

## **ASSIGNMENT – 18.2**

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*BATCH NUMBER : 01*

*COURSE CODE : 24CS002PC215*

*PROGRAM NAME : B.TECH*

*YEAR/SEM : 2ND AND 3<sup>RD</sup>*

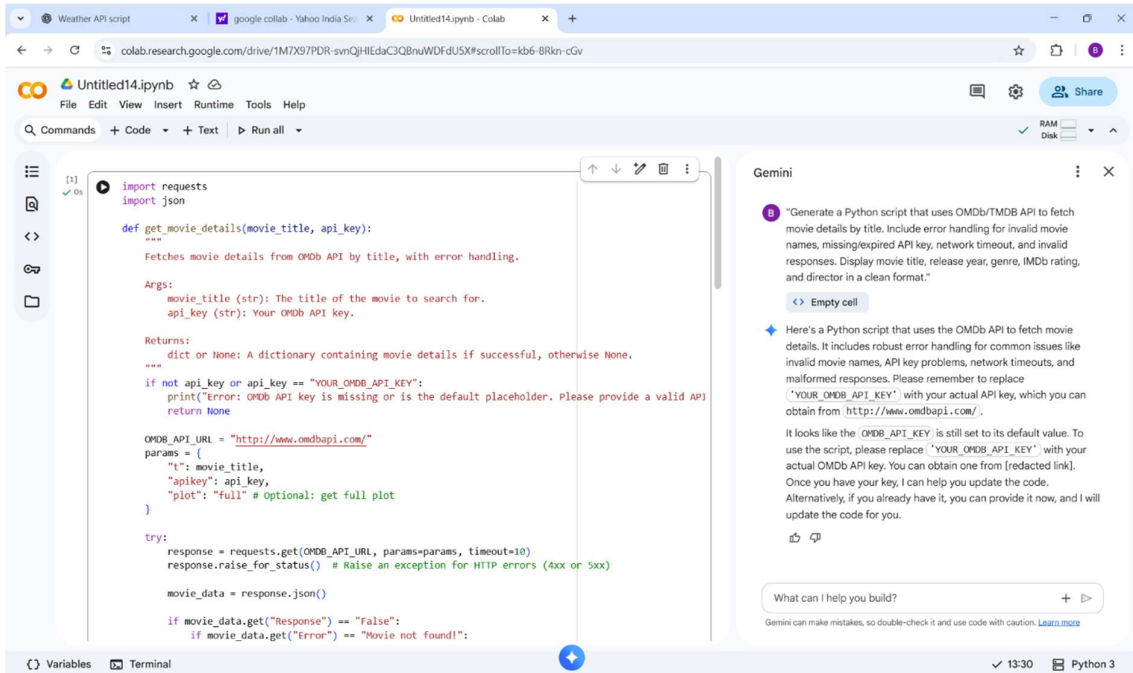
### **TASK 1 :**

*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 :



```
[1] ✓ 0s
import requests
import json

def get_movie_details(movie_title, api_key):
    """
    Fetches movie details from OMDb API by title, with error handling.

    Args:
        movie_title (str): The title of the movie to search for.
        api_key (str): Your OMDb API key.

    Returns:
        dict or None: A dictionary containing movie details if successful, otherwise None.
    """
    if not api_key or api_key == "YOUR_OMDB_API_KEY":
        print("Error: OMDb API key is missing or is the default placeholder. Please provide a valid API key.")
        return None

    OMDb_API_URL = "http://www.omdbapi.com/"
    params = {
        "t": movie_title,
        "apikey": api_key,
        "plot": "full" # Optional: get full plot
    }

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

        movie_data = response.json()

        if movie_data.get("Response") == "False":
            if movie_data.get("Error") == "Movie not found!":
```

**Gemini**

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.

Empty cell

Here's a Python script that uses the OMDb API to fetch movie details. It includes robust error handling for common issues like invalid movie names, API key problems, network timeouts, and malformed responses. Please remember to replace `"YOUR_OMDB_API_KEY"` with your actual API key, which you can obtain from <http://www.omdbapi.com/>.

It looks like the `OMDb_API_KEY` is still set to its default value. To use the script, please replace `"YOUR_OMDB_API_KEY"` with your actual OMDb API key. You can obtain one from [redacted link]. Once you have your key, I can help you update the code. Alternatively, if you already have it, you can provide it now, and I will update the code for you.

What can I help you build?


Gemini can make mistakes, so double-check it and use code with caution. [Learn more](#)

Variables Terminal 13:30 Python 3

## 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 :

The screenshot shows a Google Colab notebook titled "Untitled14.ipynb". The code in the cell is a Python script that simulates fetching public transport arrivals for a given station ID. It includes error handling for network errors, timeouts, and service unavailability. The script uses a mock API to return a list of arrivals for a specific station ID.

```
[3] 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.utcnow() + timedelta(minutes=10))}
                ]
            }
        }

        if station_id in mock_responses:
            return mock_responses[station_id]
        else:
            return None
```

The Gemini chat interface on the right shows a 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." The response is a Python script that simulates fetching public transport arrivals, including error handling for 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, a mock API is used within the script to demonstrate the functionality. The user can test it with the example station IDs provided in the input prompt.

The screenshot shows a Google Colab notebook titled "Untitled14.ipynb". The code in the cell is a Python script that displays the public transport arrivals in a table. It includes error handling for invalid station IDs, network connection issues, timeouts, service unavailability, and malformed API responses. The script uses a mock API to return a list of arrivals for a specific station ID.

```
[3] col_widths[0] = max(col_widths[0], len(header_line))
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("-+-" + "-" * 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.")
```

The Gemini chat interface on the right shows a 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." The response is a Python script that simulates fetching public transport arrivals, including error handling for 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, a mock API is used within the script to demonstrate the functionality. The user can test it with the example station IDs provided in the input prompt.

## **OUTPUT :**

*--- Public Transport Arrival Checker ---*

*Enter station ID (e.g., ST123, ST456, INVALID\_ID,  
NETWORK\_ERROR, TIMEOUT\_ERROR,  
SERVICE\_UNAVAILABLE, MALFORMED\_JSON\_RESP  
ONSE):*

## **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 :

The screenshot shows a Google Colab notebook titled "Untitled14.ipynb". The code in the first cell defines a function `get_daily_stock_data` that fetches daily stock prices from the Alpha Vantage API. The function takes a `ticker_symbol` and an `api_key` as arguments. It uses the `requests` library to send a GET request to the Alpha Vantage API endpoint. The response is parsed as JSON and returned. Error handling is included for missing API keys and HTTP errors (4xx or 5xx).

```
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")
        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 Message']}")
            return None

    except requests.exceptions.HTTPError as http_err:
        print(f"HTTP error occurred: {http_err}")
    except Exception as err:
        print(f"Other error occurred: {err}")

    return data
```

The Gemini chat interface on the right provides instructions for using the script, including obtaining an API key and replacing the placeholder in the code.

The screenshot shows a Google Colab notebook titled "Untitled14.ipynb". The code in the second cell defines a function `display_stock_data` that displays stock data in a clean format. The function takes a `ticker_symbol` and a `data` dictionary as arguments. It checks if the data is valid and then prints the stock data in a clean format. The main execution part prompts the user to enter a stock ticker symbol and an Alpha Vantage API key, and then calls the `get_daily_stock_data` function to fetch the data and the `display_stock_data` function to display it.

```
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 'X'")
    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.")
```

The Gemini chat interface on the right provides instructions for using the script, including obtaining an API key and replacing the placeholder in the code.

## ***OUTPUT :***

*Fetching stock data for: AAPL...*

*Stock Data Retrieved Successfully*

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*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*



