02 : 19 : 03 : 54
DAY   HRS   MIN   SEC

HackerEarth Machine Learning challenge: World Water Day

LIVE

Mar 22, 2025, 12:30 AM GMT (Europe/Dublin) - Apr 01, 2025, 07:29 PM IST (Europe/Dublin)

INSTRUCTIONS   PROBLEMS   SUBMISSIONS   LEADERBOARD   ANALYTICS   JUDGE

← Problems / Smart water monitoring systems

Smart water monitoring systems

Max. score: 100

Water scarcity is an increasingly global issue, with urban households playing a major role in water wastage due to inefficient consumption habits. Traditional water meters provide only total usage data without insights into consumption patterns, making it difficult for homeowners to optimize their water usage effectively. Smart water monitoring systems, powered by machine learning, can help households predict their water consumption and adopt conservation measures.

Task

The goal of this project is to develop a Machine Learning model that predicts daily water consumption for individual households based on historical usage patterns, household characteristics, weather conditions, and conservation behaviors.

Dataset description

The dataset folder contains the following files:

- **train.csv**: 14000 x 12
- **test.csv**: 6000 x 11
- **sample_submission.csv**: 5 x 2

The columns provided in the dataset are as follows:

Column name	Description
Timestamp	Represents a unique timestamp of an entry
Residents	Represents the number of people living in the household
Apartment_Type	Represents the type of apartment
Temperature	Represents the average temperature of that time period
Humidity	Represents the average humidity of that time period
Water_Price	Represents the water price for that time period
Period_Consumption_Index	Represents the relative water usage for each 8-hour period
Income_Level	Represents the income level of household
Guests	Represents the number of guests

Amenities	Represents the types of amenities available in the household
Appliance_Usage	Represents whether water appliances are being used or not
Water_Consumption	Represents the consumption of water in that period

Evaluation metric

```
score = max(0,100- np.sqrt(metrics.mean_squared_error(actual,predicted)))
```

Result submission guidelines

- The index is "Timestamp" and the target is the "Water_Consumption" column.
- The submission file must be submitted in .csv format only.
- The size of this submission file must be 6000 x 2.

Note: Ensure that your submission file contains the following:

- The correct index values are as per the test file.
- The correct names of columns as provided in the sample_submission.csv file.

Download dataset

Upload Prediction File

Please upload the prediction file in the format as stated in the problem.

Choose file No file chosen

Submit & Evaluate

Upload Source Files

You need to submit a zip or tar archive consisting of a text file explaining your approach, details about feature engineering, tools you used and the relevant source files.

Choose file No file chosen

Upload

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