Guide for Using the Historical Data Python Script Template  
  
**Introduction**

This Python script is designed to help customers access and utilize historical data from the MarineTraffic (MT) API. It demonstrates how to authenticate and connect to the API, request historical data, process and handle the data, and store it in CSV files. This script is customizable and intended to facilitate fast integration of MT historical data into your business cases.

**Script Breakdown**

Below is the complete Python script with detailed explanations for each block of code:

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Description automatically generated

**Imports**: These libraries are required for handling HTTP requests, managing CSV files, handling dates, encoding URLs, and managing temporary files.

A screen shot of a computer

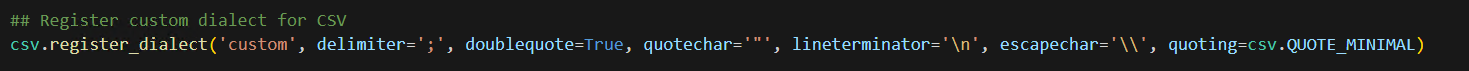
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**Constants and API Keys**: CALL\_LIMIT sets the rate limit for API calls (DO NOT CHANGE). API\_KEYS is a list where you input your MarineTraffic API keys.

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Description automatically generated

**Editable Parameters**: These are default values for the script. Users can customize them directly in the script or input them when prompted.



**CSV Dialect**: Registers a custom CSV dialect to define how the CSV files are formatted.

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**URL Builder**: Constructs the URL for the API request using the provided parameters and API key.

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**User Input**: Prompts the user for input and returns the provided value or a default value.

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Description automatically generated

**Date Validation**: Ensures that the input date is in the correct format and is on or after allowed date.

A computer screen with text on it

Description automatically generated

**Date Encoding**: Converts a date string to a URL-encoded format.

A screen shot of a computer program

Description automatically generated

**Data Retrieval**: Fetches data from the API and handles potential errors.

A screen shot of a computer program

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**Write to CSV**: Writes the API data to a CSV file using the custom CSV dialect.

A computer screen with text

Description automatically generated

**Save CSV File**: Saves the temporary CSV file to the specified directory.

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**Main Function**: This is the entry point of the script. It prompts the user for inputs, validates the dates, sets default values for period if necessary, and processes the date range to retrieve and save the data.

A screen shot of a computer program

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**Process Date Range**: Processes data for each day in the specified date range and saves it to a CSV file. It handles API calls and waits for the specified call limit before processing the next day.

A computer screen shot of a program code

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**How to Customize the Script**

1. **Set API Keys**: Add your MarineTraffic API keys to the API\_KEYS list.
2. **Default Parameters**: Edit the default values for FROMDATE, TODATE, PERIOD, MSGTYPE, and OUTPUT\_DIR as per your requirements.
3. **Running the Script**: Execute the script and provide the necessary inputs when prompted.

**Detailed Explanation**

1. **Import Libraries**:
   * Import necessary libraries like requests, datetime, and csv.
2. **Define Constants**:
   * Set the CALL\_LIMIT to manage API call frequency.
   * List of API\_KEYS where you can add your MarineTraffic API keys.
   * Define default values for FROMDATE, TODATE, PERIOD, MSGTYPE, and OUTPUT\_DIR.
3. **Helper Functions**:
   * build\_url(): Constructs the API request URL.
   * get\_user\_input(): Prompts the user for input and returns the input or default value.
   * getHISTPositions(): Fetches data from the API and handles potential errors.
   * write\_data\_to\_csv(): Writes the API data to a CSV file.
   * save\_csv\_file(): Saves the temporary CSV file to the specified directory.
   * encode\_date(): Encodes the date string for URL usage.
   * validate\_date\_input(): Validates that the date input is on or after 2022-01-01.
4. **Main Function**:
   * Prompts the user to enter fromdate, todate, period, msgtype, and output\_dir.
   * Validates and formats the date inputs.
   * Sets period to 'hourly' if msgtype is 'extended' and period is not provided.
   * Ensures that todate is within 7 days of fromdate.
   * Iterates through each day in the date range, constructs the API request URL, and processes the data.
   * Writes the data to a temporary CSV file and saves it with a timestamped file name.
   * Includes a waiting time between API calls if necessary to respect the CALL\_LIMIT.

**Customization Tips**

* **API Keys**: Add your MarineTraffic API keys to the API\_KEYS list.
* **Date Range**: Adjust the FROMDATE and TODATE parameters as needed.
* **Period and Msgtype**: Customize the PERIOD and MSGTYPE based on your data needs.
* **Output Directory**: Set the OUTPUT\_DIR to your preferred file save location.

**Error Handling**

The script includes error handling to manage:

* HTTP errors and response content issues.
* Invalid date formats and date ranges.
* API call frequency limits.

**Additional Documentation**

Refer to the README file for more detailed examples and guidance on using this script. The README provides further insights into customization options and troubleshooting tips.

With this comprehensive guide and the provided Python script template, you can efficiently access and utilize historical data from the MarineTraffic API, integrating it seamlessly into your business cases.