MarketModel1

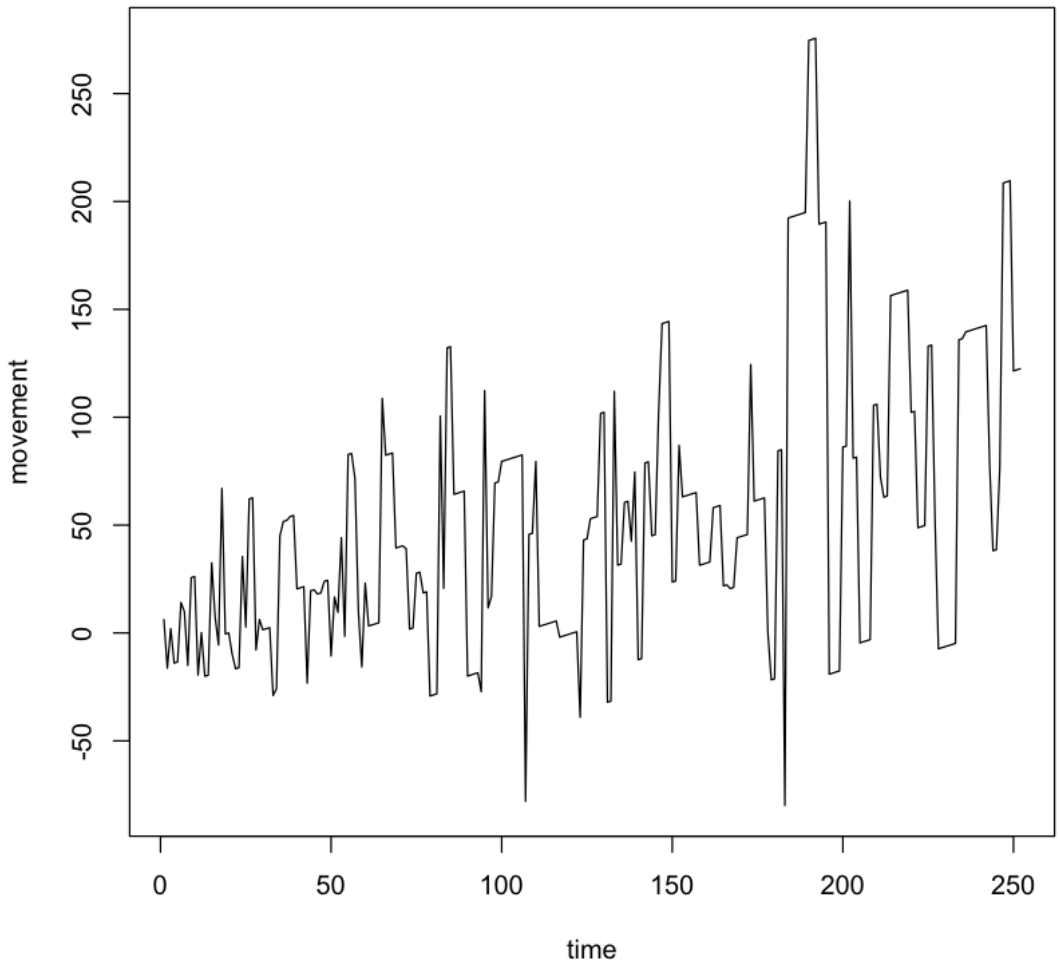
March 29, 2018

In [33]:
```
time = seq(1,252)
```

In [39]:
```
#lambda avg(stock)
lambda <- 23
jump_at_t = rep(0, 252)
for (t in 1:length(time)){
    jump_at_t[t] <- rpois(1, lambda*t)
}
```

In [40]:
```
movement <- rep(0,252)
max <- -1
counter <- 1
for (jump in jump_at_t){
    if (jump > max) {
        max <- jump
        x <- rnorm(jump)
        movement[counter] <- sum(x)
    }
    else {
        movement[counter] <- movement[counter - 1]
    }
    counter <- counter + 1
}
```

In [41]:
```
#beta mean
beta <- 1/2
movement <- movement + beta * time
plot(x = time, y  = movement, type = 'l')
```

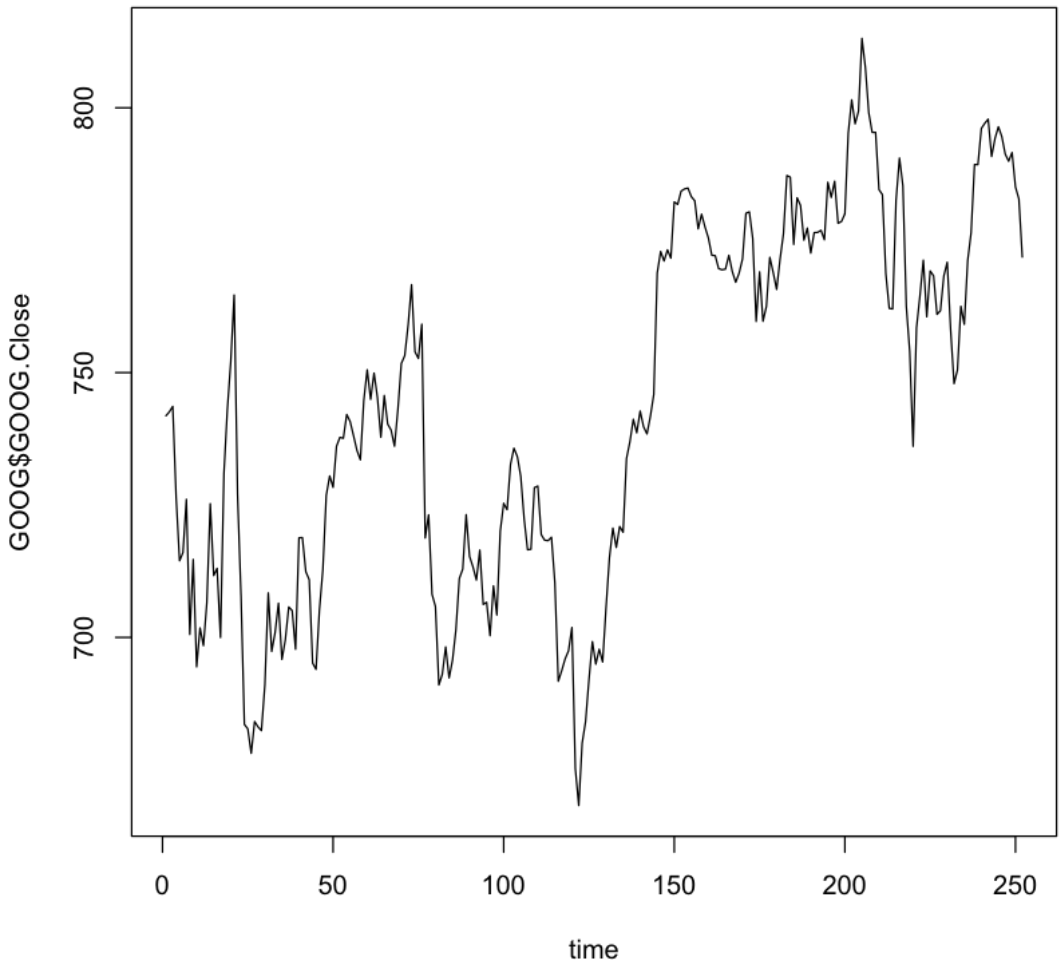



```
In [9]: library("quantmod")
        getSymbols('GOOG', src = 'yahoo', from = '2016-01-01', to = '2017-01-01')
        head(GOOG)
```

'GOOG'

	GOOG.Open	GOOG.High	GOOG.Low	GOOG.Close	GOOG.Volume	GOOG.Adjusted
2016-01-04	743.00	744.060	731.258	741.84	3272800	741.84
2016-01-05	746.45	752.000	738.640	742.58	1950700	742.58
2016-01-06	730.00	747.180	728.920	743.62	1947000	743.62
2016-01-07	730.31	738.500	719.060	726.39	2963700	726.39
2016-01-08	731.45	733.230	713.000	714.47	2450900	714.47
2016-01-11	716.61	718.855	703.540	716.03	2089300	716.03

In [7]: `plot(x = time, y = GOOG$GOOG.Close, type = 'l')`



In [8]: `mean(GOOG$GOOG.Close)`

743.486706698413