MA374 – Lab 9

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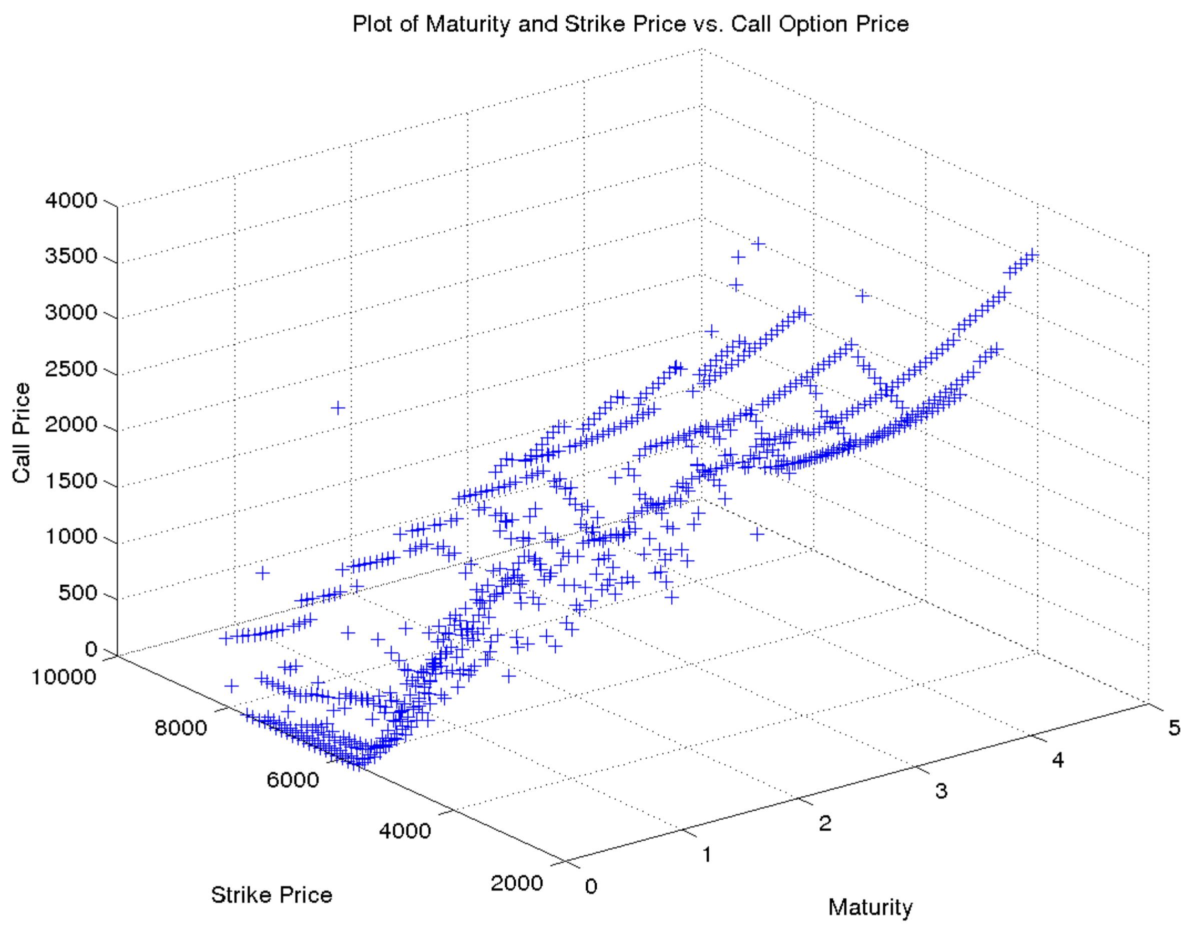
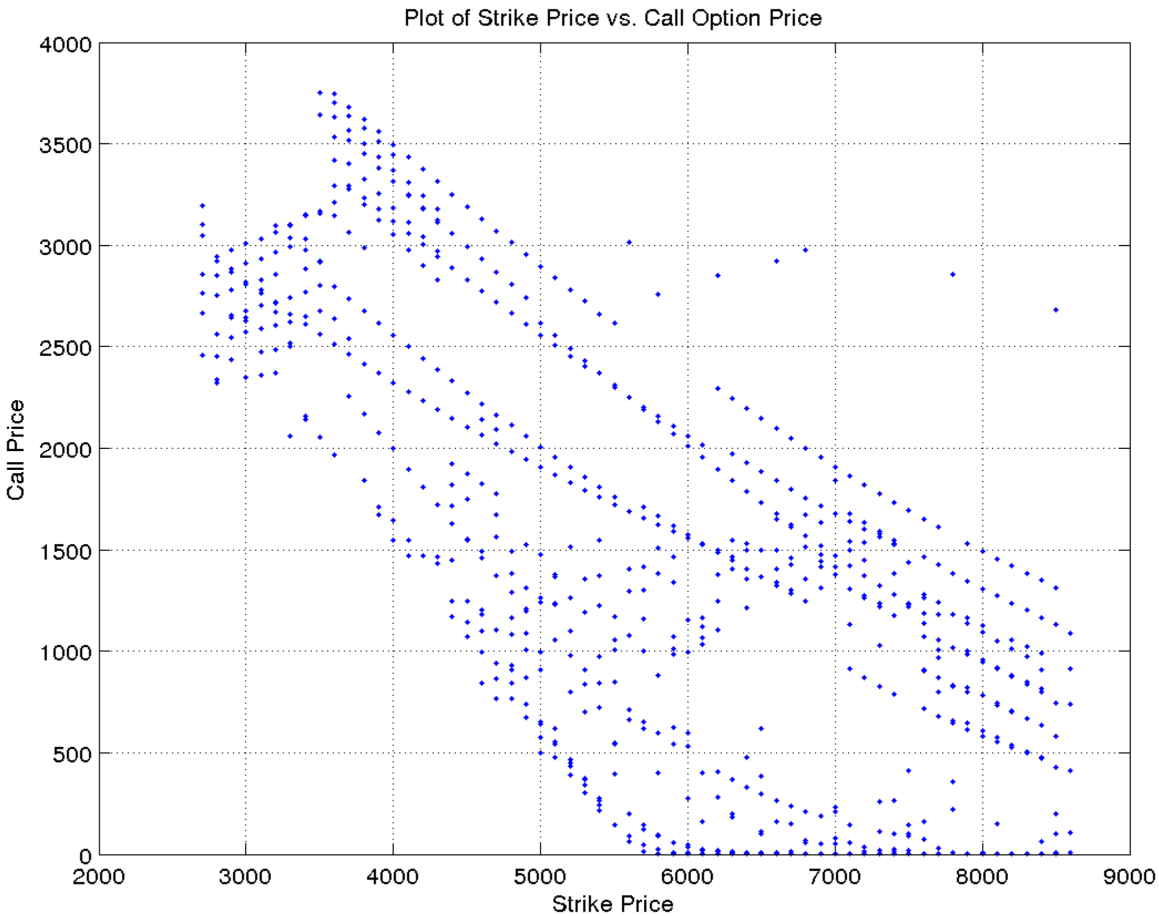
1. For Call Options

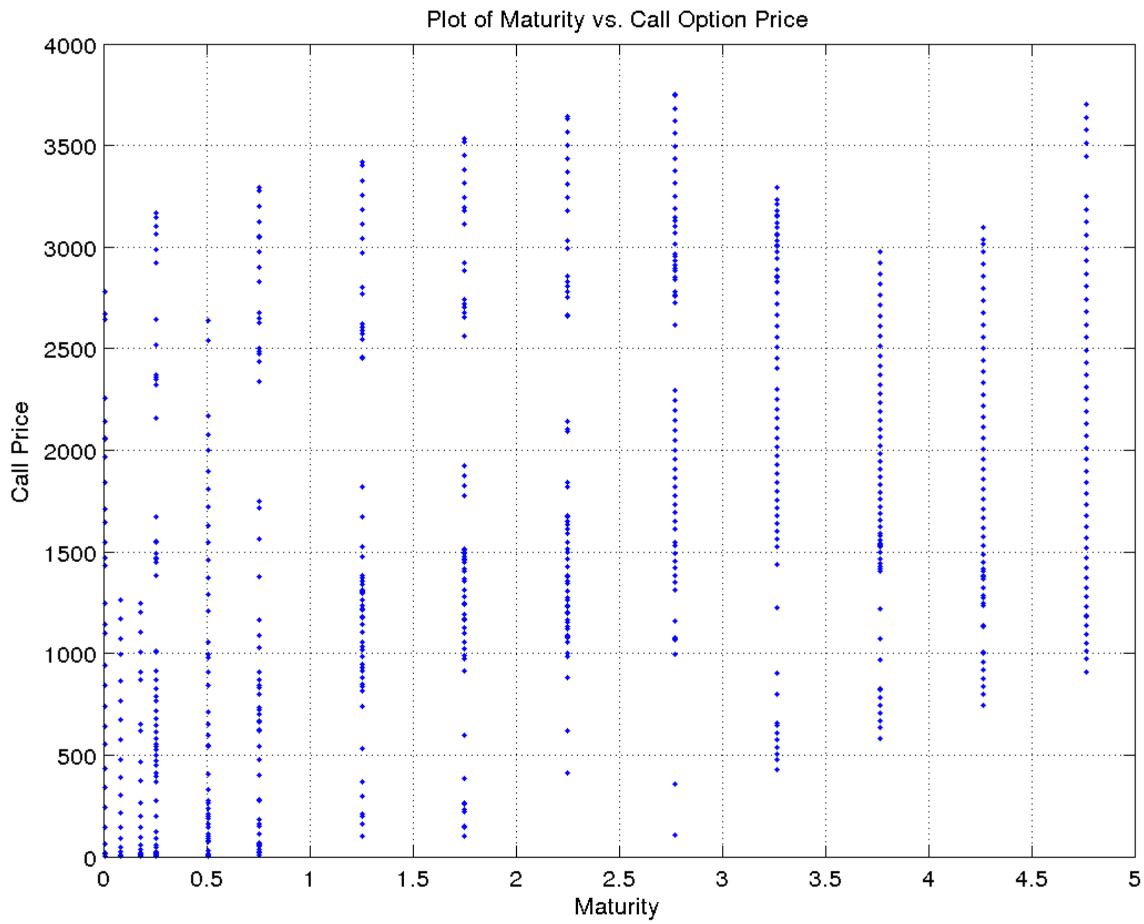
3D Plot:-



Plot of Strike Price vs. Option Price:-

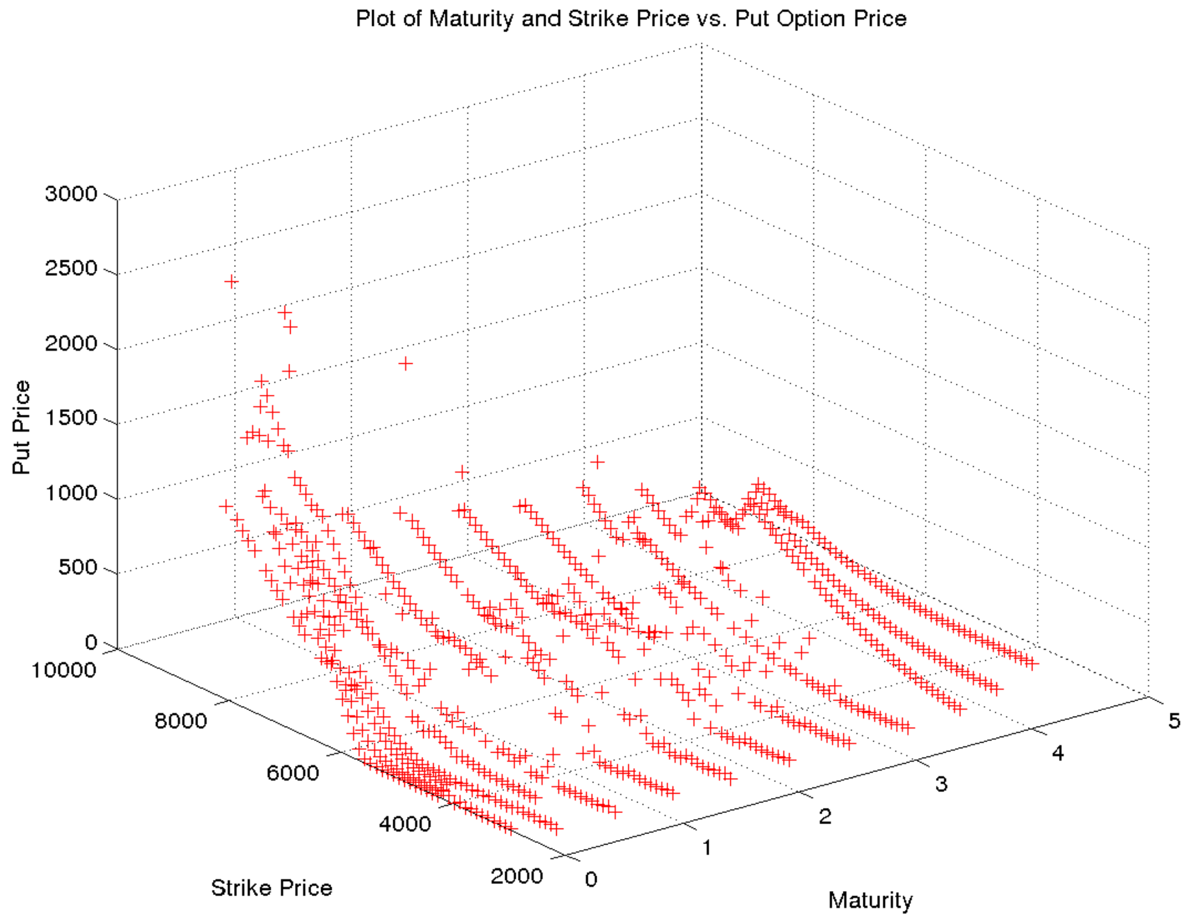


Plot of Maturity vs. Option Price:-

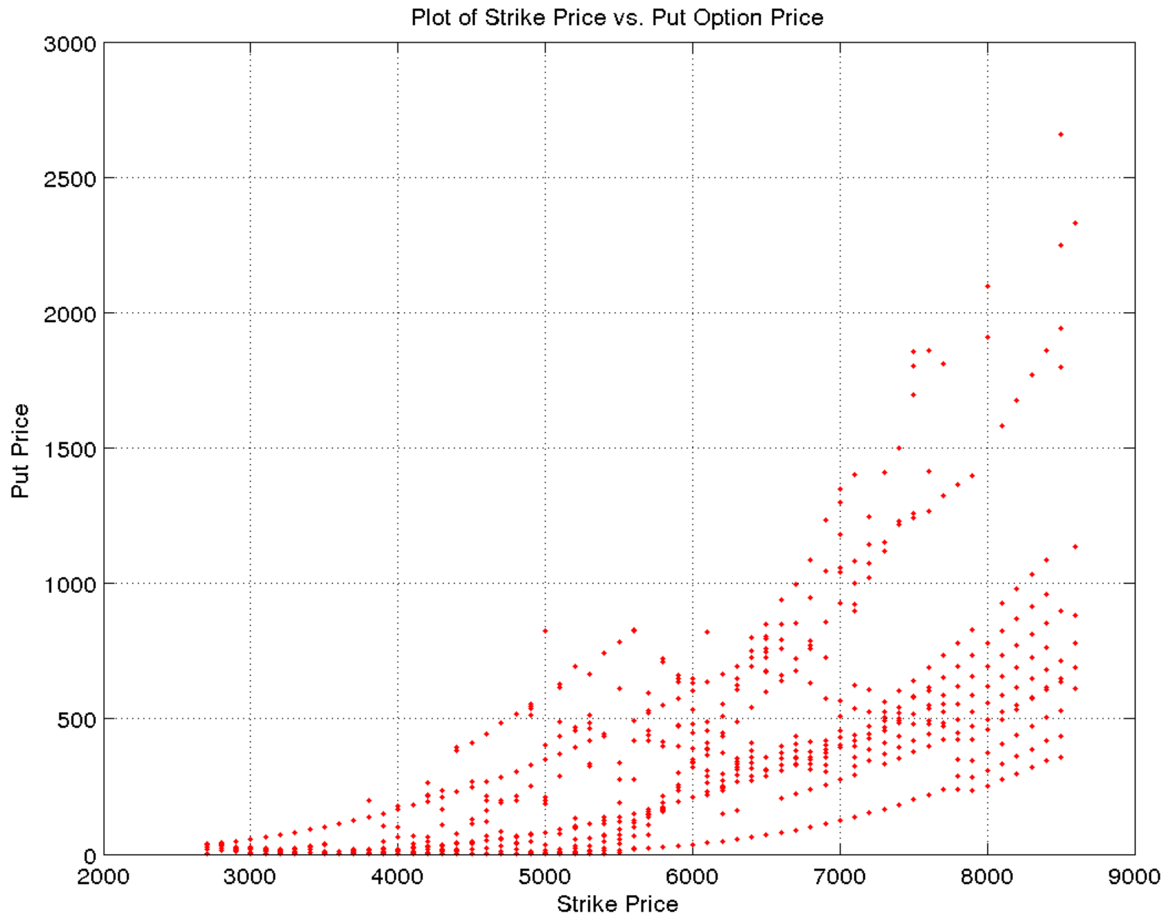


For Put Options

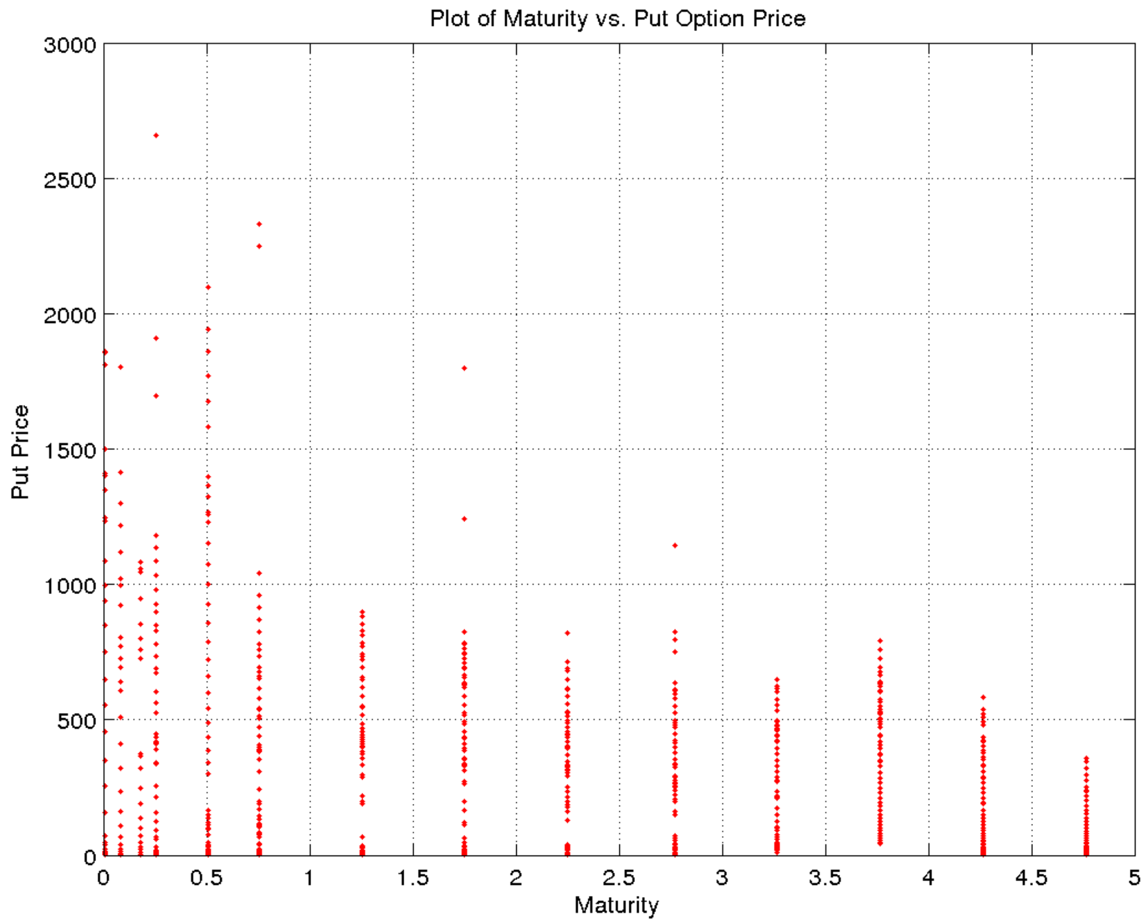
3D Plot:-



Plot of Strike Price vs. Option Price:-

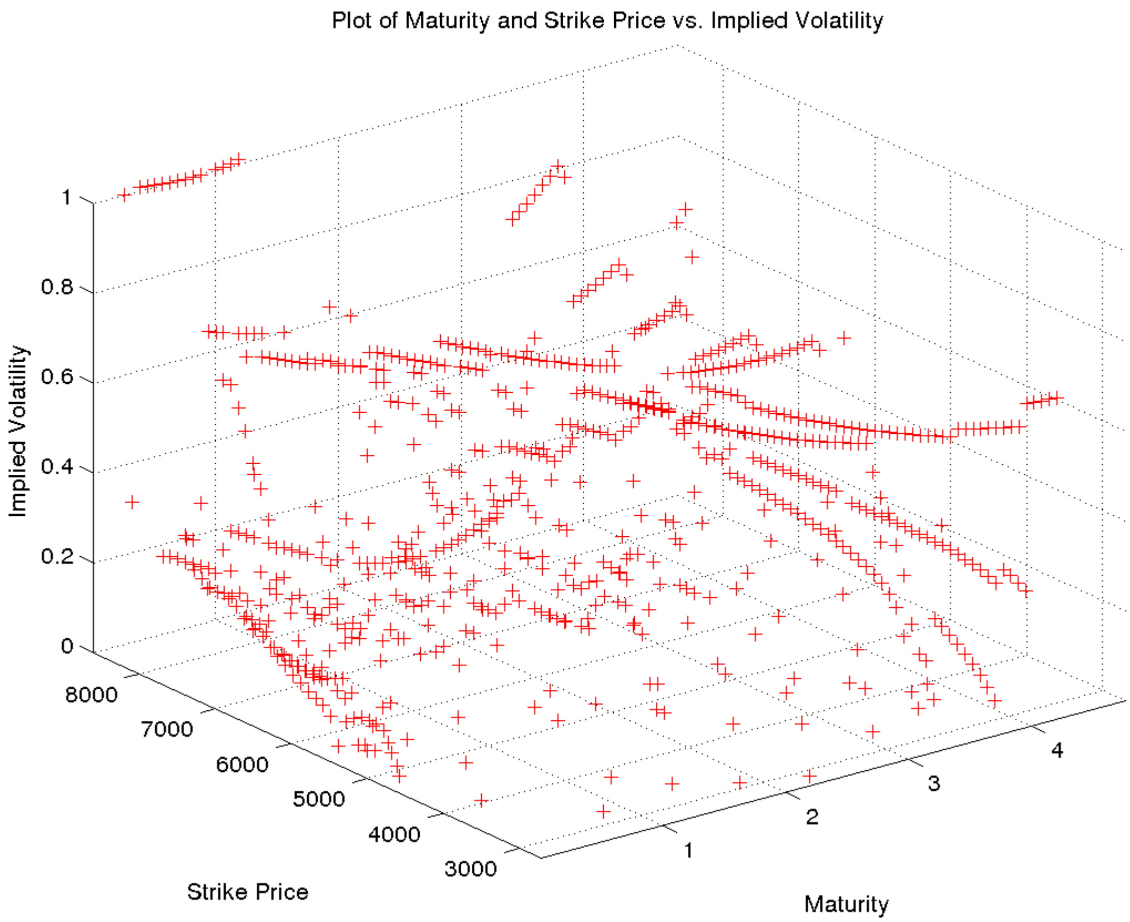


Plot of Maturity vs. Option Price:-

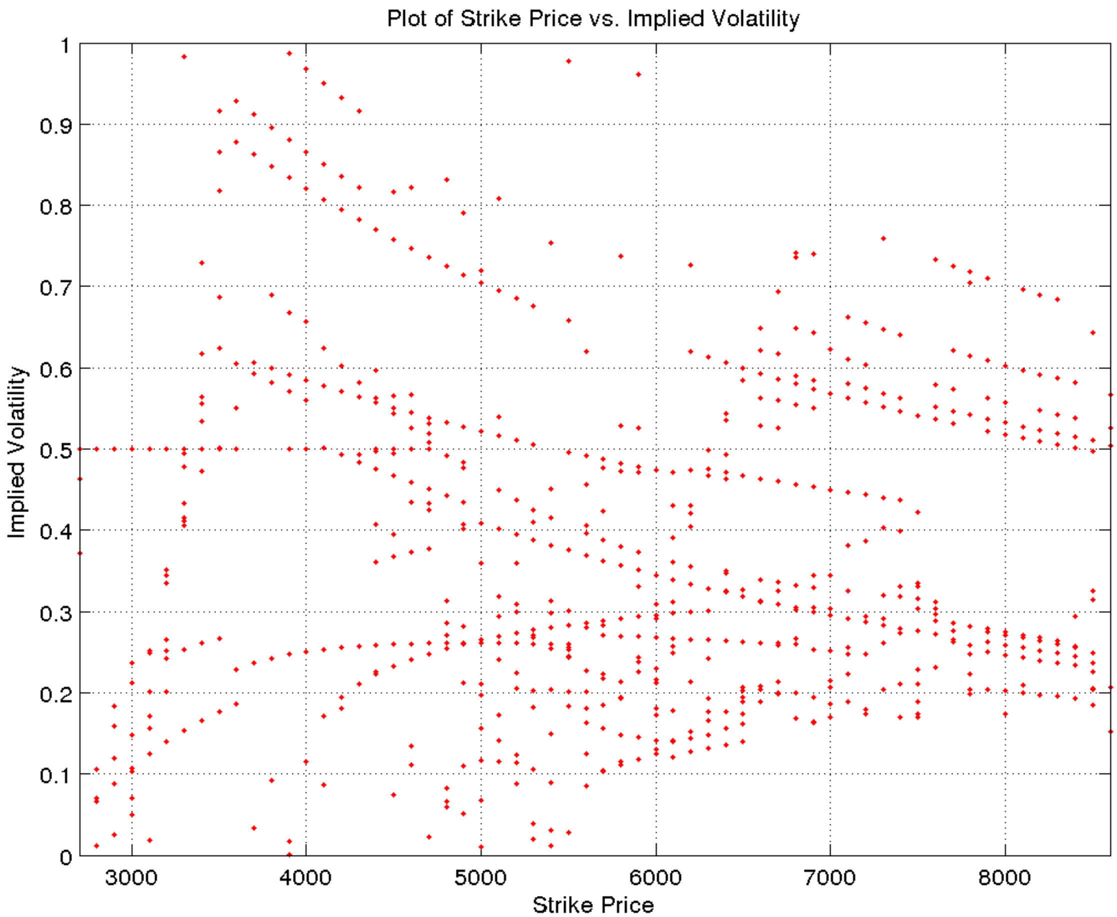


2. Implied volatility was calculated only for call options.

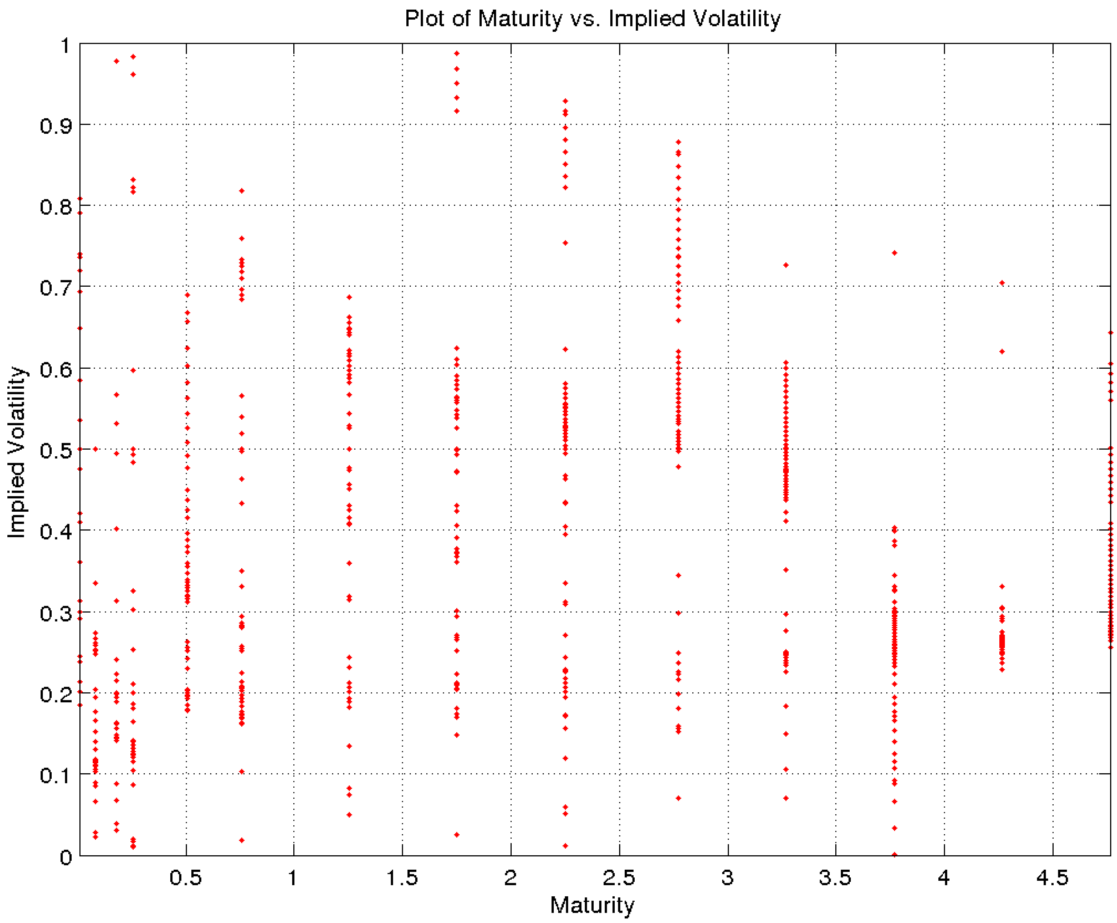
3D Plot:-



Plot of Strike Price vs. Implied Volatility:-



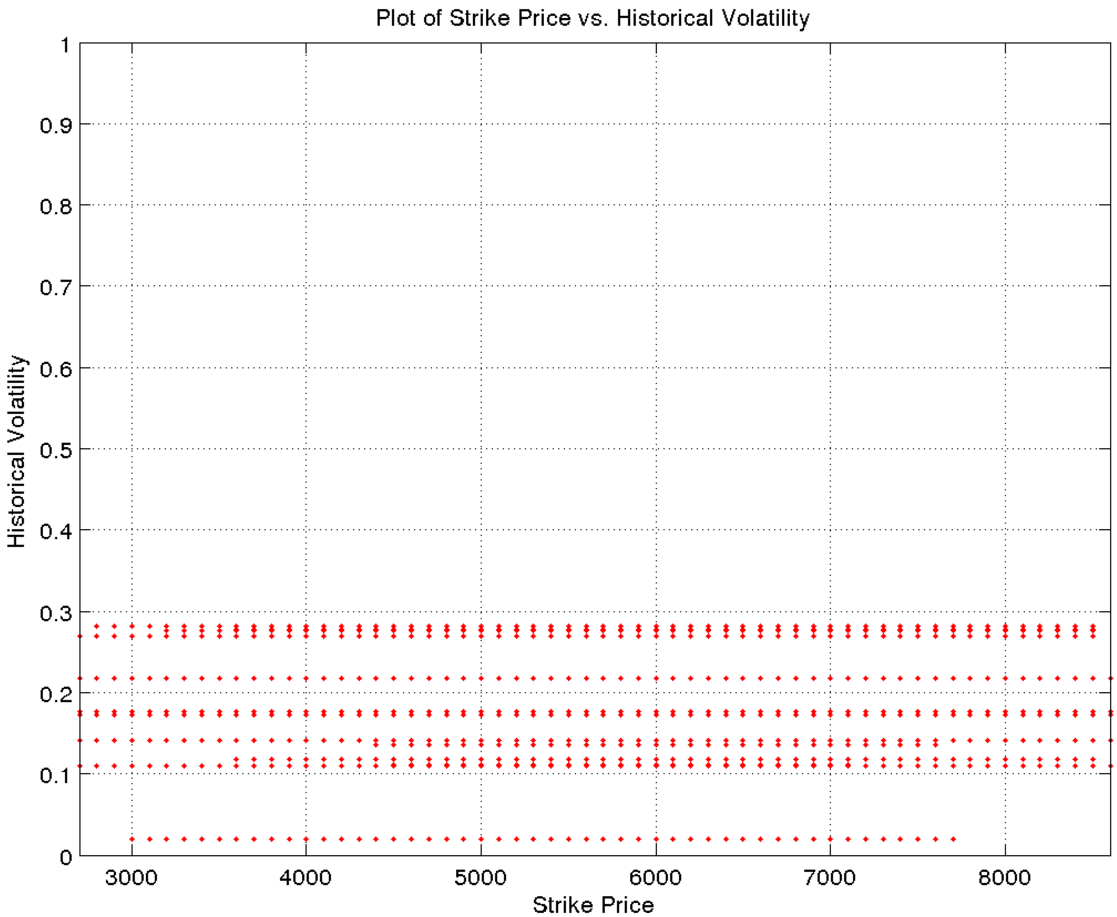
Plot of Maturity vs. Implied Volatility:-



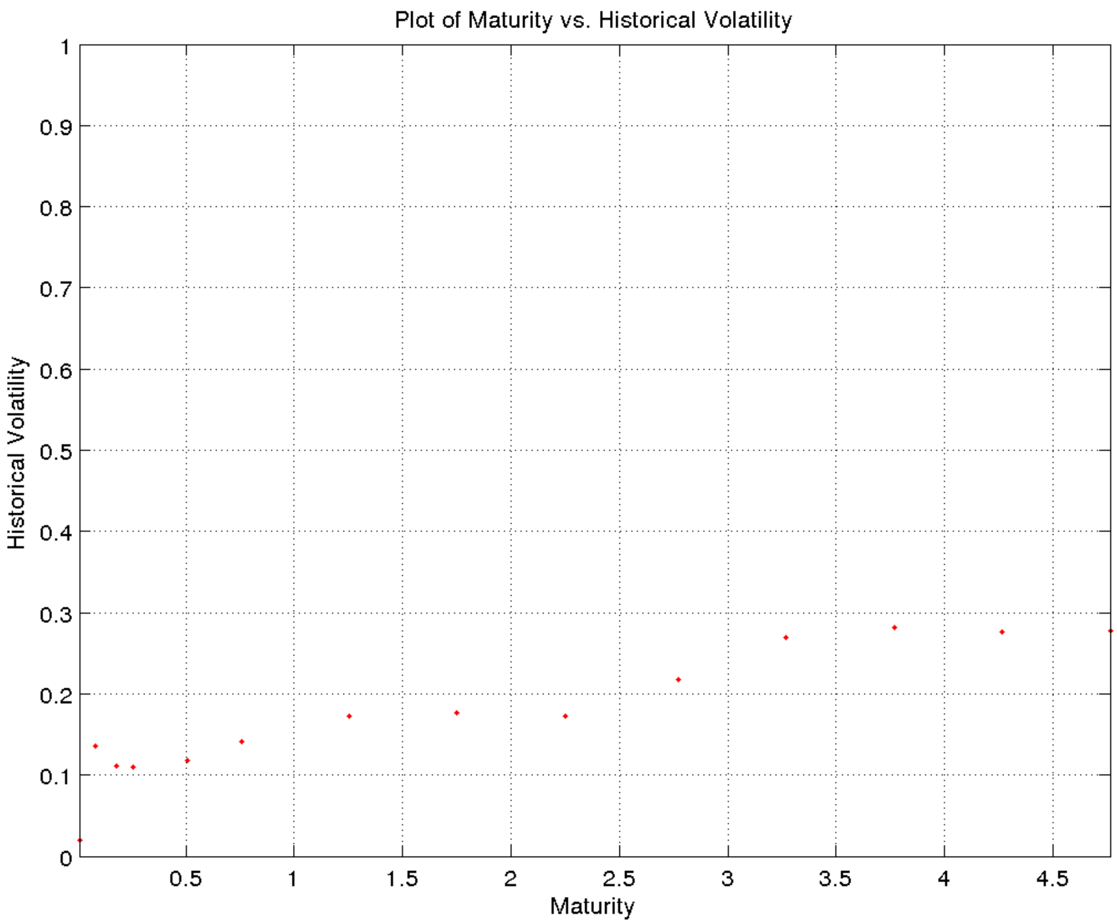
3. 3D Plot:-

Plot of Maturity and Strike Price vs. Historical Volatility
Historical Volatility
1
0.8
0.6
0.4
0.2
0
8000
7000
6000
5000
4000
3000
Strike Price
1
2
3
4
Maturity

Plot of Strike Price vs. Historical Volatility:-



Plot of Maturity vs. Historical Volatility:-



From these plots, it is clear that the implied volatility and historical volatility only match for a small fraction of the call options.