**1. Positive Case**

**Input:**

* **CSV File:**

Name, Age, Salary

Alice, 30, 70000

Bob, 25, 50000

Charlie, 35, 90000

* **User Message:**  
  "Calculate the average age of employees."

**Output:**

1. **Generated Code:**

import pandas as pd

def process\_csv(file\_path):

data = pd.read\_csv(file\_path)

return data['Age'].mean()

result = process\_csv('input.csv')

print(result)

1. **Execution Response:**  
   30.0

**2. Edge Case: Empty CSV File**

**Input:**

* **CSV File:***(File exists but contains only headers.)*

Name, Age, Salary

* **User Message:**  
  "Calculate the sum of salaries."

**Output:**

1. **Generated Code:**

import pandas as pd

def process\_csv(file\_path):

data = pd.read\_csv(file\_path)

if data.empty:

return "The CSV file is empty."

return data['Salary'].sum()

result = process\_csv('input.csv')

print(result)

1. **Execution Response:**  
   "The CSV file is empty."

**3. Error Handling: Missing Column**

**Input:**

* **CSV File:**

Name, Age

Alice, 30

Bob, 25

Charlie, 35

* **User Message:**  
  "Find the maximum salary."

**Output:**

1. **Generated Code:**

import pandas as pd

def process\_csv(file\_path):

data = pd.read\_csv(file\_path)

if 'Salary' not in data.columns:

return "Error: 'Salary' column is missing in the CSV file."

return data['Salary'].max()

result = process\_csv('input.csv')

print(result)

1. **Execution Response:**  
   "Error: 'Salary' column is missing in the CSV file."

**4. Edge Case: Non-Numeric Data in Numeric Columns**

**Input:**

* **CSV File:**

Name, Age, Salary

Alice, 30, 70000

Bob, 25, fifty thousand

Charlie, 35, 90000

* **User Message:**  
  "Calculate the average salary of employees."

**Output:**

1. **Generated Code:**

import pandas as pd

def process\_csv(file\_path):

data = pd.read\_csv(file\_path)

try:

data['Salary'] = pd.to\_numeric(data['Salary'], errors='coerce')

return data['Salary'].mean()

except Exception as e:

return f"Error: {str(e)}"

result = process\_csv('input.csv')

print(result)

1. **Execution Response:**  
   80000.0 *(Non-numeric value was coerced to NaN and excluded from calculation.)*

**5. Edge Case: CSV with Special Characters**

**Input:**

* **CSV File:**

Name, Age, Salary (in $)

Alice, 30, 70,000

Bob, 25, 50,000

Charlie, 35, 90,000

* **User Message:**  
  "Calculate the average salary."

**Output:**

1. **Generated Code:**

import pandas as pd

def process\_csv(file\_path):

data = pd.read\_csv(file\_path)

data['Salary (in $)'] = data['Salary (in $)'].replace(',', '', regex=True).astype(float)

return data['Salary (in $)'].mean()

result = process\_csv('input.csv')

print(result)

1. **Execution Response:**  
   70000.0