BackTrade Object Oriented Analysis and Design

# Use cases: Main modules

## Generate Stockpick and allocation for daily trading operations

* [Specify input and setup parameters for daily trading operations](#_dailyTradeSetUp_class)
* Load data
* Clean data
* Generate signal
* Calculate capital allocation for stock picks
* Calculate # of share unit to buy, to sell and to hold for each symbol
* Save the results in a spreadsheet to be submitted to brokerage firms

## Backtest with the given setup parameters

* Specify input and setup parameters for backtest
  + Trading universe: Symbols and exchange name
  + Market cap data
  + Parameters for signal generation
  + Parameters for Backtest: trading costs
* Load data
  + from yahoo finance
* Clean data
* Generate signal
* Backtest the generated signal against the price data
* Calculate the performance metrics
* Display visual of the performance

## Walk forward test a trade system

* Specify input and setup parameters for parameter optimization
  + Trading universe: Symbols and exchange name
  + Market cap data
  + Parameters for signal generation
  + Parameters for walk forward test
    - Trading costs
    - Number of steps for in sample and out of sample datasets
    - Constraint parameters
* Load data
  + From local file: spreadsheet
* Clean data
* Optimize parameters
* Generate signal for each step on out of sample dataset
* Backtest the generated signal against the price data
* Calculate the performance metrics
* Display the metrics and the visual of the WFA performance

# Level 2 Modules

## dailyTradeSetUp class

**Properties**

* Trading universe: Symbols and exchange name
* Market cap data
* Current asset holding: symbols and Rp amount
* Parameters for signal generation: [**tradeSignalSetUp**](#_tradeSignalSetUp)

**Methods**

* No methods

## dataLoader class

from yahoo finance

## dataCleaner class

## strategySignal class

## dailyTradeList class

* Calculate capital allocation for stock picks
* Calculate # of share unit to buy, to sell and to hold for each symbol
* Save the results in a spreadsheet to be submitted to brokerage firms

# Level 3 Submodules

## tradeSignalSetUp Class

**Properties**

* Liquidity
* minAvgVolume in the last nDaysMinAvgVolume
* minAvgValue in the last nDaysminAvgValue
* Momentum
* minPriceRet in the last nDaysMinPriceRet
* Cut loss
* minCutLossRet after nDaysMinCutLossRet
* min\_cut\_loss\_ret after ndays\_Min\_cut\_loss

**Methods**

* No methods

# Utilities functions