Package 'Ditwah'

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Title Ditwah Storm Data and Tools for Storm Monitoring and Early Warning November 2025, Sri Lanka

Version 1.0.1

Description The Ditwah storm began impacting Sri Lanka on 25 November 2025. Ditwah provides a collection of tidy, well-structured datasets to support storm data management, monitoring, and early warning applications in Sri Lanka. The publicly available data were converted to tidy data format for easy analysis. The package processes weather data, flood data and situation report data (families affected, etc.). The package also includes functions for analyzing river level progression and load dashboard visualizations to enhance situational awareness. This is also developed for educational purposes to support learning in data wrangling, visualization, and disaster analytics.

License GPL (>= 3)

Encoding UTF-8

RoxygenNote 7.3.3

Imports dplyr, tibble

Depends R (>= 4.1.0)

LazyData true

NeedsCompilation no

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`compute_flood_stats` *Computes number of hours in alert, minor and major levels starting from 26 Nov 2025*

Description

Classify flood levels as alert, minor and major and compute the total number of hours in each state

Usage

```
compute_flood_stats(data, DateTime, RiverWaterLevel, alert, major, minor)
```

Arguments

`data`	data frame with variables date and time, river water level, alert level, major flood level and minor flood level
`DateTime`	Variable name corresponds to Date and Time (%Y-%m-%d %H:%M)
`RiverWaterLevel`	Variable name corresponds to the River Water Level
`alert`	Alert level numeric value
`major`	Major flood level numeric value
`minor`	Minor flood level numeric value

Value

A list containing a tibble including new variable called state classifying flood level and total number of hours spent in each state

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`ditwah_3hr_weather_data` *Ditwah storm 3 hour weather station data – November 2025, Sri Lanka*

Description

This dataset contains weather station measurements collected during the Ditwah storm in November 2025 in Sri Lanka. It includes rainfall, temperature, humidity, and a summary report from each station.

Usage

```
ditwah_3hr_weather_data
```

Format

A data frame with 92 rows and 7 columns:

Station_ID Unique identifier for each weather station

Station_Name Name of the weather station

Report_Time Date and time of the report (YYYY-MM-DD HH:MM format)

Rainfall_mm Measured rainfall in millimeters during the reporting period

Temperature_C Measured temperature in degrees Celsius

RH_% Relative humidity percentage at the reporting time

report Grouping variable to report records

Source

Department Of Meteorology, Sri Lanka (https://meteo.gov.lk/)

`flood_water_level` *Ditwah storm flood monitoring data*

Description

This dataset contains hydrological and rainfall measurements recorded at gauging stations during the Ditwah storm in November 2025, Sri Lanka. It includes water levels, flood alert thresholds, rainfall measurements, and additional operational remarks used for monitoring river conditions.

Usage

```
flood_water_level
```

Format

A data frame with observations on the following 15 variables:

Report_Date Date on which the hydrological report was recorded (YYYY-MM-DD).

Report_Time Time at which the report was generated.

River_Basin Name of the main river basin associated with the observation site.

Tributory_River Name of the tributary river connected to the gauging station.

Gauging_Station Name or identifier of the station where hydrological measurements were taken.

Unit Unit of measurement used for reporting water level (e.g., meters).

AlertLevel Water level threshold at which an alert is declared.

MinorFloodLevel Water level threshold indicating the onset of minor flooding.

MajorFloodLevel Water level threshold indicating the onset of major flooding.

Remarks Additional notes, operational comments, or contextual information related to river or weather conditions.

WaterLevelRising_or_Falling Indicator describing whether the current water level is rising, falling, or stable.

Water_Level_Time Specific time at which the corresponding water level measurement was taken.

Water_Level Recorded water level at the specified measurement time.

RFmm Rainfall amount (in millimetres) measured during the specified recording period.

RFmm_measured_at Time at which the rainfall measurement (RFmm) was taken.

Water_Level_DateTime Recorded water level at the specified measurement time in Date and Time format

Source

Disaster Management Center, Sri Lanka (Based on River Water Leve and Flood Warning reports at https://www.dmc.gov.lk/index.php?option=com_dmcreports&view=reports&Itemid=277&report_type_id=6&lang=en)

`load_dashboard` *Load dashboard*

Description

Load to explore weather- and disaster-related information associated with the Ditwah Storm

Usage

```
load_dashboard()
```

Value

open dashboard

`realtime_waterlevel_kelani_ganga`
Real-time water level data for Kelani river basin

Description

This dataset contains real-time rainfall and river water-level observations from hydrometric stations in the Kelani river basin. The data were obtained from dashboard by Hydrology and Disaster Management Division, Irrigation Department, Sri Lanka.

Usage

```
realtime_waterlevel_kelani_ganga
```

Format

A data frame with the following 10 variables:

Date Date of the observation

Time Hour of the day

RiverBasin Name of the river basin.

HydrometricStation Name of the hydrometric (gauging) station.

Rainfall_mm Rainfall recorded at the station (in millimetres).

RiverWaterLevel Observed river water level.

RiverWaterLevel_Unit Unit of measurement for the water level (e.g.,m, ft).

Alert_level Official alert level corresponding to the observed water level.

Minor_Flood_Level Threshold level that triggers a minor flood alert.

Major_Flood_level Threshold level that triggers a major flood alert.

Source

Hydrology and Disaster Management Division, Irrigation Department, Sri Lanka (accessed: 30 Nov 2025)

`situation_report_30NOV1600`

Disaster impact summary by district on 2025.11.30 at 16.00 p.m

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Description

This dataset is part of the package to support real-time monitoring, analysis, and visualisation of disaster impacts. The data have been cleaned and transformed into a tidy format for ease of use in statistical and graphical applications.

Usage

```
situation_report_30NOV1600
```

Format

A data frame with one row per district and the following variables:

Districts Character. Name of the administrative district.

Families Integer. Number of families affected in the district.

Persons Integer. Total number of persons affected.

Deaths Integer. Number of confirmed deaths reported.

Missing Integer. Number of individuals reported missing.

Safety_centres Integer. Number of active safety centres operating in the district.

Families_safetycentres Integer. Number of families currently residing in safety centres.

Persons_safetycentres Integer. Number of individuals currently residing in safety centres.

Details

This dataset provides a district-level summary of the impacts of a disaster event in Sri Lanka. It includes the number of affected families, persons, deaths, missing individuals, and details of safety centres established for relief and shelter. Situation Report on 2025.11.30 at 16.00 p.m

Source

Disaster Management Centre, Sri Lanka

Examples

```
# Load the data
data(situation_report_30NOV1600)

# View the first few rows
head(situation_report_30NOV1600)
```

---

weather_report *Daily rainfall data during the Ditwah storm period*

Description

This dataset contains daily rainfall information downloaded from the Department of Meteorology, Sri Lanka. The data includes station details, reporting times, and recorded rainfall amounts.

Usage

```
data(weather_report)
```

Format

A data frame with the following columns:

Date_downloaded Date on which the data was downloaded (YYYY-MM-DD).

Reporting_Time Time of rainfall reporting (HH:MM).

Type Type of station (e.g., "Rainfall", "Agro", etc.).

Name Name of the meteorological or rainfall station.

Daily_Rainfall_mm Recorded daily rainfall in millimetres.

Source

Department of Meteorology, Sri Lanka https://meteo.gov.lk/

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