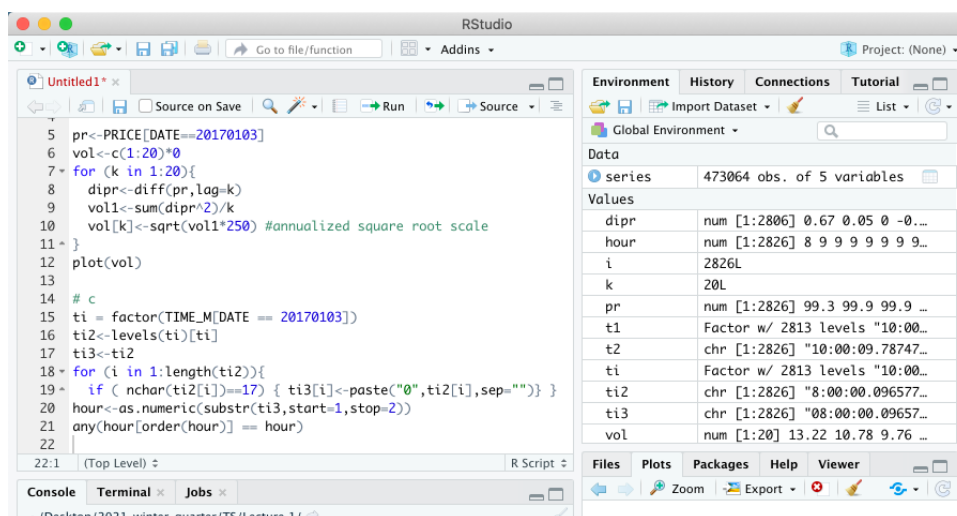# Homework 1

Name: Zhaoyang Chen
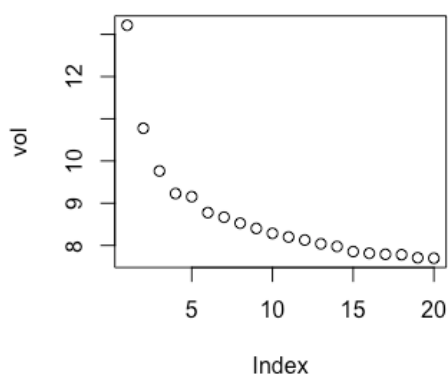
UID: 12245353

Question 1

A

Here is the screenshot of the R studio in my laptop.

B

The plot generated by the code is:

The price is a semimartigale because the volatility converges to a constant as the sampling frequency increases and that means we have adequate information to predict the price initially but we cannot use the prior information to tell how the price will change in the long run.

C

I reorder the time to see if anything has been changed and the result is no, which means the original data is in the right time order.

```
> any(series$PRICE == series_0$PRICE)
[1] TRUE
```