**Tamim IQbal**

**Plotting Time Series:**

> tamimVector<- c(0,0,0,0,0,4,0,0,118,0,0,137,10,0,0,112,0,65,0,0,0,0,63,0,0,0,0,253,0,0,0,0,0,0,0,58,36,0,114,43,99,0,0,0,157,0,60,0,4,138,196,30,0,107,143,0,0,0,0,162,108,0,0,0,0,0,0,59,300,0,11,24,0,0,0,278,147,0,160,26,21,63,47,65,0,0,57,62,111,52,0,68,0,0,0,0,93)

> print(tamimVector)

[1] 0 0 0 0 0 4 0 0 118 0 0 137 10 0 0 112 0 65 0 0 0 0 63

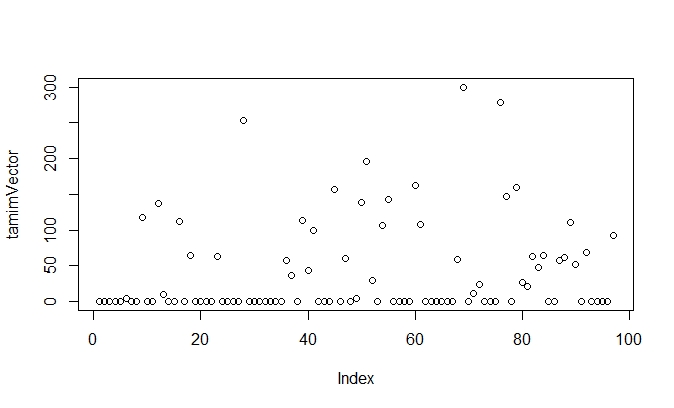
[24] 0 0 0 0 253 0 0 0 0 0 0 0 58 36 0 114 43 99 0 0 0 157 0

[47] 60 0 4 138 196 30 0 107 143 0 0 0 0 162 108 0 0 0 0 0 0 59 300

[70] 0 11 24 0 0 0 278 147 0 160 26 21 63 47 65 0 0 57 62 111 52 0 68

[93] 0 0 0 0 93

> plot(tamimVector)



> tamimTS<- ts(tamimVector,start=c(2007,1),frequency = 12)

> print(tamimTS)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2007 0 0 0 0 0 4 0 0 118 0 0 137

2008 10 0 0 112 0 65 0 0 0 0 63 0

2009 0 0 0 253 0 0 0 0 0 0 0 58

2010 36 0 114 43 99 0 0 0 157 0 60 0

2011 4 138 196 30 0 107 143 0 0 0 0 162

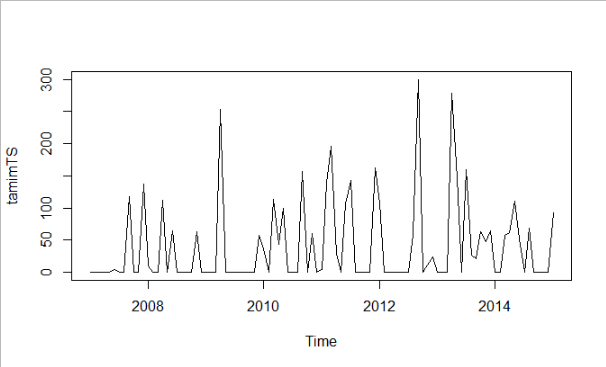
2012 108 0 0 0 0 0 0 59 300 0 11 24

2013 0 0 0 278 147 0 160 26 21 63 47 65

2014 0 0 57 62 111 52 0 68 0 0 0 0

2015 93

> plot.ts(tamimTS)



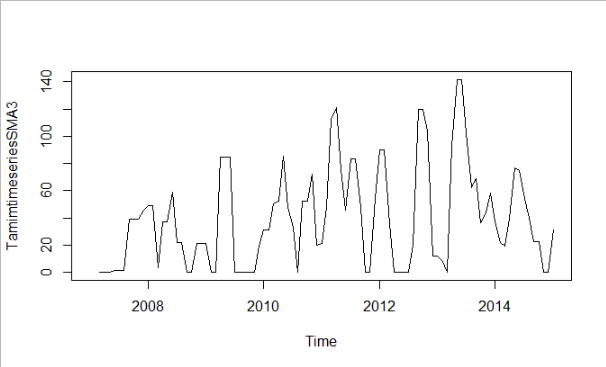
## Decomposing Time Series

### Decomposing Non-Seasonal Data

>library(TTR)

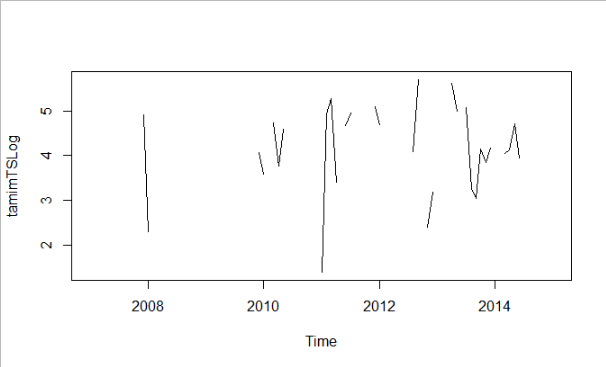
> TamimtimeseriesSMA3 <- SMA(tamimTS,n=3)

> plot(TamimtimeseriesSMA3)



> tamimTSLog<- log(tamimTS)

> plot.ts(tamimTSLog)



### Decomposing Seasonal Data

> Tamimtimeseriescomponents <- decompose(tamimTS)

> plot(Tamimtimeseriescomponents)

