Package ‘datagovsgR’

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Type Package
Title Call Real Time APIs from Data Gov Singapore
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Description A wrapper for the Data.gov.sg developer resources, which provide real time and historical information, ranging from carpark availability to weather forecasts. The functions makes the API calls for a given date and time, before returning the relevant information in a data frame. All APIs are supported, less the IPOS one which is not returning any data. Relevant information can be found here <https://data.gov.sg/developer>.
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carpark_availability  Carpark Availability

Description
This function calls upon the carpark availability API from data.gov.sg and processes the returning page.

Usage
carpark_availability(date_time = "")

Arguments
date_time  Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Value
A dataframe containing the carpark id, type, last update, total lots, and current lots.

Examples
carpark_availability()
carpark_availability(date = "2019-06-05T10:10:10")
carpark_availability(date = "2018-12-01T19:32:56")

parse_api_date  ParseApiDate

Description
Helper function to check if the date was input correctly before returning a url to be called by the GET function. Also returns an error if the API called can only provide data for a specific date-time, and not date only.

Usage
parse_api_date(api, input_date = "", summary)
parse_api_output

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>api</td>
<td>The api to be called, i.e. api = &quot;environment/air-temperature&quot;</td>
</tr>
<tr>
<td>input_date</td>
<td>Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS or YYYY-MM-DD</td>
</tr>
<tr>
<td>summary</td>
<td>Returns an error if the user inputs a date only time when not supported by the API.</td>
</tr>
</tbody>
</table>

Value

A url to be called by the API.

parse_api_output ParseApiOutput

Description

Helper function to extract the content returned from the API. Returns the status code otherwise.

Usage

parse_api_output(inputcontent)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>inputcontent</td>
<td>Takes the output of the GET function, runs an error check and returns the parsed output.</td>
</tr>
</tbody>
</table>

Value

The extracted content if not error has occurred. Otherwise, the error message is returned.

pm25 PM2.5

Description

This function calls upon the PM2.5 API from data.gov.sg and returns a data frame of the different measures of PM2.5 across 5 different areas in Singapore. This data provided by the API is updated hourly from NEA.

Usage

pm25(date_time = "")
Arguments
date_time Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Details
Note that this function is different from the ‘pm25_summary’ function, which returns the PM2.5 measures for a given day.

Value
A dataframe containing various PM2.5 measures across 5 corners of Singapore

Examples
pm25()
pm25(date_time = "2019-11-08T17:30:00")
pm25(date_time = "2018-01-04T09:16:17")

pm25_summary PM2.5 Summary

Description
This function calls upon the PM2.5 API from data.gov.sg and returns a dataframe of the different measures of the PM2.5 across 5 different areas in Singapore for each hour. This data provided by the API is updated hourly from NEA.

Usage
pm25_summary(date = ")")

Arguments
date Defaults to current (SGD) time. Format: YYYY-MM-DD

Details
Note that this function is different from the ‘pm25‘ function, which returns the PM2.5 measures for a given date and time.

Value
A dataframe containing various PM2.5 measures across 5 corners of Singapore and time of day. Dependent on the data available, not all results range from 0000 to 2300.

Examples
pm25_summary()
pm25_summary(date = "2019-11-08")
pm25_summary(date = "2018-01-04")
**psi**

---

### Description

This function calls upon the PSI API from data.gov.sg and returns a data frame of the different measures of the PSI across 5 different areas in Singapore and the overall measure for the given data-time. This data provided by the API is updated hourly.

### Usage

\[ \text{psi(date\_time = "")} \]

### Arguments

- **date\_time**
  - Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

### Details

Note that this function is different from the ‘PSI\_summary’ function, which returns the PSI measures for a given day.

### Value

A dataframe containing various PSI measures across 5 corners of Singapore

### Examples

\[
\begin{align*}
\text{psi()} \\
\text{psi(date = "2019-11-08T17:30:00")} \\
\text{psi(date = "2018-01-04T09:16:17")}
\end{align*}
\]

---

### psi\_summary

---

### Description

This function calls upon the PSI API from data.gov.sg and returns a data frame of the different measures of the PSI across 5 different areas in Singapore and the overall measure for the given date. This data provided by the API is updated hourly.

### Usage

\[ \text{psi\_summary(date = "")} \]
Arguments
date Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Details
Note that this function is different from the ‘PSI’ function, which returns the PSI measures for a given date-time.

Value
A dataframe containing various PSI measures across 5 corners of Singapore and time of day. Dependent on the data available, not all results range from 0000 to 2300.

Examples
psi_summary()
psi_summary(date = "2019-11-08")
psi_summary(date = "2018-01-04")

taxi_availability

Description
This functions calls upon the taxi availability API from data.gov.sg and returns a data frame of the locations of all available taxis.

Usage
taxi_availability(date_time = "")

Arguments
date_time Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Value
A dataframe containing the longitude and latitude values of available taxis.

Examples
taxi_availability()
taxi_availability(date = "2019-08-07T09:30:00")
taxi_availability(date = "2018-06-05T13:45:00")
traffic_images

Traffic Images

Description
This function calls upon the Traffic Images API from data.gov.sg and returns links to images of live traffic conditions along expressways and Woodlands & Tuas Checkpoints, including details of the camera location. This data provided by the API is updated every minute.

Usage
traffic_images(date_time = "")

Arguments
date_time Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Value
A dataframe containing links to the traffic images of current traffic conditions

Examples
traffic_images()
traffic_images(date = "2022-07-01T15:32:45")
traffic_images(date = "2021-02-11T14:11:07")

uvi

UVI(Ultra-violet Index)

Description
This function calls upon the UVI API from data.gov.sg and returns a dataframe of the different measures of the UVI across Singapore and returns the closest UVI value presently and for the past few hours. This data provided by the API is updated hourly.

Usage
uvi(date_time = "")

Arguments
date_time Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS

Value
A dataframe containing the current and past hourly UVI
### Examples

uvi()

```r
uvi(date = "2022-09-03T16:45:23")
uvi(date = "2021-12-06T11:01:55")
```

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### weather_forecast  Weather Forecast

#### Description

This function calls upon the weather forecast API from data.gov.sg and returns a data frame containing different metrics of the forecast. 2-hour, 24-hour and 4-day forecasts are available. This data provided by the API is updated half-hourly.

#### Usage

```r
weather_forecast()
weather_forecast(date = "2019-11-08T17:30:00", forecast = "24-hour")
weather_forecast(date = "2018-01-04T09:16:17", forecast = "4-day")
```

#### Arguments

- `date_time`: Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS
- `forecast`: Defaults to "2-hour". Also available for "24-hour" and "4-day"

#### Value

A dataframe the forecast for a given date and time, and forecast period.

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### weather_reading  Weather Reading

#### Description

This function calls upon the weather reading API from data.gov.sg and returns a list containing the air temperature, rainfall, relative humidity, wind direction and speed across Singapore. Data is updated every 5 minutes for the rainfall API, and every half minute for the other 4 API from NEA.

#### Usage

```r
weather_reading()
weather_reading(date_time = ",", simplify = FALSE)
```
weather_reading

Arguments

date_time  Defaults to current (SGD) time. Format: YYYY-MM-DDTHH:MM:SS
simplify   Defaults to FALSE. Otherwise, simplify = TRUE would return a data frame
           where all 5 metrics are joined according to weather stations, but return several
           NAs, as most weather stations collect rainfall data only.

Details

This API takes slightly longer than the other APIs in the package as 5 APIs are wrapped within this
function.

Value

A dataframe containing various weather readings from weather stations

Examples

weather_reading()
weather_reading(date = "2019-11-08T17:30:00")
weather_reading(date = "2018-01-04T09:16:17", simplify = TRUE)
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