ASSIGNMENT – 18.2

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BATCH NUMBER : 01

COURSE CODE : 24CS002PC215

PROGRAM NAME : B.TECH

YEAR/SEM : 2ND AND 3RD

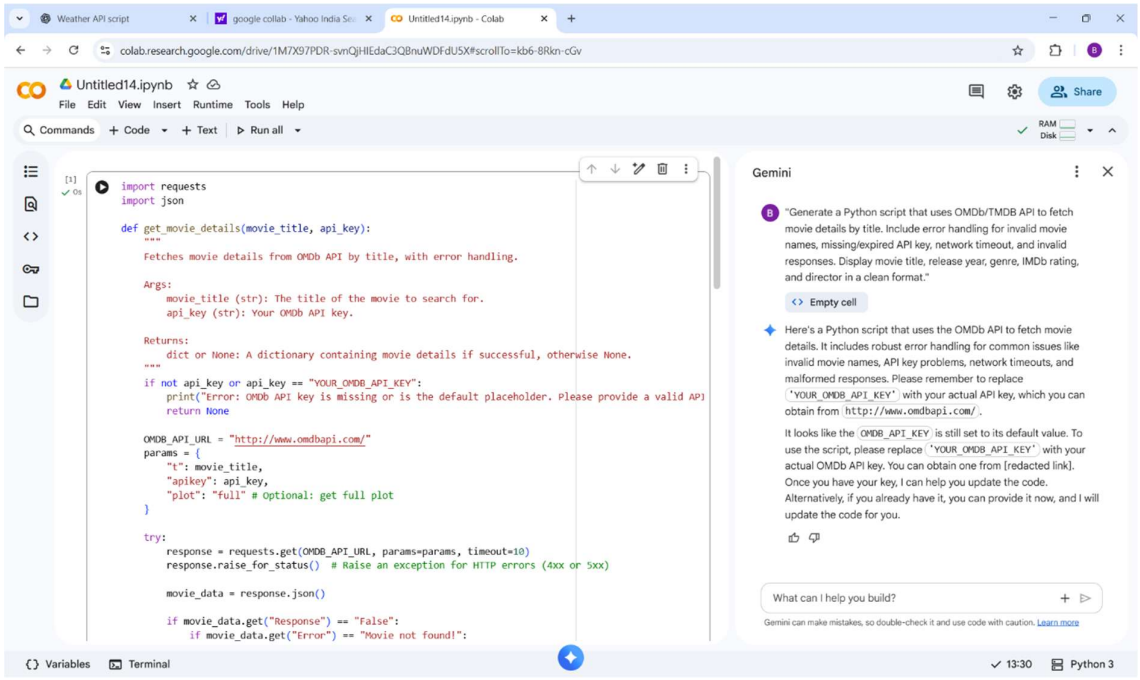
TASK 1 :

Connect to a Movie Database API (e.g., OMDb or TMDB) to fetch details of a movie.

PROMPT :

“Generate a Python script that uses OMDb/TMDB API to fetch movie details by title. Include error handling for invalid movie names, missing/expired API key, network timeout, and invalid responses. Display movie title, release year, genre, IMDb rating, and director in a clean format.”

CODE :



OUTPUT :

Please obtain an OMDb API key from http://www.omdbapi.com/ and replace 'YOUR_OMDB_API_KEY' in the script.

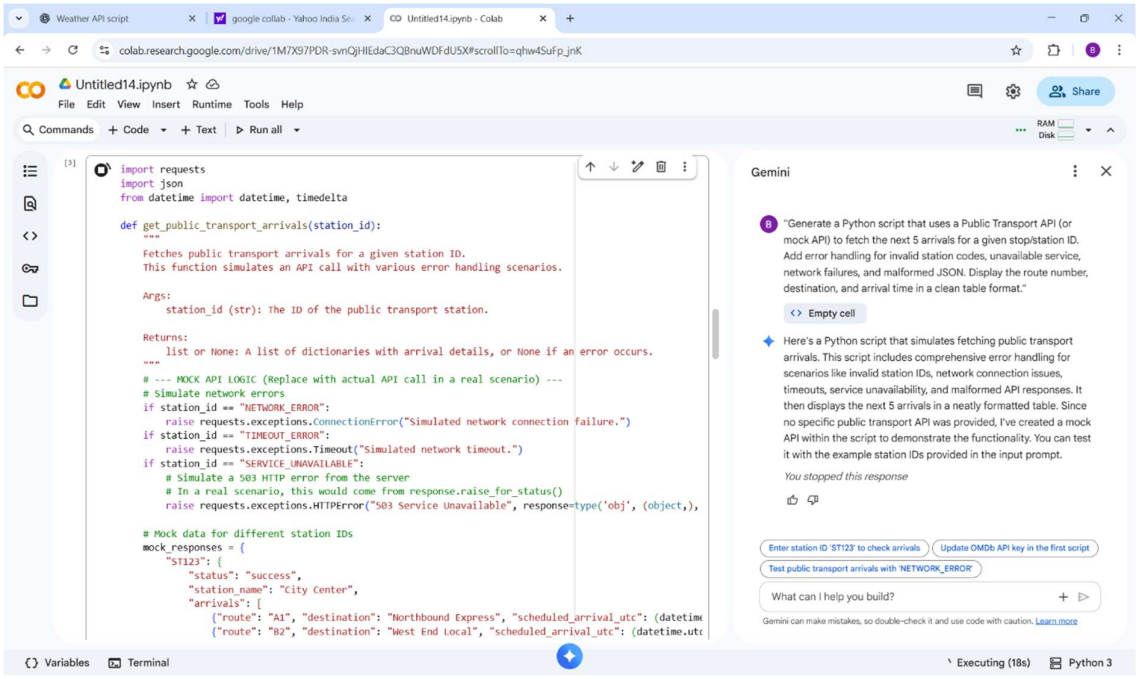
TASK 2 :

Use a Public Transport API (e.g., city bus/train API or mockdata) to fetch live arrival times

PROMPT :

"Generate a Python script that uses a Public Transport API (or mock API) to fetch the next 5 arrivals for a given stop/station ID. Add error handling for invalid station codes, unavailable service, network failures, and malformed JSON. Display the route number, destination, and arrival time in a clean table format."

CODE :



```
import requests
import json
from datetime import datetime, timedelta

def get_public_transport_arrivals(station_id):
    """
    Fetches public transport arrivals for a given station ID.
    This function simulates an API call with various error handling scenarios.

    Args:
        station_id (str): The ID of the public transport station.

    Returns:
        list or None: A list of dictionaries with arrival details, or None if an error occurs.
    """
    # --- MOCK API LOGIC (Replace with actual API call in a real scenario) ---
    # Simulate network errors
    if station_id == "NETWORK_ERROR":
        raise requests.exceptions.ConnectionError("Simulated network connection failure.")
    if station_id == "TIMEOUT_ERROR":
        raise requests.exceptions.Timeout("Simulated network timeout.")
    if station_id == "SERVICE_UNAVAILABLE":
        # Simulate a 503 HTTP error from the server
        # In a real scenario, this would come from response.raise_for_status()
        raise requests.exceptions.HTTPError("503 Service Unavailable", response=type('obj', (object,),),

    # Mock data for different station IDs
    mock_responses = {
        "ST123": {
            "status": "success",
            "station_name": "City Center",
            "arrivals": [
                {"route": "A1", "destination": "Northbound Express", "scheduled_arrival_utc": (datetime
                {"route": "B2", "destination": "West End Local", "scheduled_arrival_utc": (datetime.utc
```

Gemini

"Generate a Python script that uses a Public Transport API (or mock API) to fetch the next 5 arrivals for a given stop/station ID. Add error handling for invalid station codes, unavailable service, network failures, and malformed JSON. Display the route number, destination, and arrival time in a clean table format."

Empty cell

Here's a Python script that simulates fetching public transport arrivals. This script includes comprehensive error handling for scenarios like invalid station IDs, network connection issues, timeouts, service unavailability, and malformed API responses. It then displays the next 5 arrivals in a neatly formatted table. Since no specific public transport API was provided, I've created a mock API within the script to demonstrate the functionality. You can test it with the example station IDs provided in the input prompt.

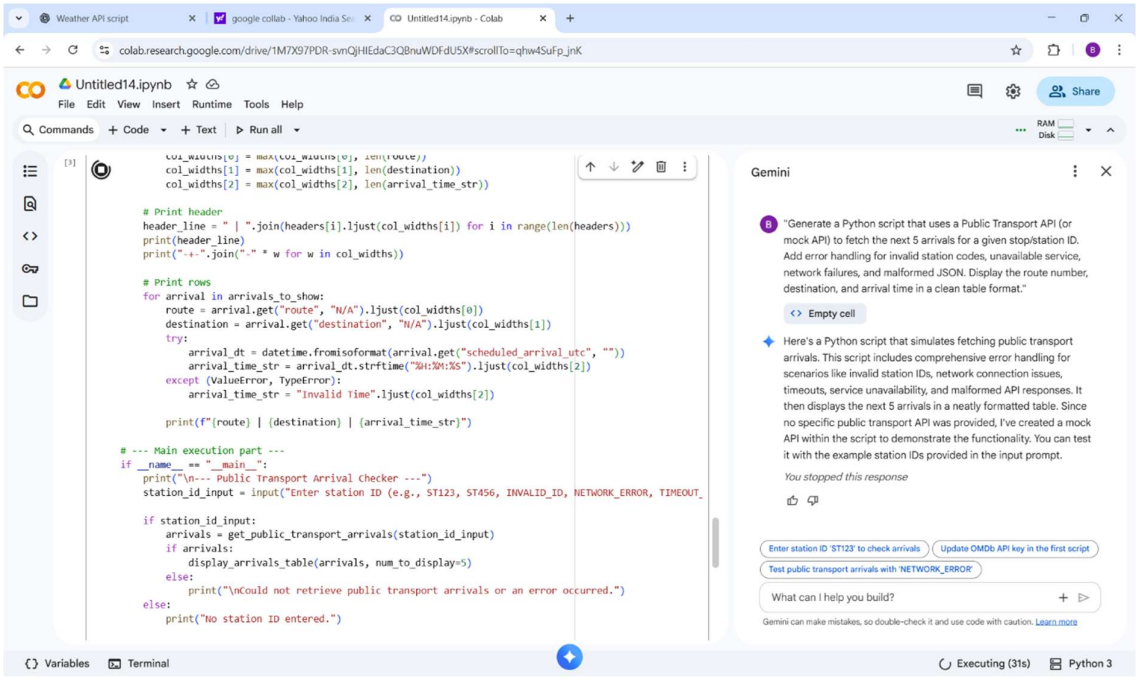
You stopped this response

Enter station ID 'ST123' to check arrivals | Update OMDb API key in the first script | Test public transport arrivals with 'NETWORK_ERROR'

What can I help you build?

Gemini can make mistakes, so double-check it and use code with caution. Learn more

Variables | Terminal | Executing (18s) | Python 3



```
        col_widths[1] = max(col_widths[1], len(destination))
        col_widths[2] = max(col_widths[2], len(arrival_time_str))

    # Print header
    header_line = " | ".join(headers[i].ljust(col_widths[i]) for i in range(len(headers)))
    print(header_line)
    print("-+-".join("-" * w for w in col_widths))

    # Print rows
    for arrival in arrivals_to_show:
        route = arrival.get("route", "N/A").ljust(col_widths[0])
        destination = arrival.get("destination", "N/A").ljust(col_widths[1])
        try:
            arrival_dt = datetime.fromisoformat(arrival.get("scheduled_arrival_utc", ""))
            arrival_time_str = arrival_dt.strftime("%H:%M:%S").ljust(col_widths[2])
        except (ValueError, TypeError):
            arrival_time_str = "Invalid Time".ljust(col_widths[2])

        print(f"{route} | {destination} | {arrival_time_str}")

# --- Main execution part ---
if __name__ == "__main__":
    print("\n--- Public Transport Arrival Checker ---")
    station_id_input = input("Enter station ID (e.g., ST123, ST456, INVALID_ID, NETWORK_ERROR, TIMEOUT_

    if station_id_input:
        arrivals = get_public_transport_arrivals(station_id_input)
        if arrivals:
            display_arrivals_table(arrivals, num_to_display=5)
        else:
            print("\nCould not retrieve public transport arrivals or an error occurred.")
    else:
        print("No station ID entered.")
```

Gemini

"Generate a Python script that uses a Public Transport API (or mock API) to fetch the next 5 arrivals for a given stop/station ID. Add error handling for invalid station codes, unavailable service, network failures, and malformed JSON. Display the route number, destination, and arrival time in a clean table format."

Empty cell

Here's a Python script that simulates fetching public transport arrivals. This script includes comprehensive error handling for scenarios like invalid station IDs, network connection issues, timeouts, service unavailability, and malformed API responses. It then displays the next 5 arrivals in a neatly formatted table. Since no specific public transport API was provided, I've created a mock API within the script to demonstrate the functionality. You can test it with the example station IDs provided in the input prompt.

You stopped this response

Enter station ID 'ST123' to check arrivals | Update OMDb API key in the first script | Test public transport arrivals with 'NETWORK_ERROR'

What can I help you build?

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Variables | Terminal | Executing (31s) | Python 3

OUTPUT :

--- Public Transport Arrival Checker ---

Enter station ID (e.g., ST123, ST456, INVALID_ID, NETWORK_ERROR, TIMEOUT_ERROR,

SERVICE_UNAVAILABLE,MALFORMED_JSON_RESPONSE):

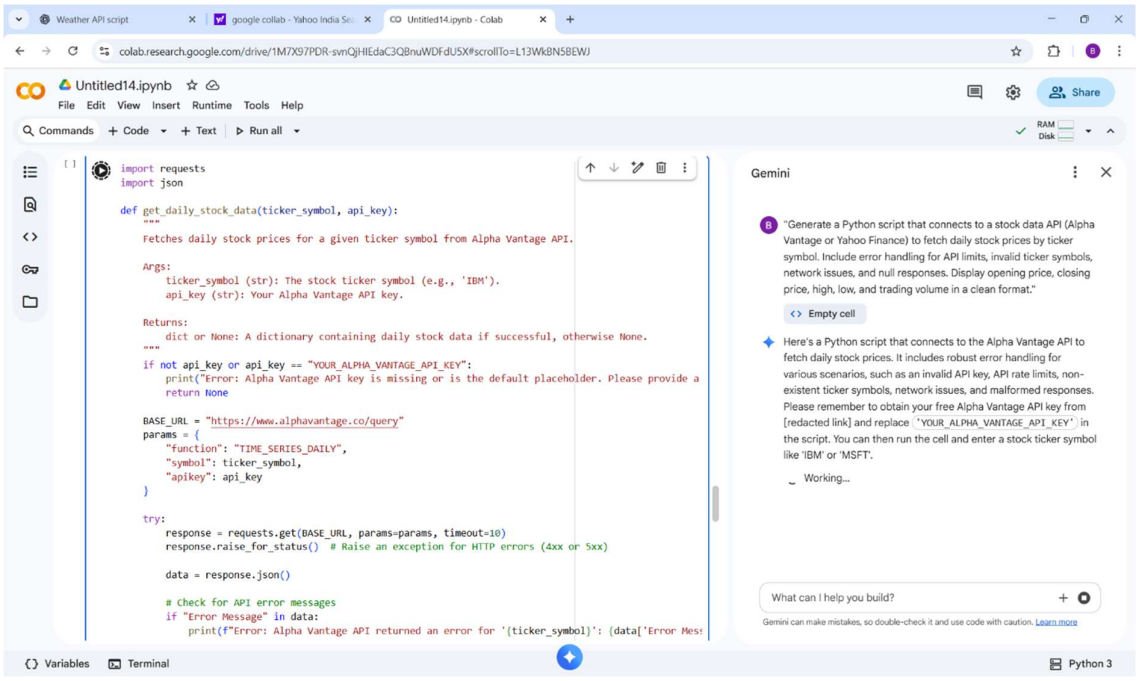
TASK 3 :

Connect to a stock data API (e.g., Alpha Vantage, Yahoo Finance) to fetch daily stock prices

PROMPT :

"Generate a Python script that connects to a stock data API (Alpha Vantage or Yahoo Finance) to fetch daily stock prices by ticker symbol. Include error handling for API limits, invalid ticker symbols, network issues, and null responses. Display opening price, closing price, high, low, and trading volume in a clean format."

CODE :



```
import requests
import json

def get_daily_stock_data(ticker_symbol, api_key):
    """
    Fetches daily stock prices for a given ticker symbol from Alpha Vantage API.

    Args:
        ticker_symbol (str): The stock ticker symbol (e.g., 'IBM').
        api_key (str): Your Alpha Vantage API key.

    Returns:
        dict or None: A dictionary containing daily stock data if successful, otherwise None.
    """
    if not api_key or api_key == "YOUR_ALPHA_VANTAGE_API_KEY":
        print("Error: Alpha Vantage API key is missing or is the default placeholder. Please provide a
        return None

    BASE_URL = "https://www.alphavantage.co/query"
    params = {
        "function": "TIME_SERIES_DAILY",
        "symbol": ticker_symbol,
        "apikey": api_key
    }

    try:
        response = requests.get(BASE_URL, params=params, timeout=10)
        response.raise_for_status()  # Raise an exception for HTTP errors (4xx or 5xx)

        data = response.json()

        # Check for API error messages
        if "Error Message" in data:
            print(f"Error: Alpha Vantage API returned an error for '{ticker_symbol}': {data['Error Mes
```

Gemini

"Generate a Python script that connects to a stock data API (Alpha Vantage or Yahoo Finance) to fetch daily stock prices by ticker symbol. Include error handling for API limits, invalid ticker symbols, network issues, and null responses. Display opening price, closing price, high, low, and trading volume in a clean format."

Empty cell

Here's a Python script that connects to the Alpha Vantage API to fetch daily stock prices. It includes robust error handling for various scenarios, such as an invalid API key, API rate limits, non-existent ticker symbols, network issues, and malformed responses. Please remember to obtain your free Alpha Vantage API key from [redacted link] and replace `'YOUR_ALPHA_VANTAGE_API_KEY'` in the script. You can then run the cell and enter a stock ticker symbol like 'IBM' or 'MSFT'.

Working...

What can I help you build?

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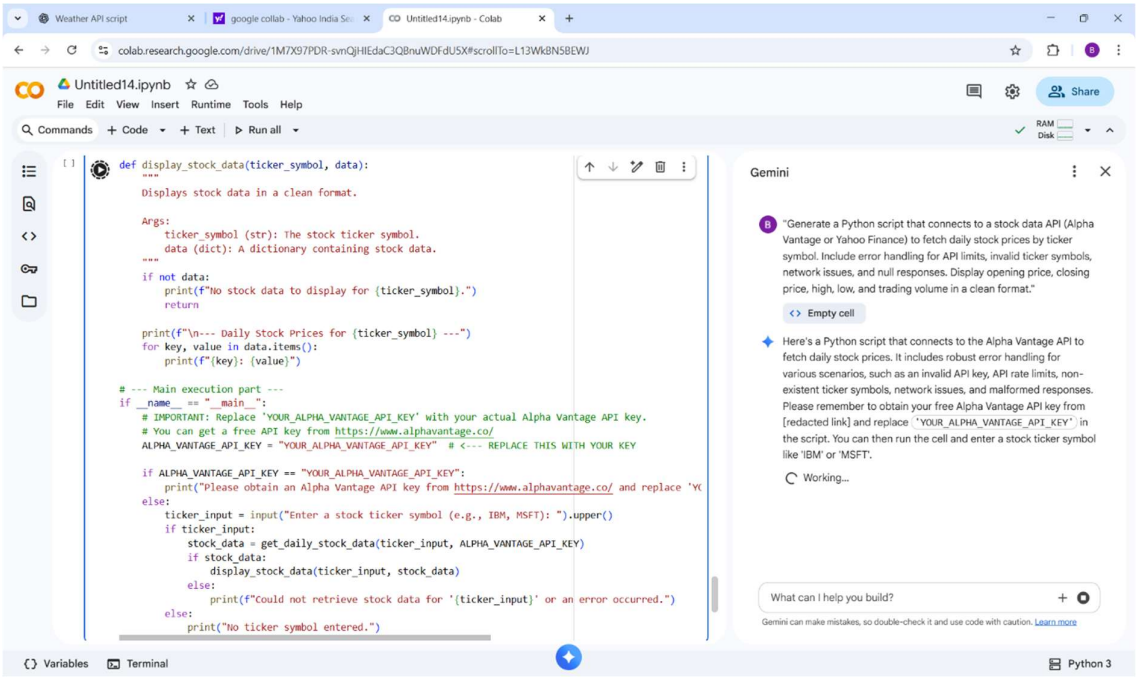

```
def display_stock_data(ticker_symbol, data):
    """
    Displays stock data in a clean format.

    Args:
        ticker_symbol (str): The stock ticker symbol.
        data (dict): A dictionary containing stock data.
    """
    if not data:
        print(f"No stock data to display for {ticker_symbol}.")
        return

    print(f"\n--- Daily Stock Prices for {ticker_symbol} ---")
    for key, value in data.items():
        print(f"{key}: {value}")

# --- Main execution part ---
if __name__ == "__main__":
    # IMPORTANT: Replace 'YOUR_ALPHA_VANTAGE_API_KEY' with your actual Alpha Vantage API key.
    # You can get a free API key from https://www.alphavantage.co/
    ALPHA_VANTAGE_API_KEY = "YOUR_ALPHA_VANTAGE_API_KEY"  # <--- REPLACE THIS WITH YOUR KEY

    if ALPHA_VANTAGE_API_KEY == "YOUR_ALPHA_VANTAGE_API_KEY":
        print("Please obtain an Alpha Vantage API key from https://www.alphavantage.co/ and replace 'Y
    else:
        ticker_input = input("Enter a stock ticker symbol (e.g., IBM, MSFT): ").upper()
        if ticker_input:
            stock_data = get_daily_stock_data(ticker_input, ALPHA_VANTAGE_API_KEY)
            if stock_data:
                display_stock_data(ticker_input, stock_data)
            else:
                print(f"Could not retrieve stock data for '{ticker_input}' or an error occurred.")
        else:
            print("No ticker symbol entered.")
```

Gemini

"Generate a Python script that connects to a stock data API (Alpha Vantage or Yahoo Finance) to fetch daily stock prices by ticker symbol. Include error handling for API limits, invalid ticker symbols, network issues, and null responses. Display opening price, closing price, high, low, and trading volume in a clean format."

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Here's a Python script that connects to the Alpha Vantage API to fetch daily stock prices. It includes robust error handling for various scenarios, such as an invalid API key, API rate limits, non-existent ticker symbols, network issues, and malformed responses. Please remember to obtain your free Alpha Vantage API key from [redacted link] and replace `'YOUR_ALPHA_VANTAGE_API_KEY'` in the script. You can then run the cell and enter a stock ticker symbol like 'IBM' or 'MSFT'.

Working...

What can I help you build?

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OUTPUT :

Fetching stock data for: AAPL...

Stock Data Retrieved Successfully

Ticker Symbol : AAPL

Date : 2025-11-18

Opening Price : 187.45

Closing Price : 189.62

Day High : 190.10

Day Low : 186.90

Trading Volume : 58,742,330