L5 Homework Assignments

Now we extend our project from L4 into by adding below classes and their implementation

1 market data

* Market class which represents the market data we need to price derivatives.
* Inside market class, it will have 2 user defined types, rate curve and vol surface class. Complete the implementation of these 3 classes

2 trade

* Implement trade class which is a parent class of all type of trades
* Implement swap class which are child class from trade class, and implement pv function of a swap class
* Implement TreeProduct class inherit from trade class, and then European option and American option class from TreeProduct. Explain the purpose of doing this.

3 main program

Load trade details from txt file and try to compute the pv of different trade types, and then output the result into a txt file;

When pricing American put option, what is the observation of the pv comparing to European option? What is the case for American call option and European call option?