The aim of the following experiment is to a time series analysis using the air passengers dataset.

# SOURCE CODE:

data("AirPassengers")

?AirPassengers

AP <- AirPassengers View(AP)

str(AP) head(AP)

ts(AP, frequency = 12, start = c(1949,1))

#decomposiotion of additive time series decompo <- decompose(AP)

plot( decompo$figure, type = 'b',

xlab = 'Month',

ylab = 'Seasonality Index', las = 2

)

plot(decompo)

library(forecast)

modeling <- auto.arima(AP) attributes(modeling)

acf(modeling$residuals, main = 'Correlogram 20bds0387') pacf(modeling$residuals, main = 'Partial Correlogram 20bds0387')

#Ljung-Box test

Box.test(modeling$residuals, lag = 20, type = 'Ljung-Box')

#residual plot y <- hist(

modeling$residuals, col = 'green',

xlab = 'Error',

main = "Histogram of residuals 20bds0387", freq = FALSE

)

lines(density(model$residuals))

#forcast

f <- forecast(modeling, 48) library(ggplot2) autoplot(f)

accuracy(f)

# OUTPUT:

























