Ratnagiri Education Society's

R. P. GOGATE COLLEGE OF ARTS AND SCIENCE AND

R. V. JOGALEKAR COLLEGE

OF COMMERCE.

Department Of Information Technology

Practical 8

Roll No: TTA01 **Class: TY BSc IT**

Subject: Business Intelligence **Semester: 6**

Date: **Sign:**

Aim: Data Analysis using Time Series Analysis

Time series is a series of data points in which each data point is associated with a timestamp. A simple example is the price of a stock in the stock market at different points of time on a given day. Another example is the amount of rainfall in a region at different months of the year. R language uses many functions to create, manipulate and plot the time series data. The data for the time series is stored in an R object called time-series object. It is also a R data object like a vector or data frame.

The time series object is created by using the ts() function.

- Syntax

  timeseries.object.name <- ts(data, start, end, frequency)

Following is the description of the parameters used −

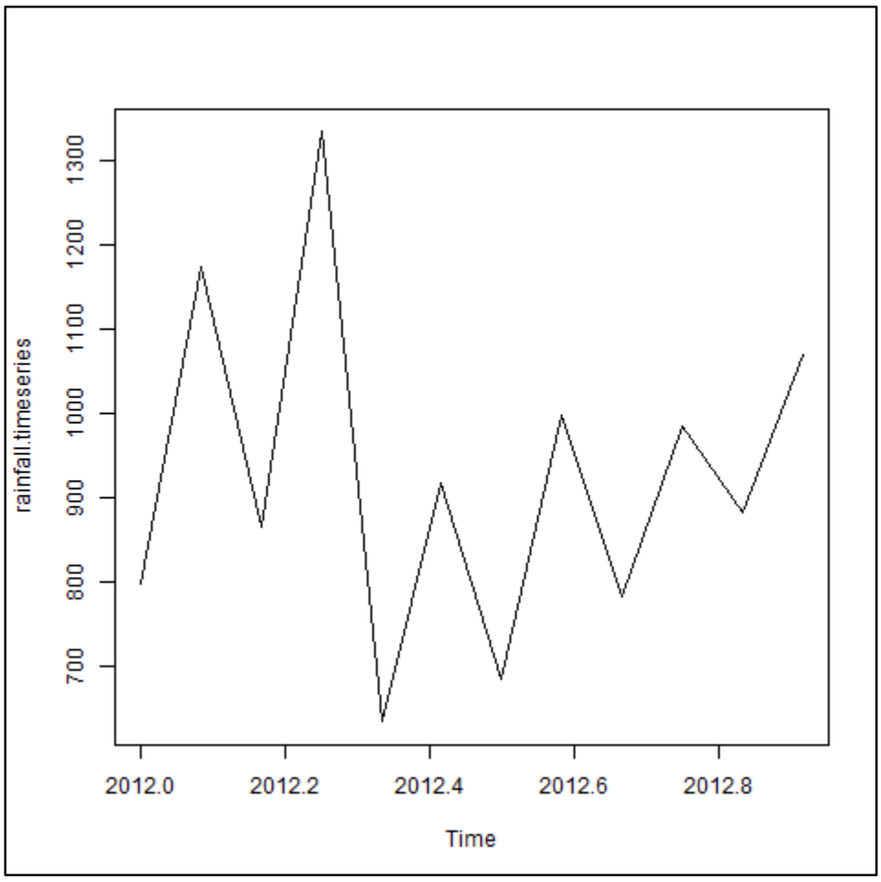
- data is a vector or matrix containing the values used in the time series.
- start specifies the start time for the first observation in time series.
- end specifies the end time for the last observation in time series.
- frequency specifies the number of observations per unit time.

➢ Example

Consider the annual rainfall details at a place starting from January 2012. We create an R time series object for a period of 12 months and plot it.

```
> rainfall <-
+ c(799,1174.8,865.1,1334.6,635.4,918.5,685.5,998.6,784.2,985,882.8,1071)
> rainfall.timeseries <- ts(rainfall,start = c(2012,1),frequency = 12)
> print(rainfall.timeseries)
        Jan    Feb    Mar    Apr    May    Jun    Jul    Aug    Sep    Oct
2012  799.0 1174.8  865.1 1334.6  635.4  918.5  685.5  998.6  784.2  985.0
        Nov    Dec
2012  882.8 1071.0
> png(file = "rainfall.png")
> plot(rainfall.timeseries)
> dev.off()
null device
          1
```

Output:-


rainfall.timeseries
700
800
900
1000
1100
1200
1300
2012.0
2012.2
2012.4
2012.6
2012.8
Time