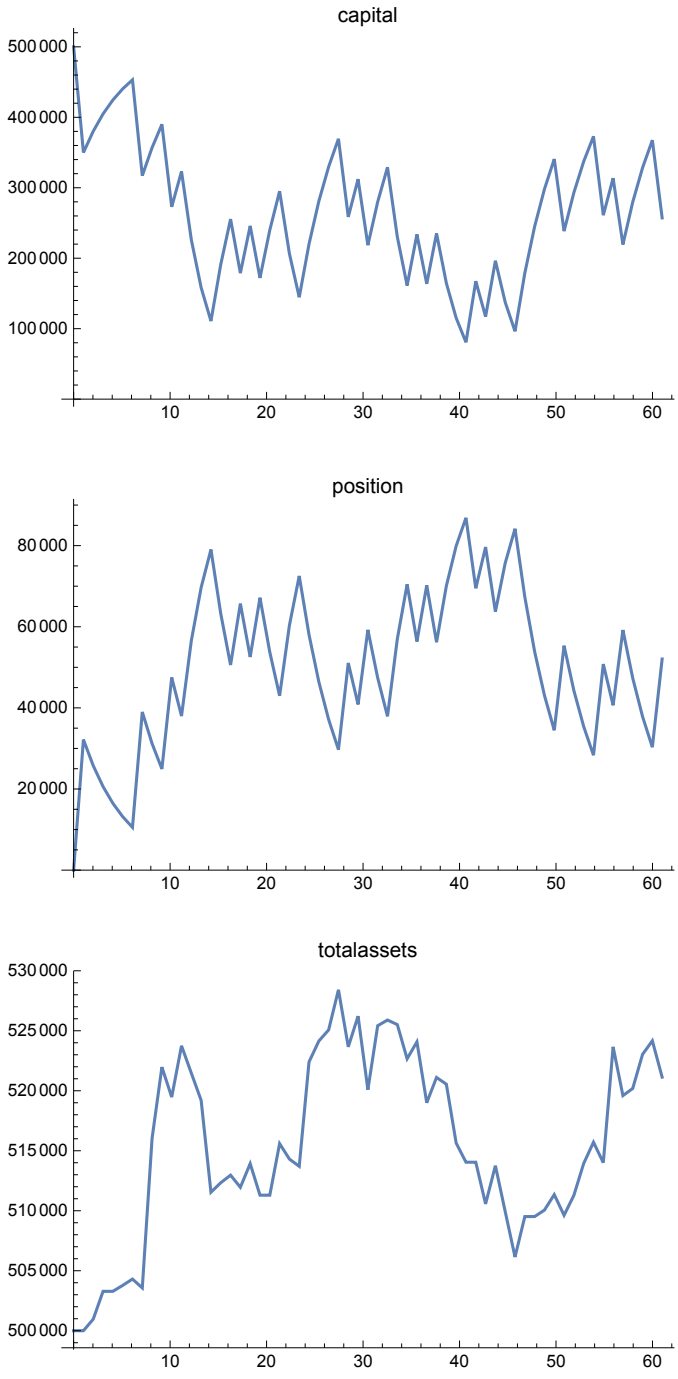
see more on stackoverflow, the following code was offered by Chris Degnen.

```
http://stackoverflow.com/questions/43164238/how-to-build-up-a-backtesting-program-with-mathem
```

In[1009]:=
```
listPrice = {{4.66, -0.05}, {4.69, 0.03}, {4.78, 0.09}, {4.78, 0.}, {4.81, 0.03},
   {4.85, 0.04}, {4.78, -0.07}, {5.1, 0.32}, {5.29, 0.19}, {5.19, -0.1}, {5.28, 0.09},
   {5.22, -0.06}, {5.18, -0.04}, {5.07, -0.11}, {5.08, 0.01}, {5.09, 0.01},
   {5.07, -0.02}, {5.1, 0.03}, {5.05, -0.05}, {5.05, 0.}, {5.13, 0.08}, {5.1, -0.03},
   {5.09, -0.01}, {5.21, 0.12}, {5.24, 0.03}, {5.26, 0.02}, {5.35, 0.09}, {5.19, -0.16},
   {5.24, 0.05}, {5.09, -0.15}, {5.18, 0.09}, {5.19, 0.01}, {5.18, -0.01},
   {5.13, -0.05}, {5.15, 0.02}, {5.06, -0.09}, {5.09, 0.03}, {5.08, -0.01},
   {5.01, -0.07}, {4.99, -0.02}, {4.99, 0.}, {4.94, -0.05}, {4.98, 0.04},
   {4.92, -0.06}, {4.87, -0.05}, {4.91, 0.04}, {4.91, 0.}, {4.92, 0.01}, {4.95, 0.03},
   {4.9, -0.05}, {4.93, 0.03}, {4.99, 0.06}, {5.04, 0.05}, {4.98, -0.06}, {5.17, 0.19},
   {5.07, -0.1}, {5.08, 0.01}, {5.14, 0.06}, {5.17, 0.03}, {5.07, -0.1}};

initCapital = 500000;
(*min to 0*)initPosition = 0;
(*max to 100000*)p1 = 0.3;
p2 = 0.2;

capital = {initCapital};
position = {initPosition};
totalassets = {initCapital};

buy[p1_, price_] := Module[{value}, value = Last[capital] p1 (*or use p1/100*);
  (*check limits*)
  If[Last[position] + value / price > 100000 || Last[capital] - value < 0,
   (*skip transaction*)AppendTo[position, Last[position]];
   AppendTo[capital, Last[capital]];
   AppendTo[totalassets, Last[totalassets]],
   (*or make transaction*)AppendTo[position, Last[position] + value / price];
   AppendTo[capital, Last[capital] - value];
   AppendTo[totalassets, price Last[position] + Last[capital]];
   {"buy", p1, value, Last[capital]}]]

sell[p2_, price_] :=
 Module[{quantity}, quantity = Last[position] p2 (*or use p2/100*);
  (*make transaction*)AppendTo[position, Last[position] - quantity];
  AppendTo[capital, Last[capital] + quantity * price];
  AppendTo[totalassets, price Last[position] + Last[capital]];
  {"sell", p2, quantity * price, Last[capital]}]

backtestDo[list_List] := If[list[[2]] < 0, buy[p1, First[list]], sell[p2, First[list]]]

backtestDo /@ listPrice;

GraphicsColumn[
 Map[ListLinePlot[ToExpression[#], DataRange → Length[listPrice] + 1, PlotLabel → #,
    ImagePadding → {{40, 10}, {Automatic, Automatic}}] &,
  {"capital", "position", "totalassets"}], ImageSize → 400]
```

Out[1019]=


capital
500 000
400 000
300 000
200 000
100 000
10
20
30
40
50
60
position
80 000
60 000
40 000
20 000
10
20
30
40
50
60
totalassets
530 000
525 000
520 000
515 000
510 000
505 000
500 000
10
20
30
40
50
60