spect

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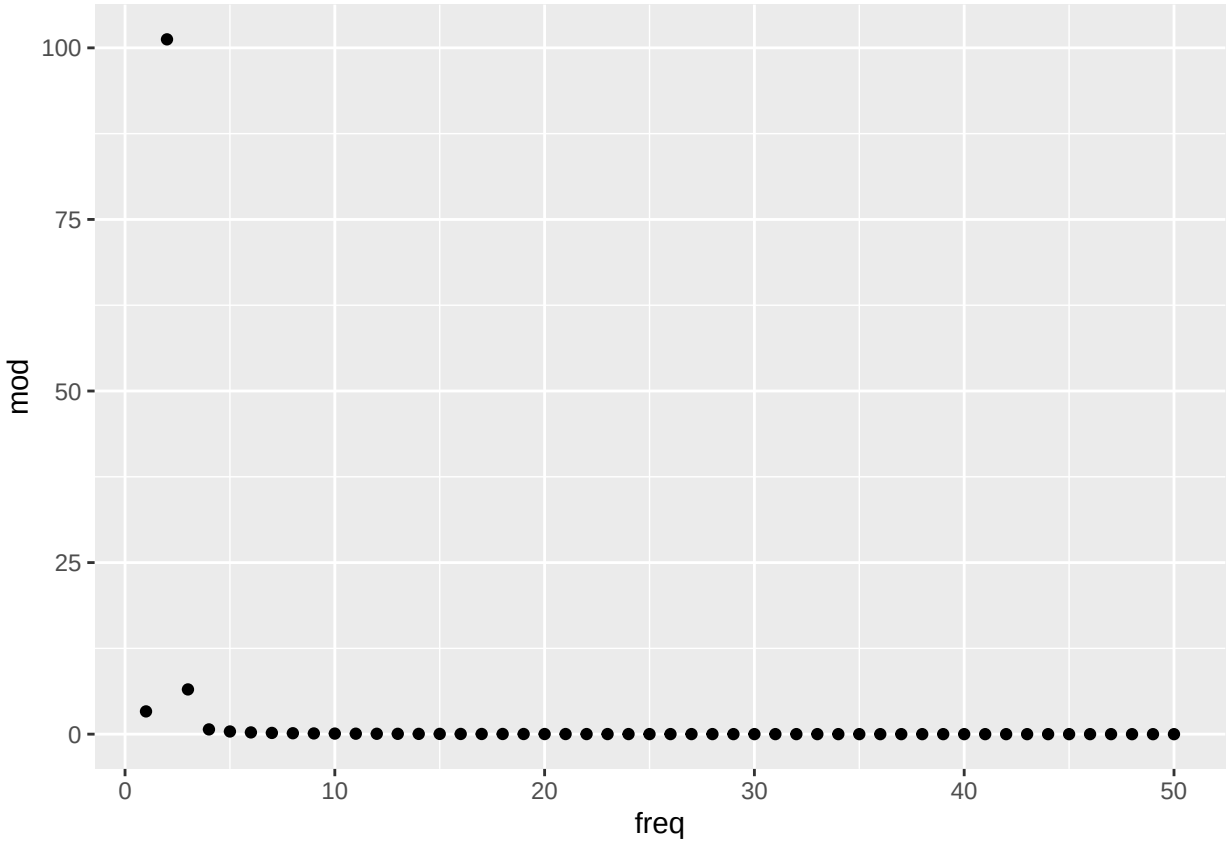
R Generate signal and its fft

```
../bin/spect sin
```

Plot the signal freq analysis

```
library(ggplot2)
signalfft<-read.csv("sin.csv",header=FALSE,sep=",")
names(signalfft)<-c("freq","rex","imx","mod","arg")

ggplot(signalfft,aes(freq,mod))+geom_point()
```



The top 5 frequencies are

```
head(signalfft,5)
```

```
##   freq        rex        imx        mod       arg
## 1    1  1.9998800   2.647370   3.317850  0.923835
## 2    2  0.0823412 101.241000 101.241000  1.569980
## 3    3  6.3060200  -1.649080   6.518080 -0.255780
## 4    4 -0.1543650  -0.677560   0.694922 -1.794800
## 5    5 -0.0847374  -0.383826   0.393069 -1.788080
```

Reconstructed waveform

```
signal<-read.csv("sin_re.csv",header=FALSE,sep=",")
names(signal) <- c("x","y")
ggplot(signal,aes(x=x,y=y))+geom_line()
```