**Portfolio Risk Control System:**

**General Setting (py):**

1. Max Drawdown (10%)
2. Drawdown Warning (0-100%)
   1. DW\*MaxDD = Warning Level.
   2. If DW = 60%, Warning Level =6%

When CurrentDD>=6%, system will generate warning

1. Margin Level Control

**Risk Budgeting**

Input:

1. Max Drawdown (10%)<- Risk Setting
2. Current Drawdown (5%)<- P&L
3. Portfolio Returns
   1. Weight Vector
   2. Historical Returns

Output:

1. Risk Budget = MaxDD-CurrentDD
2. WinRate = No. of Positive Returns / Total No. Returns
   1. WinRate = 70%
3. Max Consecutive Losses (n): (1-WinRate)^n = e-10
   1. n = 20
4. Risk Per Day (x%):

If CurrentDD <= Warning Level

(1 - x%)^n = 1- MaxDD

else

(1 - x%)^n = 1- Risk Budget

* 1. x%= 0.525%

**Risk Monitoring:**

Input:

1. Risk Budget
2. Risk Per Day
3. WinRate
4. Portfolio Returns
   1. Weight Vector
   2. Historical Returns

Output:

1. Portfolio Expected Loss (CVaR Confidence = WinRate)
2. Portfolio Tail Risk (CVaR Confidence = 99%)
3. If Risk Per Day < Portfolio Expected Loss

Or Risk Budget < Portfolio Tail Risk

* 1. Adjust Portfolio

1. If CurrentDD > Warning Level
   1. Generate Warning