Which stock to be choose and what should be weight of that stock in the portfolio are the most important questions of portfolio selection process. To make this process easier, we write a Python code that show you the percentages of stocks in your portfolio by using Markowitz portfolio selection. By using the correlation between stocks, you can choose the weights either in order to minimize your risk or maximize return for the given risk. Also, this method allows users to short sale for stocks. This code can be used for as many shares as the user wants with some minor changes.

We created an example portfolio by using 4 stocks from Borsa İstanbul. We used Akbank, Ülker, Tüpraş and Turkcell for our portfolio. If we want to minimize our risk for these four stocks, we should invest 11% to Akbank, 32% to Turkcell, 33% to Tüpraş and 24% to Ülker. Our risk will be 21% while our return will be 18% with these weights. If we want to maximize our return for the given risk, we should short sell Akbank by 40%, and invest 2% to Turkcell, 83% to Tüpraş and 56% to Ülker. Our risk will be 31% but our return will be 33% with these weights.