Forcasting

Create time series object using ts function

```
data(Nile)
nile.ts<-ts(Nile,start=1,frequency=10)
summary(nile.ts)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   456.0   798.5   893.5   919.4  1032.5  1370.0
```

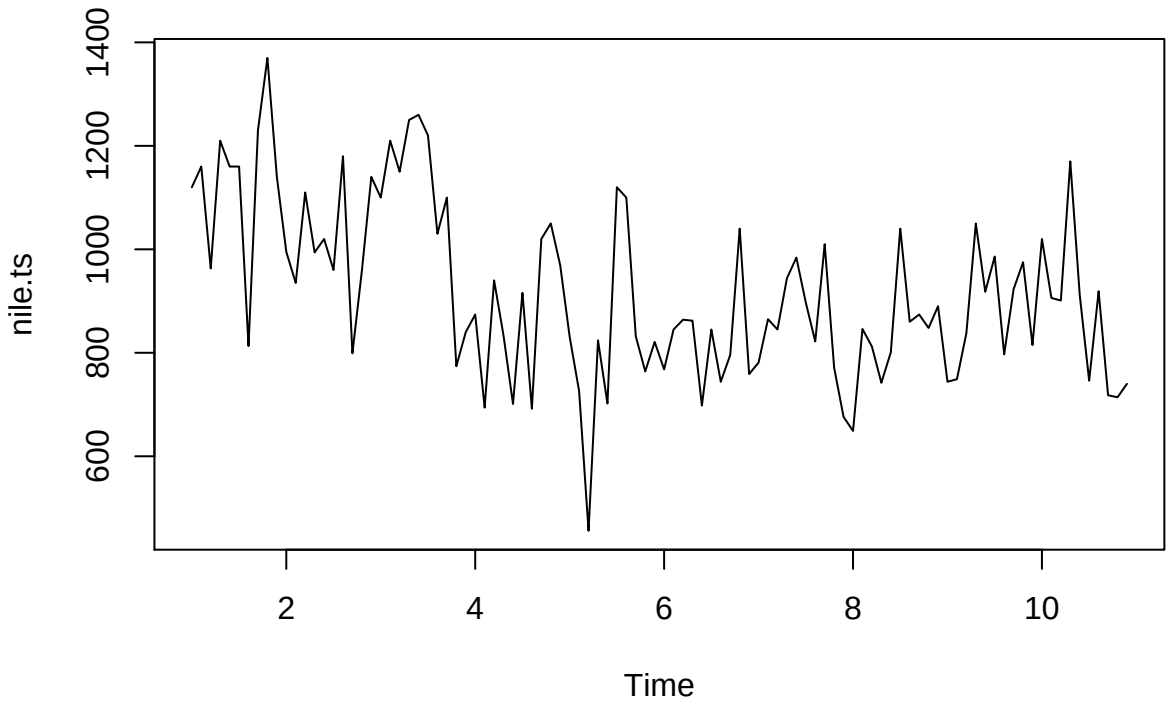
Create Hold-Winters object.

```
nile.hw1<-HoltWinters(nile.ts,gamma=FALSE)
nile.hw1$SSE
```

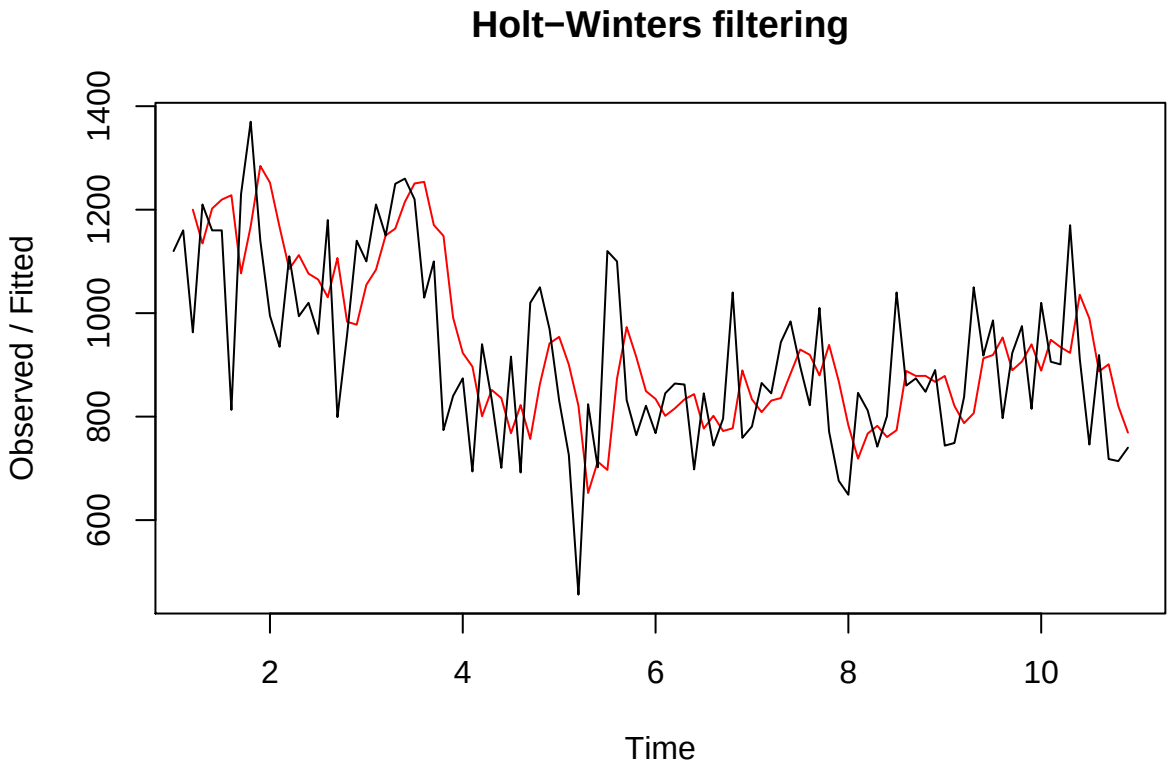
```
## [1] 2267504
```

Plot Holt-Winters function

```
plot(nile.ts)
```

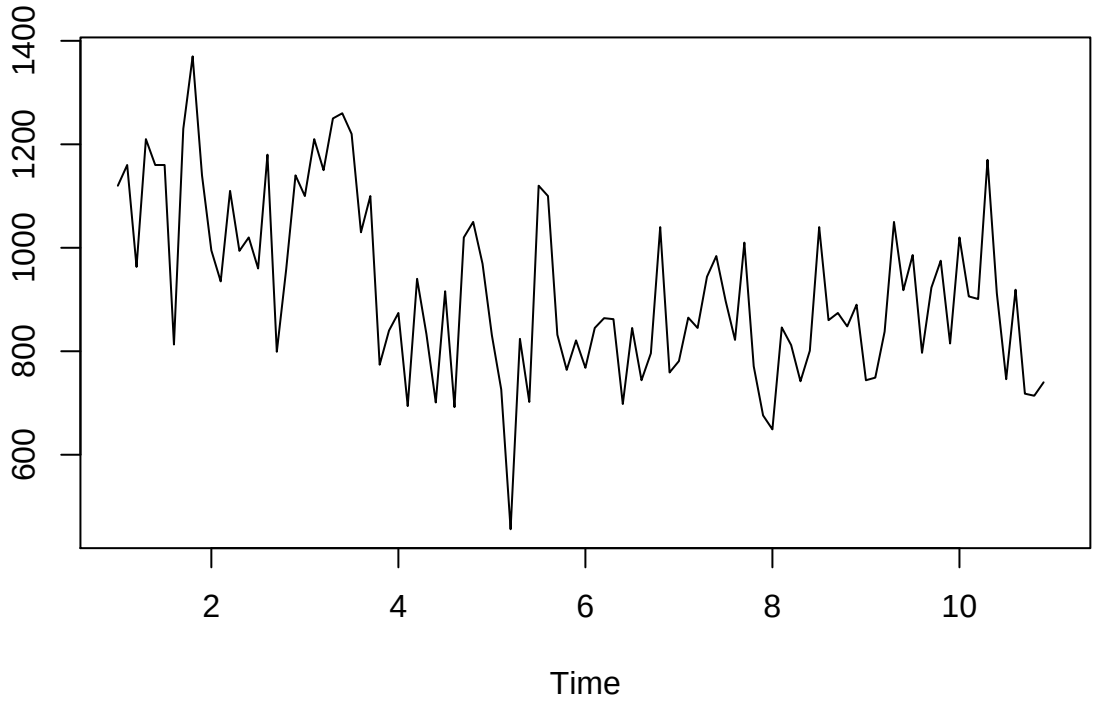


```
plot(nile.hw1)
```



predict future values using the Holt-Winters

```
nile.p<-predict(nile.hw1,nhead=10)
ts.plot(nile.ts,nile.p)
```



Set alpha=0.4,beta=FALSE,gamma=FALSE

```
nile.hw2<-HoltWinters(nile.ts,gamma=FALSE,beta=FALSE,alpha=0.3)
nile.hw2$SSE
```

```
## [1] 2043114
```

Set alpha=0.1,beta=FALSE,gamma=FALSE

```
nile.hw3<-HoltWinters(nile.ts,gamma=FALSE,beta=FALSE,alpha=0.1)
nile.hw3$SSE
```

```
## [1] 2128085
```

```
nile.hw4<-HoltWinters(nile.ts,gamma=FALSE,beta=TRUE,alpha=0.3)
nile.hw4$SSE
```

```
## [1] 3480485
```

```
nile.hw5<-HoltWinters(nile.ts,gamma=TRUE,beta=FALSE,alpha=0.3)
nile.hw5$SSE
```

```
## [1] 3706194
```

Above are 5 HoltWinters models,we can see hw2 has lowest SSE which means hw2 model is the best forcasting model among these 5 models.