```
In [24]: runfile('/home/abayomi/Documents/WQU/Econometrics/PROJECT5/project5.py', wdir='/home/abayomi/Documents
/WQU/Econometrics/PROJECT5')
First Solution
 ================
Holding =  12600000 VaR =  518128.8925 in  1 Days @ z =  1.6448536269514722


[********************100%**********************]  1 of 1 downloaded


Output of the GARCH model Forecasting Volatility of APPLE STOCK AAPL
 ==========================================================================
                     Constant Mean - GARCH Model Results
==============================================================================
Dep. Variable:             pct_change   R-squared:                       -0.000
Mean Model:             Constant Mean   Adj. R-squared:                  -0.000
Vol Model:                      GARCH   Log-Likelihood:               -393.084
Distribution:                  Normal   AIC:                           794.167
Method:            Maximum Likelihood   BIC:                           807.954
                                        No. Observations:                  232
Date:                Mon, Jul 02 2018   Df Residuals:                      228
Time:                        22:29:36   Df Model:                            4
                                 Mean Model
============================================================================
                 coef    std err          t      P>|t|     95.0% Conf. Int.
----------------------------------------------------------------------------
mu             0.0742  8.173e-02      0.908      0.364 [-8.594e-02,  0.234]
                            Volatility Model
============================================================================
                 coef    std err          t      P>|t|    95.0% Conf. Int.
----------------------------------------------------------------------------
omega          0.2229  9.350e-02      2.384  1.712e-02 [3.966e-02,  0.406]
alpha[1]       0.1250  5.046e-02      2.478  1.323e-02 [2.612e-02,  0.224]
beta[1]        0.7494  6.554e-02     11.435  2.800e-30   [  0.621,  0.878]
============================================================================

Covariance estimator: robust

DataFrame Tail Display
 ========================                 Close  log_price  pct_change   stdev21    hvol21  variance  \
Date
2018-06-25  182.169998   5.204940   -0.014983  0.008046  0.127730  0.016315
2018-06-26  184.429993   5.217270    0.012330  0.008567  0.135992  0.018494
2018-06-27  184.160004   5.215805   -0.001465  0.008547  0.135687  0.018411
2018-06-28  185.500000   5.223055    0.007250  0.008726  0.138526  0.019189
2018-06-29  185.110001   5.220950   -0.002105  0.008710  0.138267  0.019118

            forecast_vol
Date
2018-06-25      0.118896
2018-06-26      0.120424
2018-06-27      0.114711
2018-06-28      0.112340
2018-06-29      0.108576


Second Solution
 ================
Holding =  18511000.1 VaR =  3305909.6327 in  1 Days @ z =  1.6448536269514722

In [25]:
```