TimeSeries_AirPassengers

```
## Main Source and inspiration == http://www.maths.adelaide.edu.au/emac2009/
#Introductory Time Series with R
#by Paul S.P. Cowpertwait and Andrew Viggo Metcalfe
#Springer. ISBN: 978-0-387-88697-8
# All Text below within the QUOTE and UNQUOTE blocks is from this SPRINGER text mentioned above

library(ggfortify)
```

```
## Loading required package: ggplot2
```

```
library(tseries)
library(forecast)
data(AirPassengers)
ts_AirPassengers <- AirPassengers
class(ts_AirPassengers);head(ts_AirPassengers);tail(ts_AirPassengers);dim(ts_AirPassengers)
```

```
## [1] "ts"
```

```
##      Jan Feb Mar Apr May Jun
## 1949 112 118 132 129 121 135
```

```
##      Jul Aug Sep Oct Nov Dec
## 1960 622 606 508 461 390 432
```

```
## NULL
```

```
# Dimensions = NULL ??
# Check for Missing or NA
sum(is.na(ts_AirPassengers)) # No Missing values - No NA
```

```
## [1] 0
```

```
#
```

Check Frequency of TimeSeries and the Cyclic part of the TS
Check the summary of TS data
Plot Raw TimeSeries using the inbuilt base PLOT
...
...

```
frequency(ts_AirPassengers);cycle(ts_AirPassengers)
```

```
## [1] 12
```

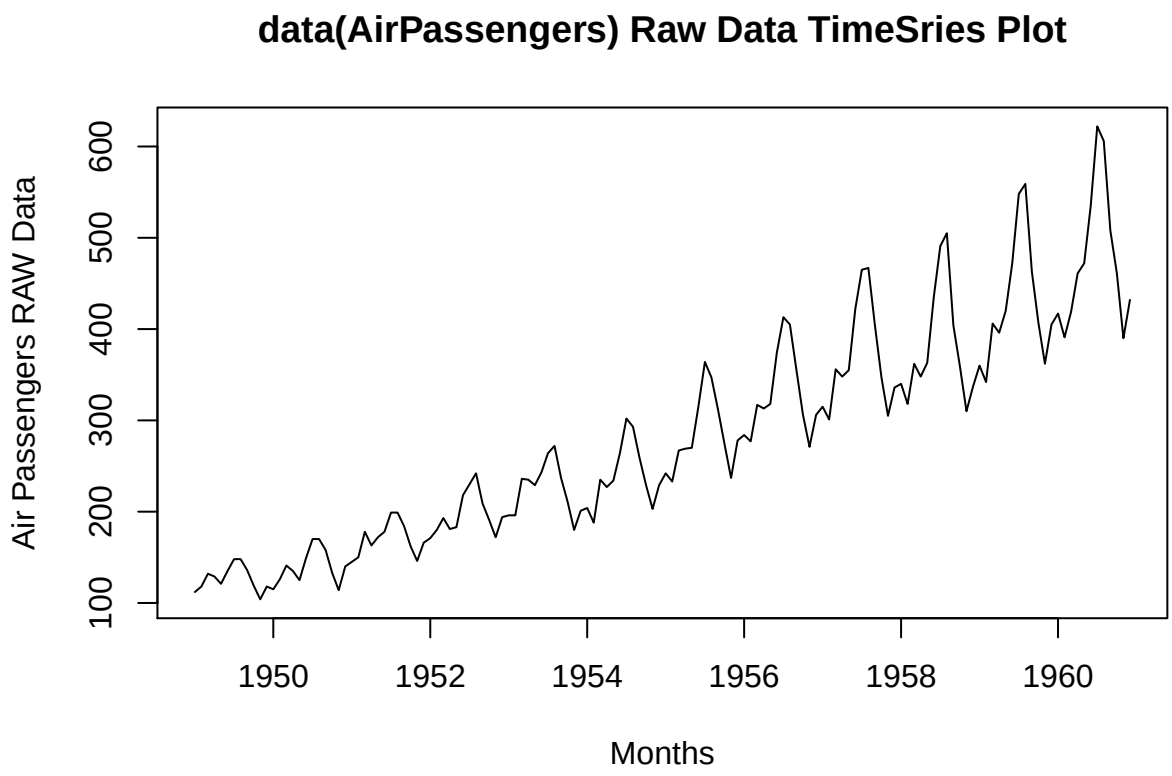
```
##      Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
## 1949   1   2   3   4   5   6   7   8   9  10  11  12
## 1950   1   2   3   4   5   6   7   8   9  10  11  12
## 1951   1   2   3   4   5   6   7   8   9  10  11  12
## 1952   1   2   3   4   5   6   7   8   9  10  11  12
## 1953   1   2   3   4   5   6   7   8   9  10  11  12
## 1954   1   2   3   4   5   6   7   8   9  10  11  12
## 1955   1   2   3   4   5   6   7   8   9  10  11  12
```

```
## 1956   1   2   3   4   5   6   7   8   9  10  11  12
## 1957   1   2   3   4   5   6   7   8   9  10  11  12
## 1958   1   2   3   4   5   6   7   8   9  10  11  12
## 1959   1   2   3   4   5   6   7   8   9  10  11  12
## 1960   1   2   3   4   5   6   7   8   9  10  11  12
```

```
summary(ts_AirPassengers)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   104.0   180.0   265.5   280.3   360.5   622.0
```

```
plot(ts_AirPassengers,xlab="Months", ylab = "Air Passengers RAW Data",
     main=("data(AirPassengers) Raw Data TimeSries Plot"))
```



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```
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```
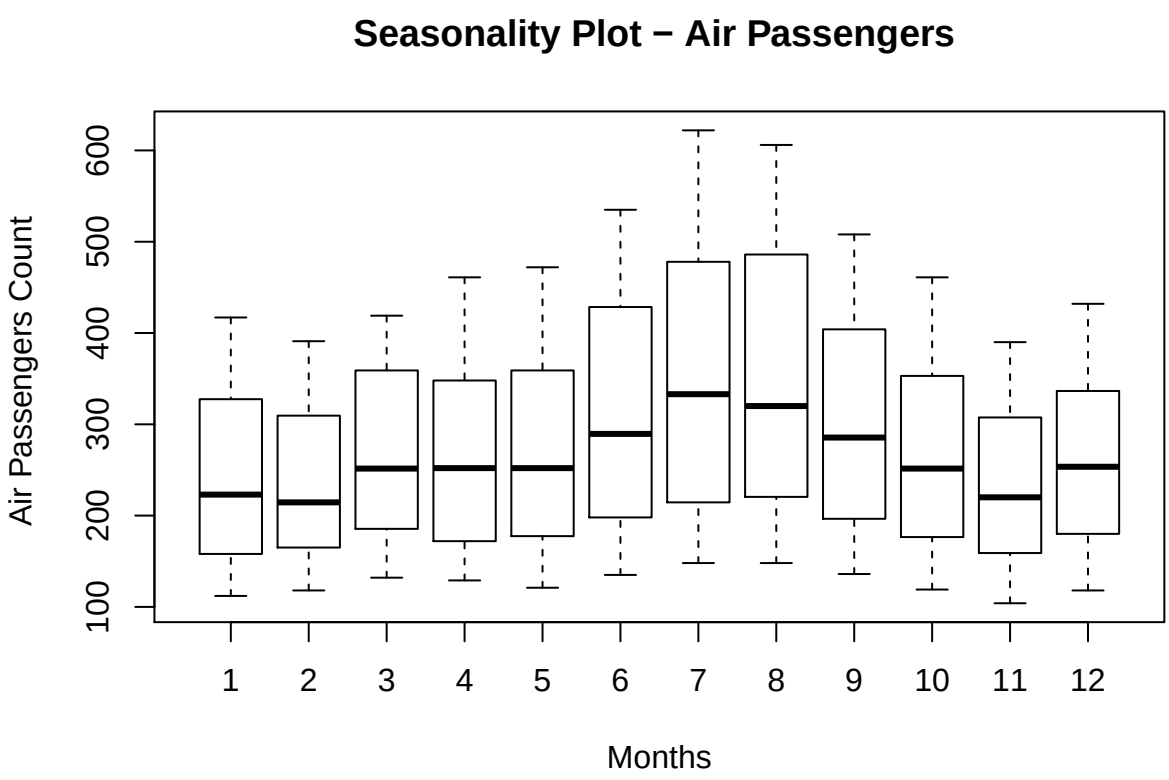

```
#Seasonality Plot - Air Passengers

boxplot(ts_AirPassengers~cycle(ts_AirPassengers),xlab="Months", ylab = "Air Passengers Count " ,
        main ="Seasonality Plot - Air Passengers ")
```


Seasonality Plot − Air Passengers
Air Passengers Count
100
200
300
400
500
600
1
2
3
4
5
6
7
8
9
10
11
12
Months