# VIT ®

## Vellore Institute of Technology
### (Deemed to be University under section 3 of UGC Act, 1956)

## School of Computer Science and Engineering
### CSE3046-Programming for Data Science
### Process: Obtain Data from Various Resources

## Assignment-5

# Learning Models

**NAME : D VASANTH KUMAR**
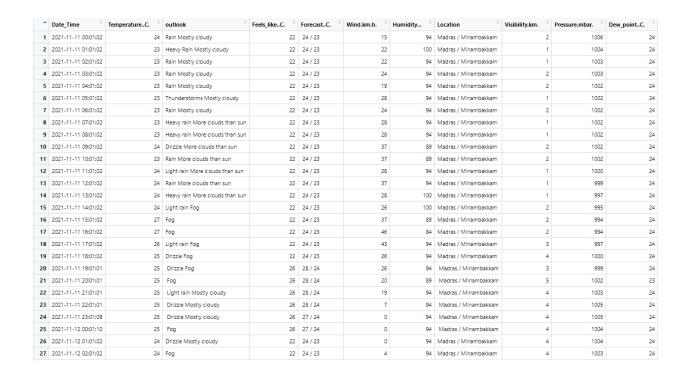
**REG NO: 19BDS0083**

**Submitted Date: 17/11/2021**

**Course Instructor: Dr. Anthoniraj A**

# Retrieve the data set from the following URL,

*THE DATA SET:*

https://raw.githubusercontent.com/anthoniraj/dsr_datasets_basic/main/19BDS0083.csv

| | Date_Time | Temperature..C. | outlook | Feels_like..C. | Forecast..C. | Wind.km.h. | Humidity... | Location | Visibility.km. | Pressure.mbar. | Dew_point..C. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2021-11-11 00:01:02 | 24 | Rain Mostly cloudy | 22 | 24 / 23 | 15 | 94 | Madras / Minambakkam | 2 | 1006 | 24 |
| 2 | 2021-11-11 01:01:02 | 23 | Heavy Rain Mostly cloudy | 22 | 24 / 23 | 22 | 100 | Madras / Minambakkam | 1 | 1004 | 24 |
| 3 | 2021-11-11 02:01:02 | 23 | Rain Mostly cloudy | 22 | 24 / 23 | 22 | 94 | Madras / Minambakkam | 1 | 1003 | 24 |
| 4 | 2021-11-11 03:01:02 | 23 | Rain Mostly cloudy | 22 | 24 / 23 | 24 | 94 | Madras / Minambakkam | 2 | 1003 | 24 |
| 5 | 2021-11-11 04:01:02 | 23 | Rain Mostly cloudy | 22 | 24 / 23 | 19 | 94 | Madras / Minambakkam | 2 | 1002 | 24 |
| 6 | 2021-11-11 05:01:02 | 23 | Thunderstorms Mostly cloudy | 22 | 24 / 23 | 28 | 94 | Madras / Minambakkam | 1 | 1002 | 24 |
| 7 | 2021-11-11 06:01:02 | 23 | Rain Mostly cloudy | 22 | 24 / 23 | 24 | 94 | Madras / Minambakkam | 2 | 1002 | 24 |
| 8 | 2021-11-11 07:01:02 | 23 | Heavy rain More clouds than sun | 22 | 24 / 23 | 28 | 94 | Madras / Minambakkam | 1 | 1002 | 24 |
| 9 | 2021-11-11 08:01:02 | 23 | Heavy rain More clouds than sun | 22 | 24 / 23 | 28 | 94 | Madras / Minambakkam | 1 | 1002 | 24 |
| 10 | 2021-11-11 09:01:02 | 24 | Drizzle More clouds than sun | 22 | 24 / 23 | 37 | 89 | Madras / Minambakkam | 2 | 1002 | 24 |
| 11 | 2021-11-11 10:01:02 | 23 | Rain More clouds than sun | 22 | 24 / 23 | 37 | 89 | Madras / Minambakkam | 2 | 1002 | 24 |
| 12 | 2021-11-11 11:01:02 | 24 | Light rain More clouds than sun | 22 | 24 / 23 | 28 | 94 | Madras / Minambakkam | 1 | 1000 | 24 |
| 13 | 2021-11-11 12:01:02 | 24 | Rain More clouds than sun | 22 | 24 / 23 | 37 | 94 | Madras / Minambakkam | 1 | 999 | 24 |
| 14 | 2021-11-11 13:01:02 | 24 | Heavy rain More clouds than sun | 22 | 24 / 23 | 28 | 100 | Madras / Minambakkam | 1 | 997 | 24 |
| 15 | 2021-11-11 14:01:02 | 24 | Light rain Fog | 22 | 24 / 23 | 26 | 100 | Madras / Minambakkam | 2 | 995 | 24 |
| 16 | 2021-11-11 15:01:02 | 27 | Fog | 22 | 24 / 23 | 37 | 89 | Madras / Minambakkam | 2 | 994 | 24 |
| 17 | 2021-11-11 16:01:02 | 27 | Fog | 22 | 24 / 23 | 46 | 84 | Madras / Minambakkam | 2 | 994 | 24 |
| 18 | 2021-11-11 17:01:02 | 26 | Light rain Fog | 22 | 24 / 23 | 43 | 94 | Madras / Minambakkam | 3 | 997 | 24 |
| 19 | 2021-11-11 18:01:02 | 25 | Drizzle Fog | 22 | 24 / 23 | 26 | 94 | Madras / Minambakkam | 4 | 1000 | 24 |
| 20 | 2021-11-11 19:01:01 | 25 | Drizzle Fog | 26 | 28 / 24 | 26 | 94 | Madras / Minambakkam | 3 | 999 | 24 |
| 21 | 2021-11-11 20:01:01 | 25 | Fog | 26 | 28 / 24 | 20 | 89 | Madras / Minambakkam | 5 | 1002 | 23 |
| 22 | 2021-11-11 21:01:01 | 25 | Light rain Mostly cloudy | 26 | 28 / 24 | 19 | 94 | Madras / Minambakkam | 4 | 1003 | 24 |
| 23 | 2021-11-11 22:01:01 | 25 | Drizzle Mostly cloudy | 26 | 28 / 24 | 7 | 94 | Madras / Minambakkam | 4 | 1005 | 24 |
| 24 | 2021-11-11 23:01:09 | 25 | Drizzle Mostly cloudy | 26 | 27 / 24 | 0 | 94 | Madras / Minambakkam | 4 | 1005 | 24 |
| 25 | 2021-11-12 00:01:10 | 25 | Fog | 26 | 27 / 24 | 0 | 94 | Madras / Minambakkam | 4 | 1004 | 24 |
| 26 | 2021-11-12 01:01:02 | 24 | Drizzle Mostly cloudy | 22 | 24 / 23 | 0 | 94 | Madras / Minambakkam | 4 | 1004 | 24 |
| 27 | 2021-11-12 02:01:02 | 24 | Fog | 22 | 24 / 23 | 4 | 94 | Madras / Minambakkam | 4 | 1003 | 24 |

## ACTIVITY DESCRIPTION:

➢ Read the data set from the URL and converting it into data frame

➢ summarize the data set for checking number of NA's

➢ check for structural errors

➢ Build a data set for weather information of your state capital city for 14 days.

The activity is to collect the data from timeanddate.com for 14 days using web scrapping and creating a dataset from the observed.

**ALGORITHM TO BE USED:**

## Decision Tree Regression

Decision tree builds regression or classification models in the form of a tree structure. It breaks down a dataset into smaller and smaller subsets while at the same time an associated decision tree is incrementally developed. The final result is a tree with decision nodes and leaf nodes.

- Decision trees are predictive models that use a set of binary rules to calculate a target value.
- Each individual tree is a fairly simple model that has branches, nodes and leaves.

## SAMPLE CODE:

```
#--------------------------------------------------------------------------------------------------------------------------
#WRITING META DATA

#USER INFROMATION : 19BDS0083 D VASANTH KUMAR

#DATA SOURCE : timeanddate

#OWNED BY: timeanddate.com

#Activity description: The activity is to collect the data from timeanddate.com for 14 days  using web scrapping and creating a dataset from the observed.

#Description:timeanddate's forecasts and warning services are based on weather information derived from numerous sources,
#including weather observations and data gathered by the National Weather Service and meteorological organizations. Using this webservice the
# data set for weather information of my state capital city for 14 days is collected. The data is collected in regular interval of time.
#The report of the weather is collected each hour for 14 days and stored in as a dataset

#Data shape:

#TAGS FOR THE DATA SET : Web Scarpping,time-series

#--------------------------------------------------------------------------------------------------------------------------
```