potential bias?**

Digital vs. paper billing preferences might correlate with age or economic factors.

Customers who prefer **paper bills** may be unfairly predicted as more likely to churn.

**6. Internet Service Type (Internet Service)**

**Why it's a potential bias?**

The type of internet service (DSL, Fiber, or None) might affect churn patterns.

If **fiber customers churn less**, the model could be biased towards customers using better services.