```python
import pandas as pd

# Load the CSV files
final_report = pd.read_csv(r"C:\Users\noori\Documents\qm\forage\BCG_GENAI\Task1_data.csv")
summary_report = pd.read_csv(r"C:\Users\noori\Documents\qm\forage\BCG_GENAI\BCG_dataset.csv")

# Clean column data
final_report.columns = final_report.columns.str.strip()
summary_report.columns = summary_report.columns.str.strip()

# Ensure company names and years match user input
final_report['Company'] = final_report['Company'].astype(str).str.strip().str.title()
final_report['Year'] = final_report['Year'].astype(int)

summary_report['Company'] = summary_report['Company'].astype(str).str.strip().str.title()


# Function to handle queries
def financial_chatbot(company_input, fiscal_year, user_query):
    company_input = company_input.strip().title()  # normalize input
    fiscal_year = int(fiscal_year)

    # Filter for the selected company and year
    filtered = final_report[
        (final_report['Company'] == company_input) &
        (final_report['Year'] == fiscal_year)
        ]

    if filtered.empty:
        return f"No data available for {company_input} in {fiscal_year}."

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32      if user_query == "What is the total revenue?":
33          revenue = filtered['Total Revenue'].values[0]
34          return f"The Total Revenue for {company_input
    } in {fiscal_year} is $ {revenue}"
35
36      elif user_query == "What is the revenue growth
     (%) ?":
37          revenue_growth = filtered['Revenue Growth
     (%)'].values[0]
38          return f"The Revenue Growth for {
    company_input} in {fiscal_year} is {round(
    revenue_growth, 2)}%"
39
40      elif user_query == "What is the net income growth
    (%) ?":
41          net_income_growth = filtered['Net Income
    Growth (%)'].values[0]
42          return f"The Net Income Growth for {
    company_input} in {fiscal_year} is {round(
    net_income_growth, 2)}%"
43
44      elif user_query == "What is the assets growth
    (%) ?":
45          assets_growth = filtered['Assets Growth (%)'
    ].values[0]
46          return f"The Assets Growth for {company_input
    } in {fiscal_year} is {round(assets_growth, 2)}%"
47
48      elif user_query == "What is the liabilities
    growth(%) ?":
49          liabilities_growth = filtered['Liabilities
    Growth (%)'].values[0]
50          return f"The Liabilities Growth for {
    company_input} in {fiscal_year} is {round(
    liabilities_growth, 2)}%"
51
52      elif user_query == "What is the cash flow from
    operations growth(%) ?":
53          cash_ops_growth = filtered['Cash Flow from
    Operations Growth (%)'].values[0]
54          return f"The Cash Flow from Operations Growth
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54  for {company_input} in {fiscal_year} is {round(
   cash_ops_growth, 2)}%"
55
56      # Year-by-year averages from summary report
57      elif user_query == "What is the year by year
   average revenue growth rate(%)?":
58          val = summary_report[summary_report['Company'
   ] == company_input]['Revenue Growth (%)'].values[0]
59          return f"Year-by-year average revenue growth
   rate(%) for {company_input} is {round(val, 2)}%"
60
61      elif user_query == "What is the year by year
   average net income growth rate(%)?":
62          val = summary_report[summary_report['Company'
   ] == company_input]['Net Income Growth (%)'].values[0
   ]
63          return f"Year-by-year average net income
   growth rate(%) for {company_input} is {round(val, 2)}
   %"
64
65      elif user_query == "What is the year by year
   average assets growth rate(%)?":
66          val = summary_report[summary_report['Company'
   ] == company_input]['Assets Growth (%)'].values[0]
67          return f"Year-by-year average assets growth
   rate(%) for {company_input} is {round(val, 2)}%"
68
69      elif user_query == "What is the year by year
   average liabilities growth rate(%)?":
70          val = summary_report[summary_report['Company'
   ] == company_input]['Liabilities Growth (%)'].values[
   0]
71          return f"Year-by-year average liabilities
   growth rate(%) for {company_input} is {round(val, 2)}
   %"
72
73      elif user_query == "What is the year by year
   average cash flow from operations growth rate(%)?":
74          val = summary_report[summary_report['Company'
   ] == company_input]['Cash Flow from Operations Growth
    (%)'].values[
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            0]
        return f"Year-by-year average cash flow from operations growth rate(%) for {company_input} is {round(val, 2)}%"

    else:
        return "Sorry, I can only answer predefined financial queries."


# Chatbot interface
print("-------------------------------------------------------------------------")
print("Hello! Welcome to AI Driven Financial Chatbot !!!")
print("I can help you with your financial queries.")
print("Available Companies: Apple, Microsoft, Tesla")
print("Available Fiscal Years: 2022, 2023, 2024")
print("Type 'exit' at any point to quit.")

while True:
    company_input = input("\nEnter company name: ")
    if company_input.lower() == "exit":
        break

    fiscal_year_input = input("Enter fiscal year (2022-2024): ")
    if fiscal_year_input.lower() == "exit":
        break

    print("\nAvailable Queries:")
    print("1. What is the total revenue?")
    print("2. What is the revenue growth (%) ?")
    print("3. What is the net income growth(%) ?")
    print("4. What is the assets growth(%) ?")
    print("5. What is the liabilities growth(%) ?")

    user_query = input("\nEnter your query: ")
    if user_query.lower() == "exit":
```

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108             break
109
110         # Call the chatbot function
111         response = financial_chatbot(company_input,
    fiscal_year_input, user_query)
112         print("\n" + response)
113
```