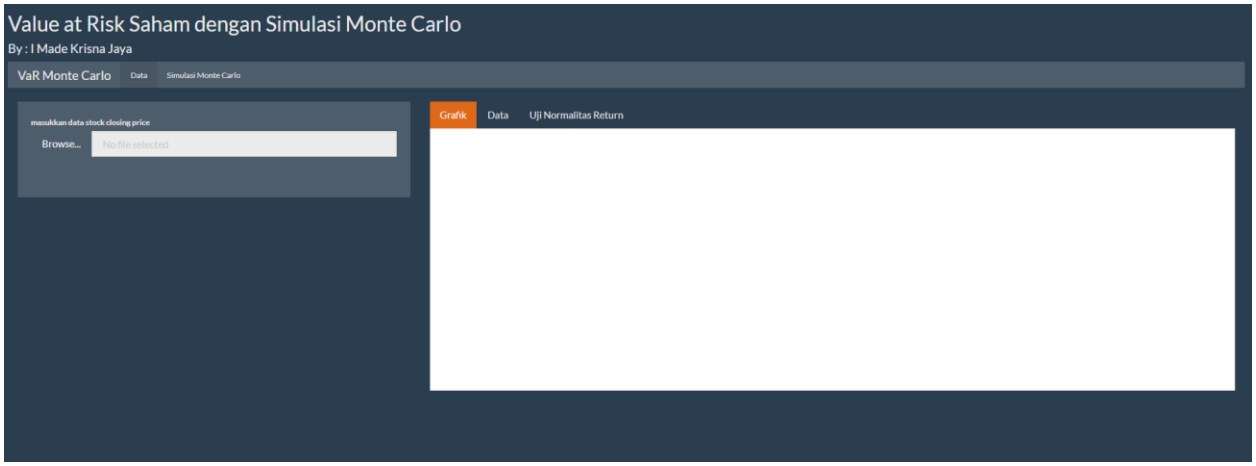
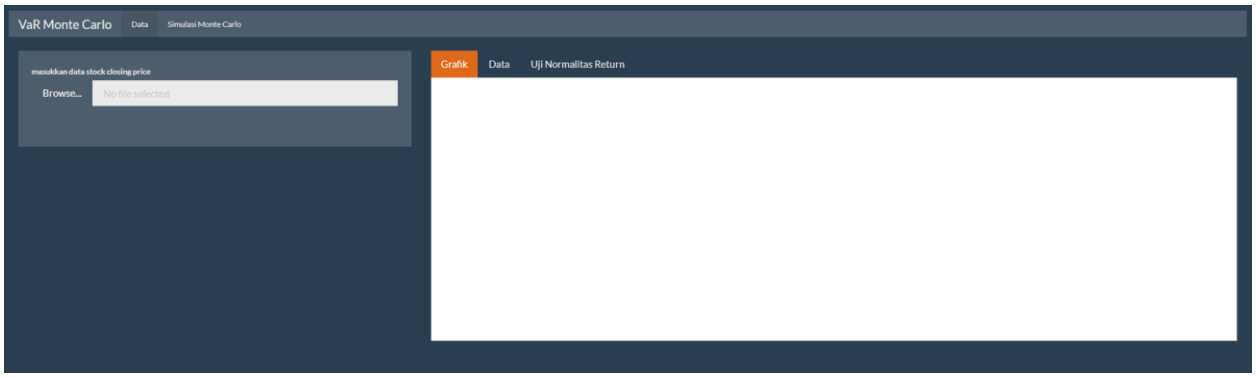
INTRODUCTION TO GRAPHICAL USER INTERFACE

- Initial display when the GUI is running



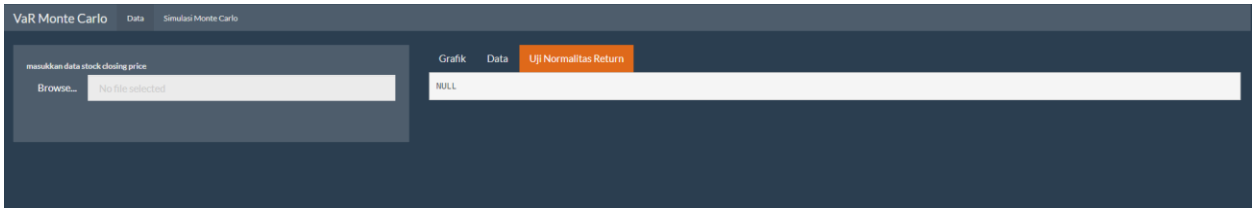
- There are two panels menus. Namely the data panel menu and the Monte Carlo Simulation panel menu. The Monte Carlo Simulation panel menu functions to determine the initial investment value, the number of simulation repetitions carried out and displays iterations and the value at risk of the stock data.

- The data panel menu functions to input the data used, displays time series plot of the data,

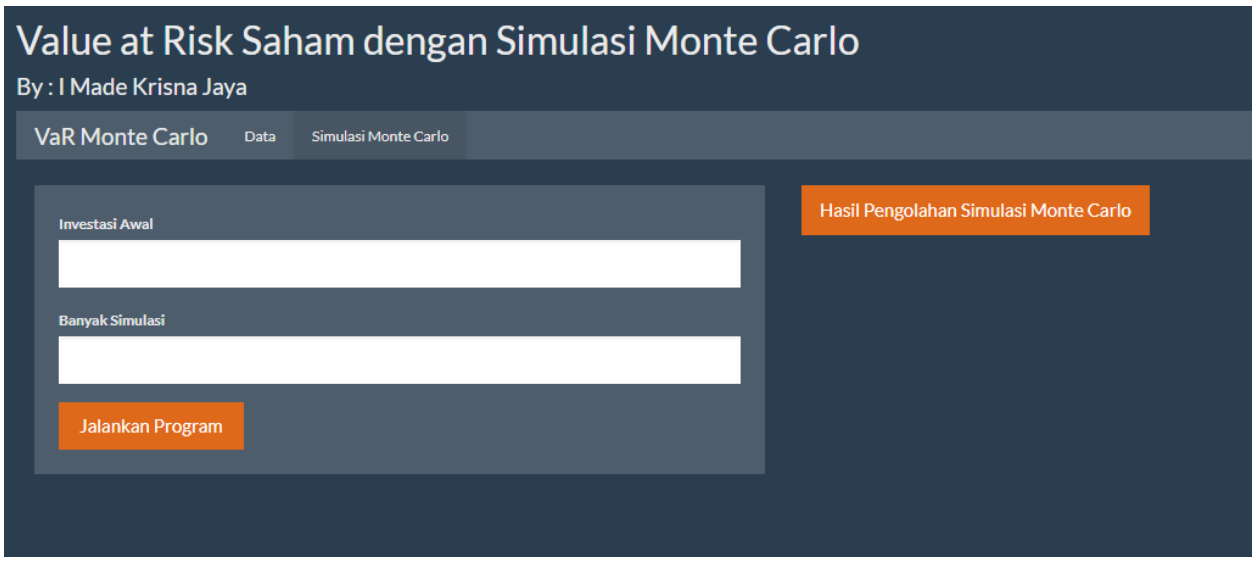


display descriptive statistics of the data,

and result test the normality of stock data return.

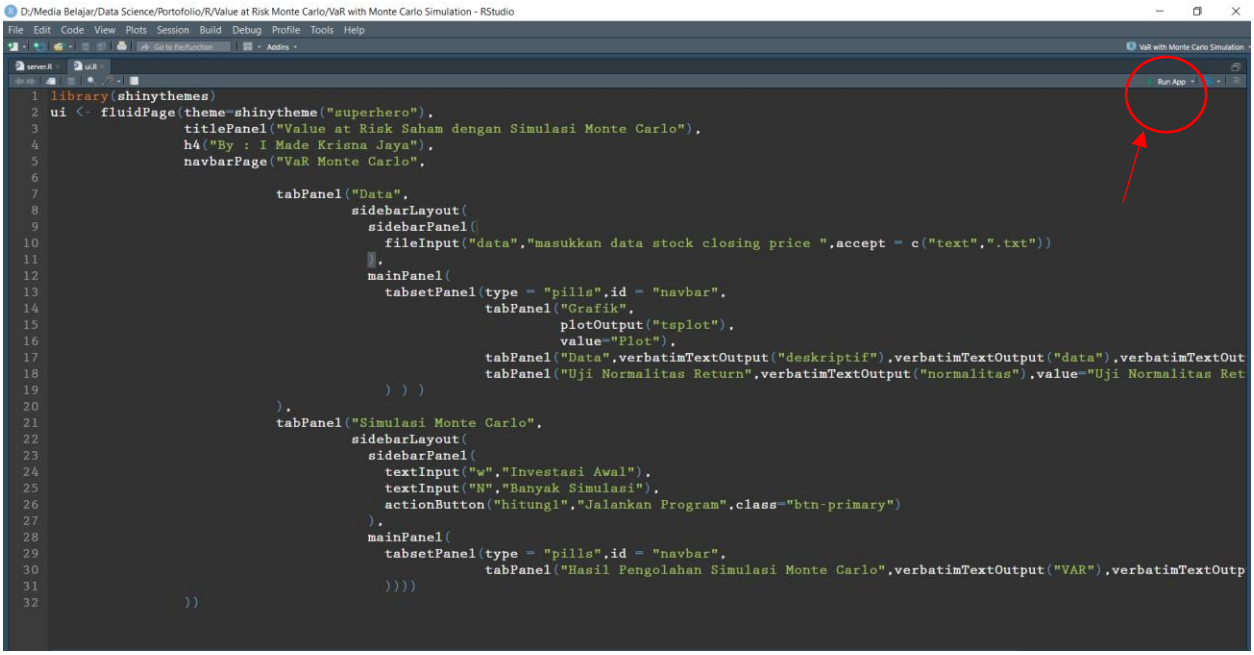


- The Monte Carlo simulations panel menu functions to determine the initial investment value, the number of simulation repetitions and displays iterations and the value at risk of the stock data.

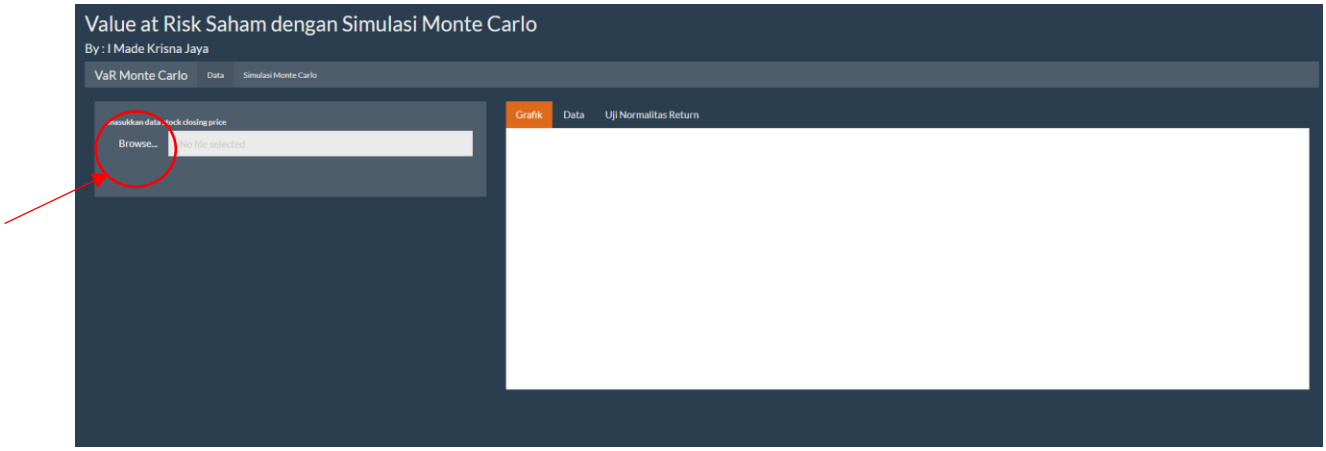


LANGKAH-LANGKAH PENGOPERASIAN

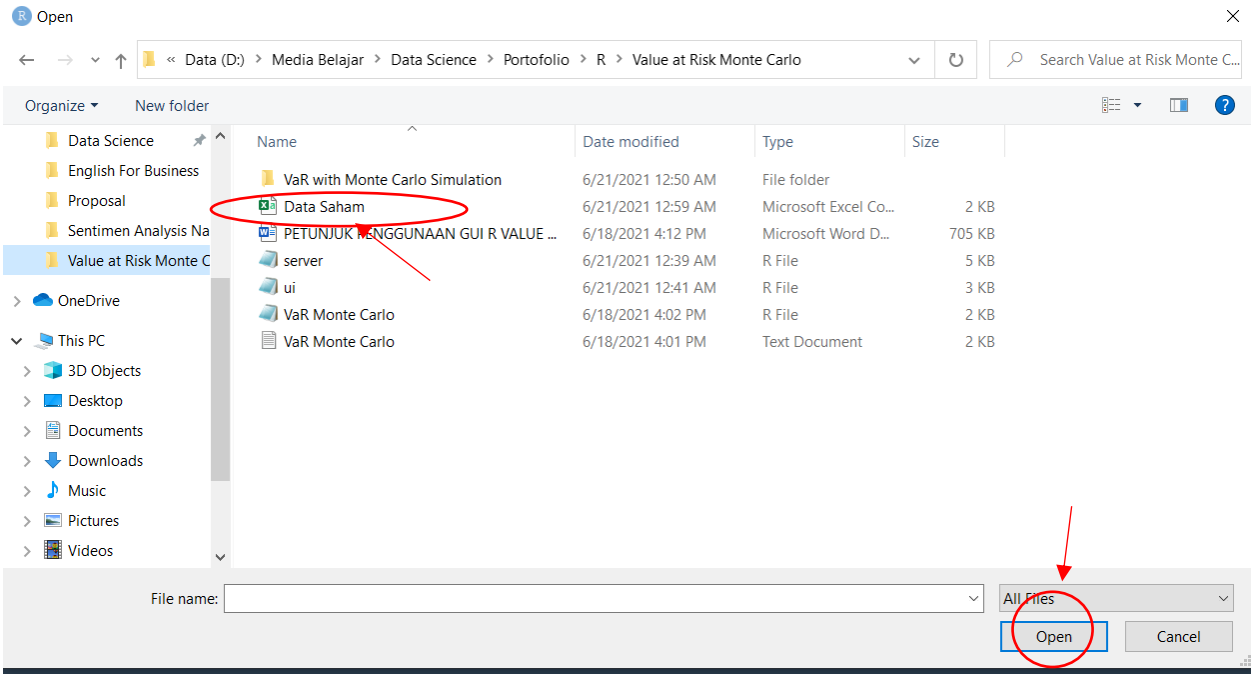
1. Open the R GUI by running ui.R and server.R



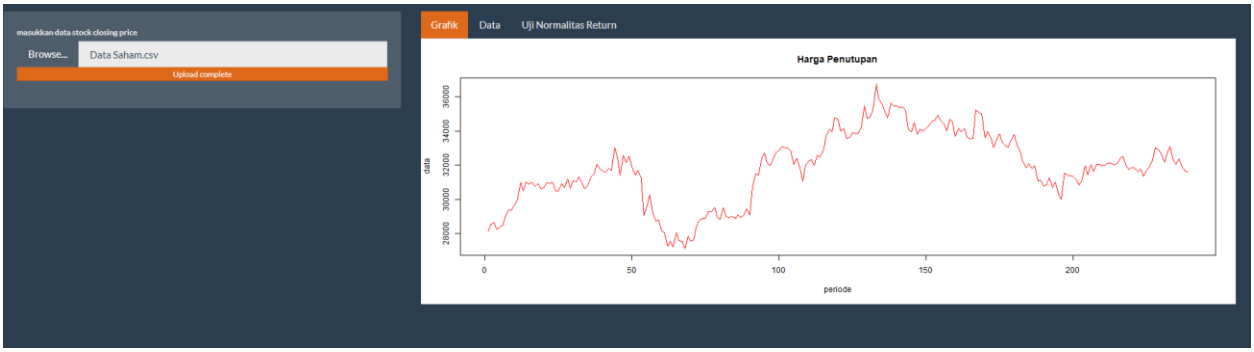
2. In the data panel, input the data that will be used using the browse button

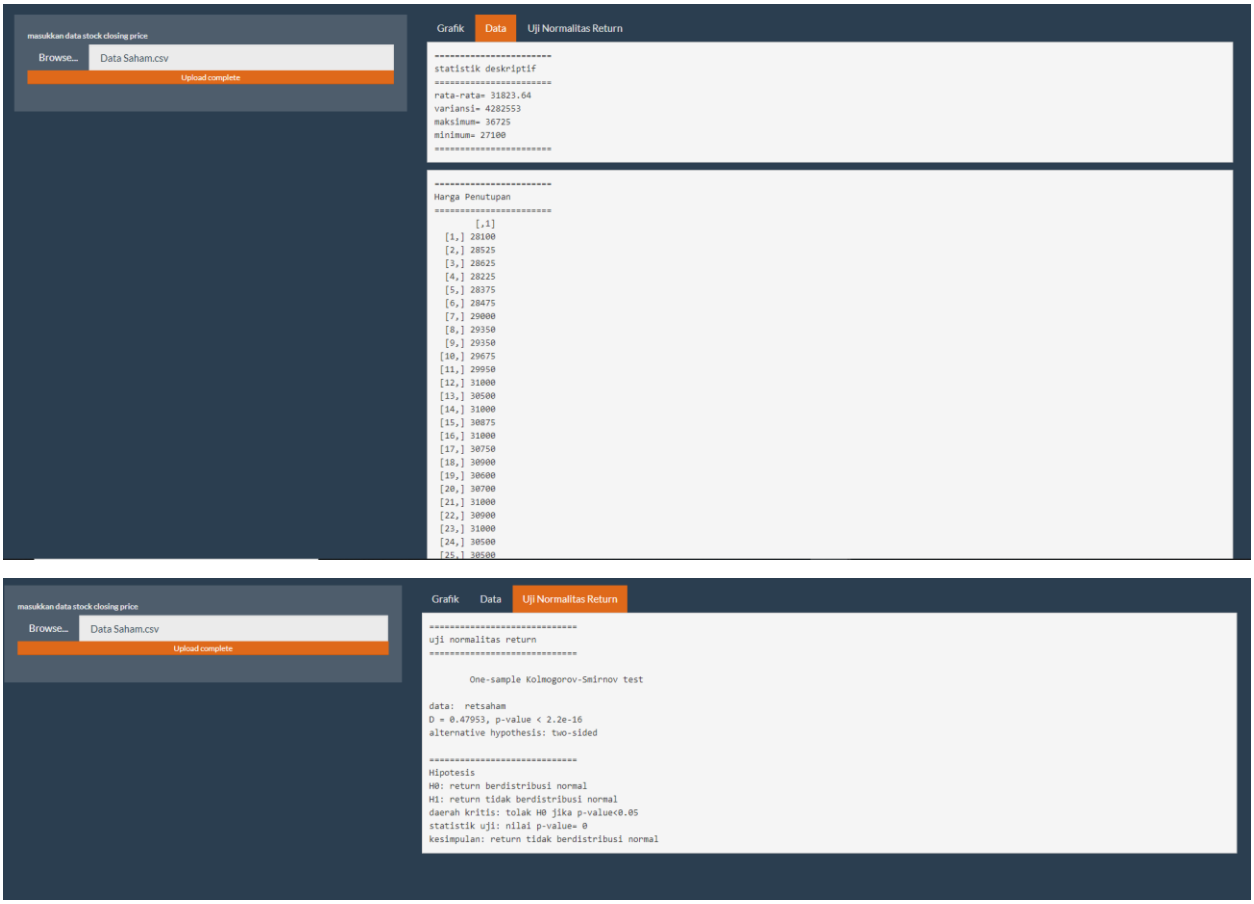


3. Choose the file and then press open button.

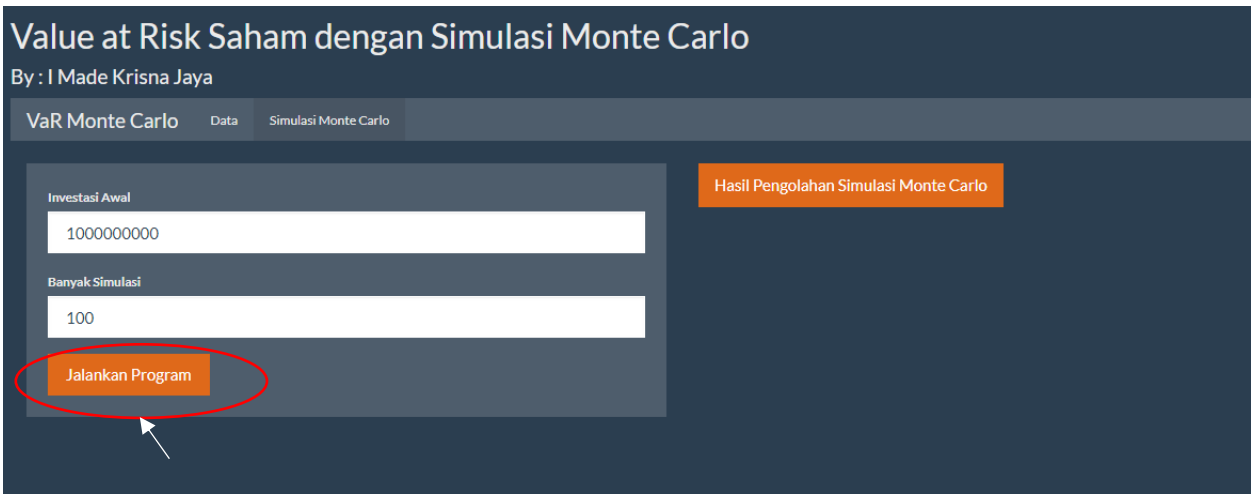


4. You can see the display of time series plot, stock data returns, and normality test results on stock returns.





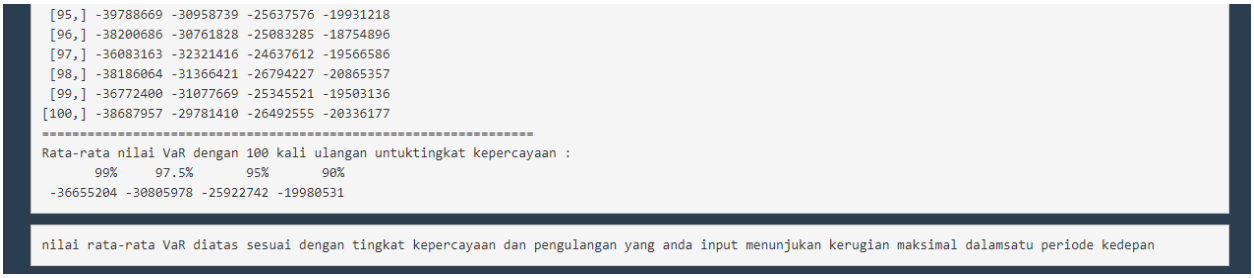
5. Switch to the Monte Carlo simulation panel, then enter the investment value and the number of monte carlo iterations to be carried out.



6. The iterations result and Value at Risk can be seen from the stock data used.

Hasil Pengolahan Simulasi Monte Carlo

```
=================================================================
Nilai VaR dengan Simulasi Monte Carlo untuk tingkat kepercayaan :
=================================================================
     99%     97.5%     95%     90%
=================================================================
           [,1]      [,2]      [,3]      [,4]
  [1,] -36778598 -29819116 -24373509 -20695277
  [2,] -33600791 -29482621 -26598443 -19057143
  [3,] -36727556 -30294727 -26127430 -19881437
  [4,] -37077261 -30517978 -24145898 -21472811
  [5,] -36500620 -31684355 -25723198 -22234143
  [6,] -36796161 -28794157 -25358437 -19977261
  [7,] -33450404 -32103132 -25756592 -19358785
  [8,] -34616596 -29389672 -25378423 -20663808
  [9,] -37848025 -31711009 -27390020 -20932560
 [10,] -35618751 -31297532 -26067109 -18794221
```



```
  [95,] -39788669 -30958739 -25637576 -19931218
  [96,] -38200686 -30761828 -25083285 -18754896
  [97,] -36083163 -32321416 -24637612 -19566586
  [98,] -38186064 -31366421 -26794227 -20865357
  [99,] -36772400 -31077669 -25345521 -19503136
 [100,] -38687957 -29781410 -26492555 -20336177
 =================================================================
 Rata-rata nilai VaR dengan 100 kali ulangan untuktingkat kepercayaan :
        99%     97.5%       95%       90%
  -36655204 -30805978 -25922742 -19980531
```

```
nilai rata-rata VaR diatas sesuai dengan tingkat kepercayaan dan pengulangan yang anda input menunjukan kerugian maksimal dalamsatu periode kedepan
```