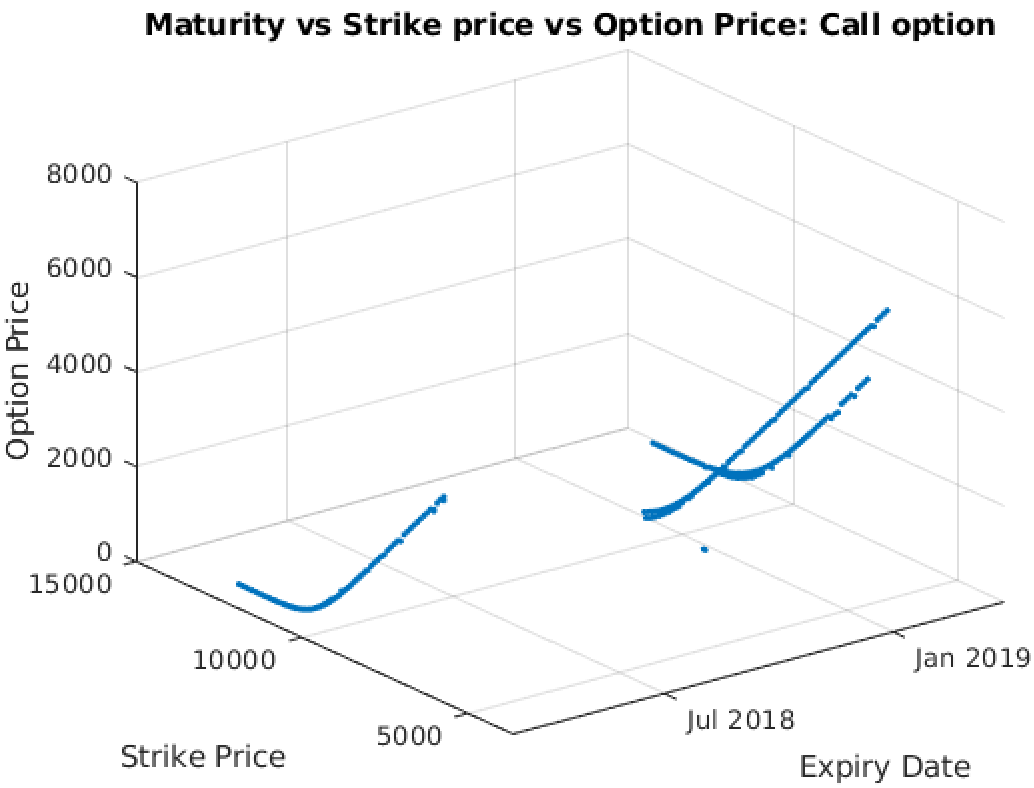
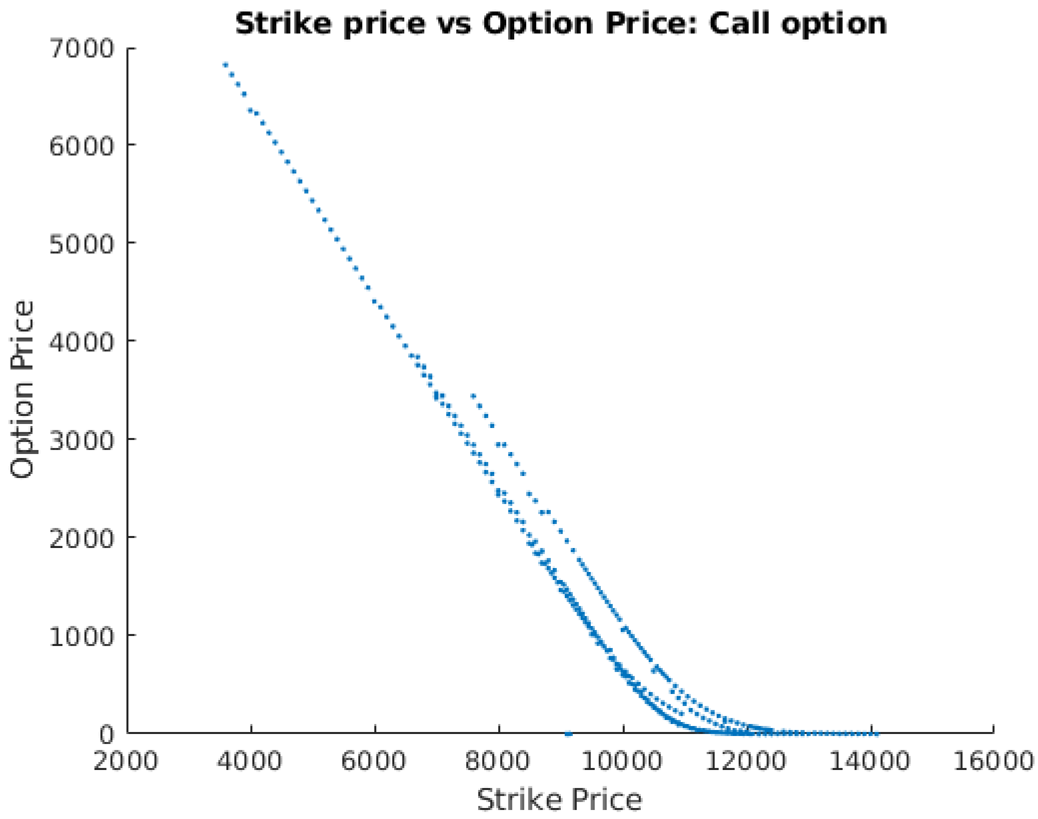
Lab 9 Output

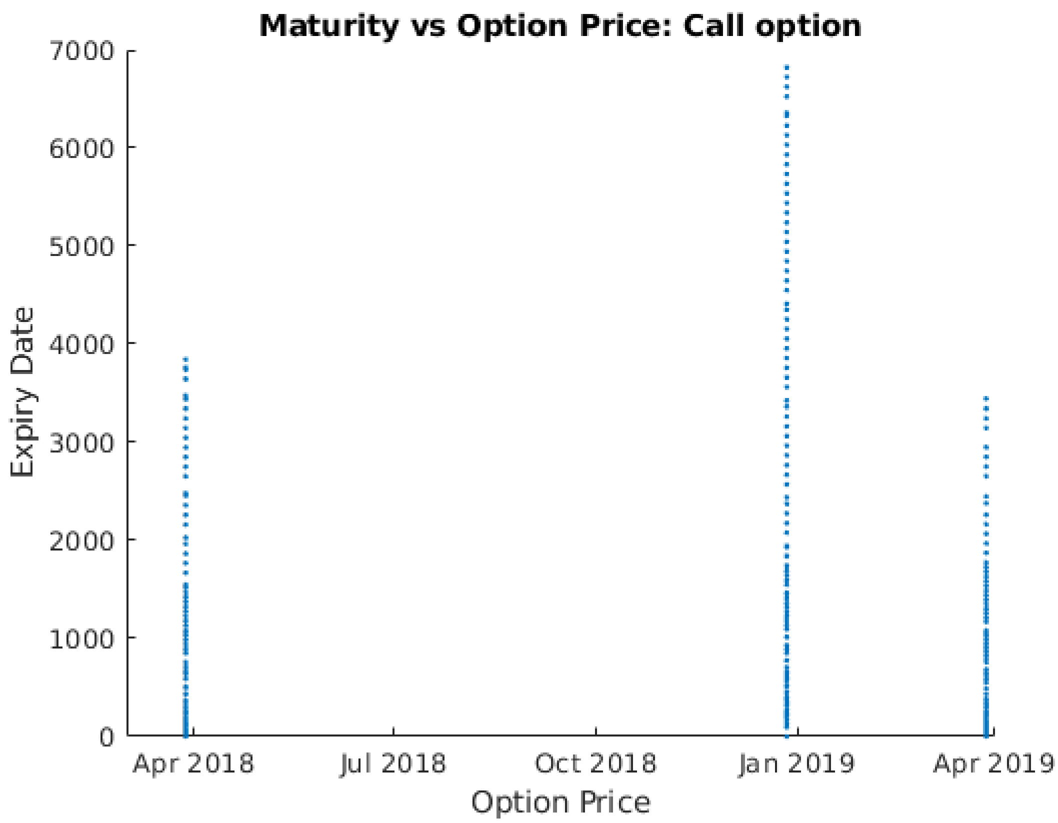
Kartik Sethi

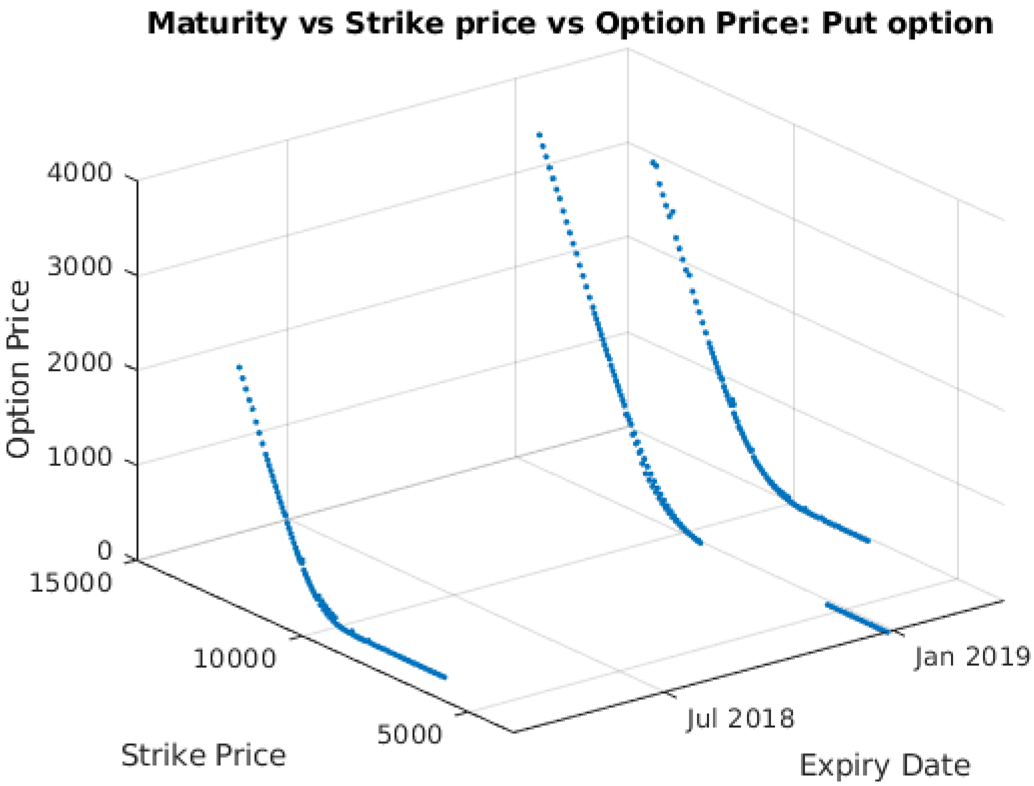
Roll no – 170123057

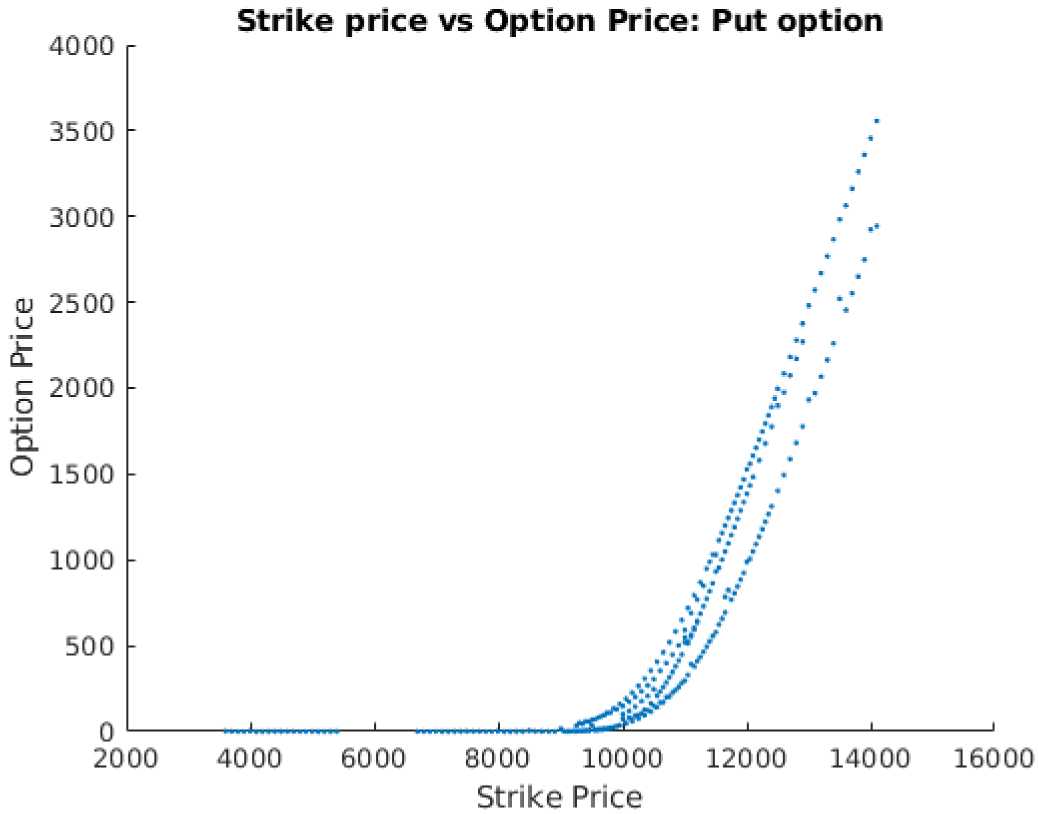
```
Solving for niftyoptiondata
(a)
```

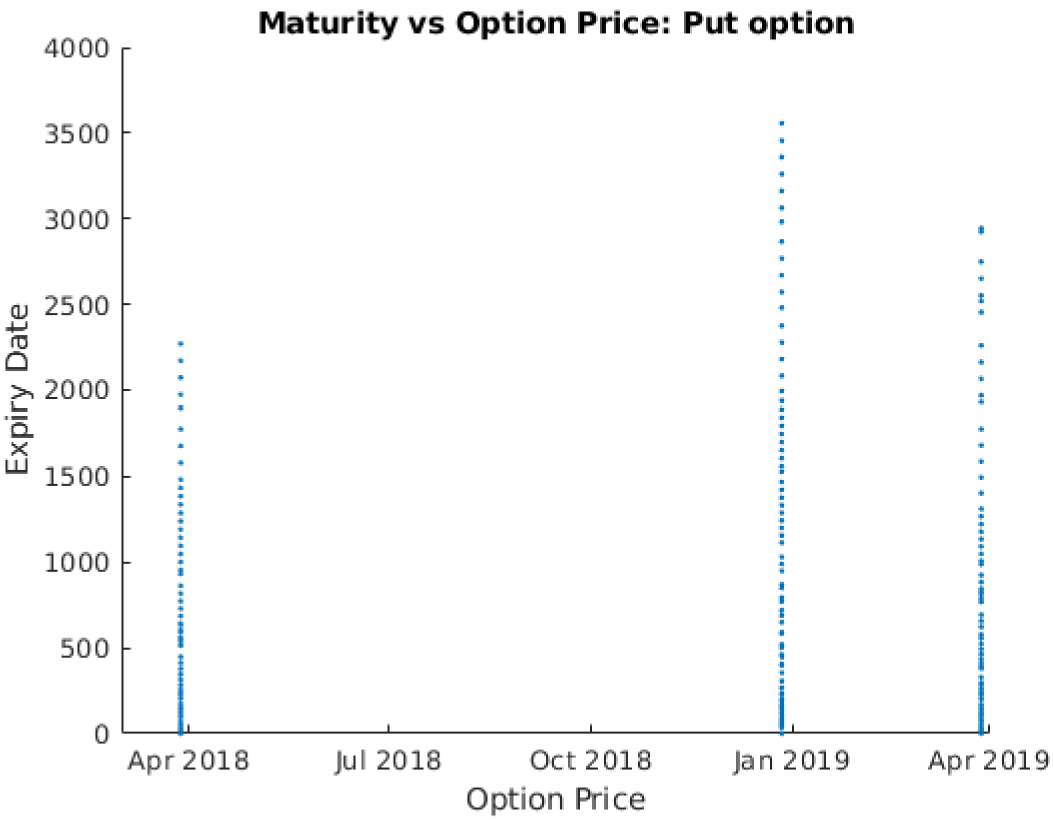



Strike price vs Option Price: Call option
Option Price
7000
6000
5000
4000
3000
2000
1000
0
2000
4000
6000
8000
10000
12000
14000
16000
Strike Price

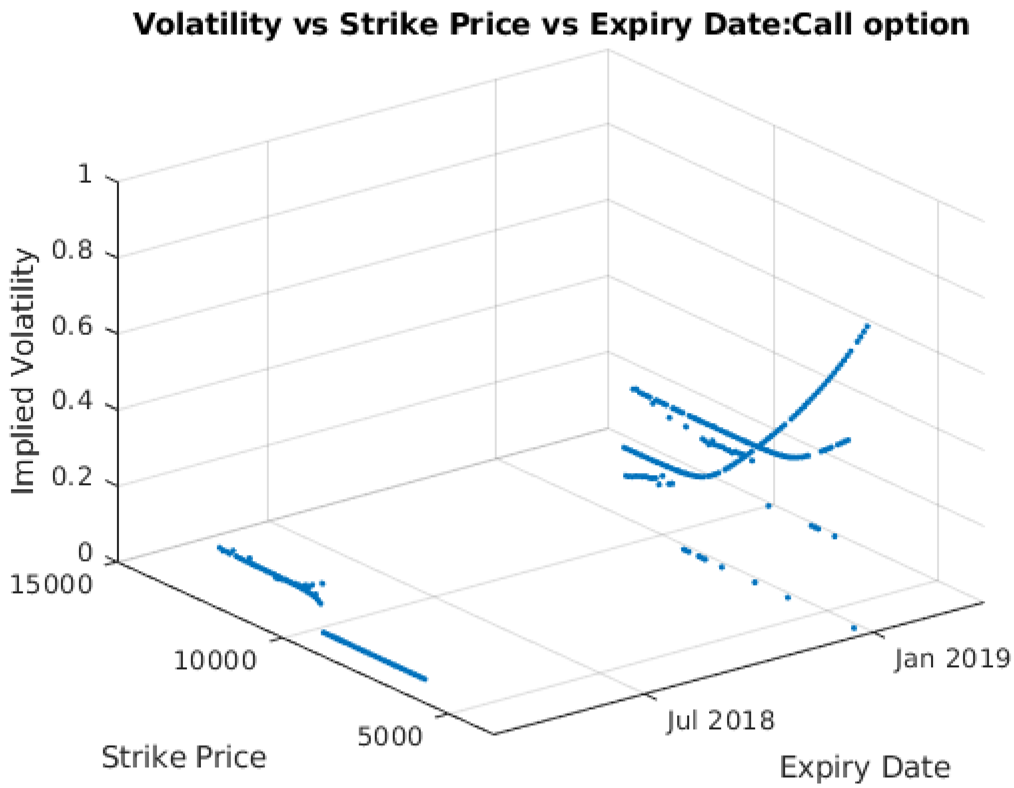

Maturity vs Option Price: Call option
Expiry Date
7000
6000
5000
4000
3000
2000
1000
0
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Option Price

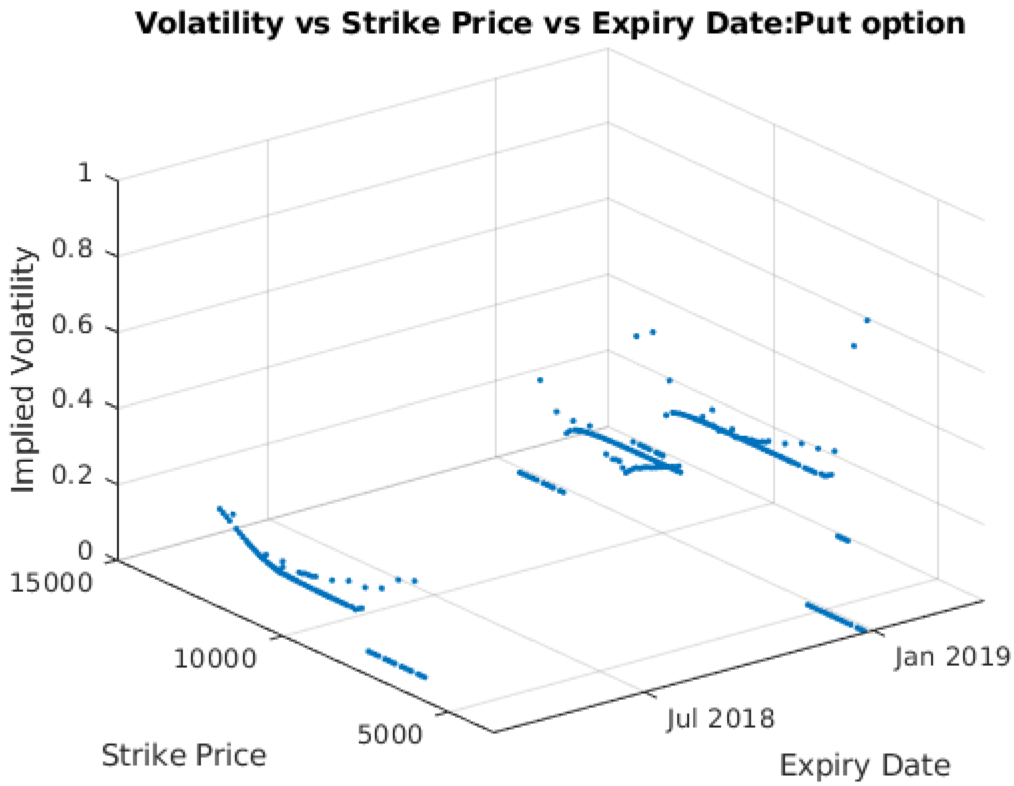

Maturity vs Strike price vs Option Price: Put option
Option Price
4000
3000
2000
1000
0
15000
10000
5000
Strike Price
Jul 2018
Jan 2019
Expiry Date


Strike price vs Option Price: Put option
Option Price
4000
3500
3000
2500
2000
1500
1000
500
0
2000
4000
6000
8000
10000
12000
14000
16000
Strike Price


Maturity vs Option Price: Put option
4000
3500
3000
2500
2000
1500
1000
500
0
Expiry Date
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Option Price

(b)


Volatility vs Strike Price vs Expiry Date:Call option
1
0.8
0.6
0.4
0.2
0
Implied Volatility
15000
10000
5000
Strike Price
Jul 2018
Jan 2019
Expiry Date



(c)

Start Date	End Date	Historical	ImpliedVolatility
01-Jan-2018	28-Mar-2018	NaN	0.092
01-Jan-2019	28-Mar-2019	0.107	0.141
01-Nov-2018	27-Dec-2018	0.135	0.810
02-Nov-2018	27-Dec-2018	0.137	0.500
01-Jan-2018	28-Mar-2018	NaN	0.047
01-Jan-2019	28-Mar-2019	0.107	0.047
01-Nov-2018	27-Dec-2018	0.135	0.178
01-Nov-2018	27-Dec-2018	0.135	0.182

```
Solving for stockoptiondata

Stock taken is WIPRO

(a)
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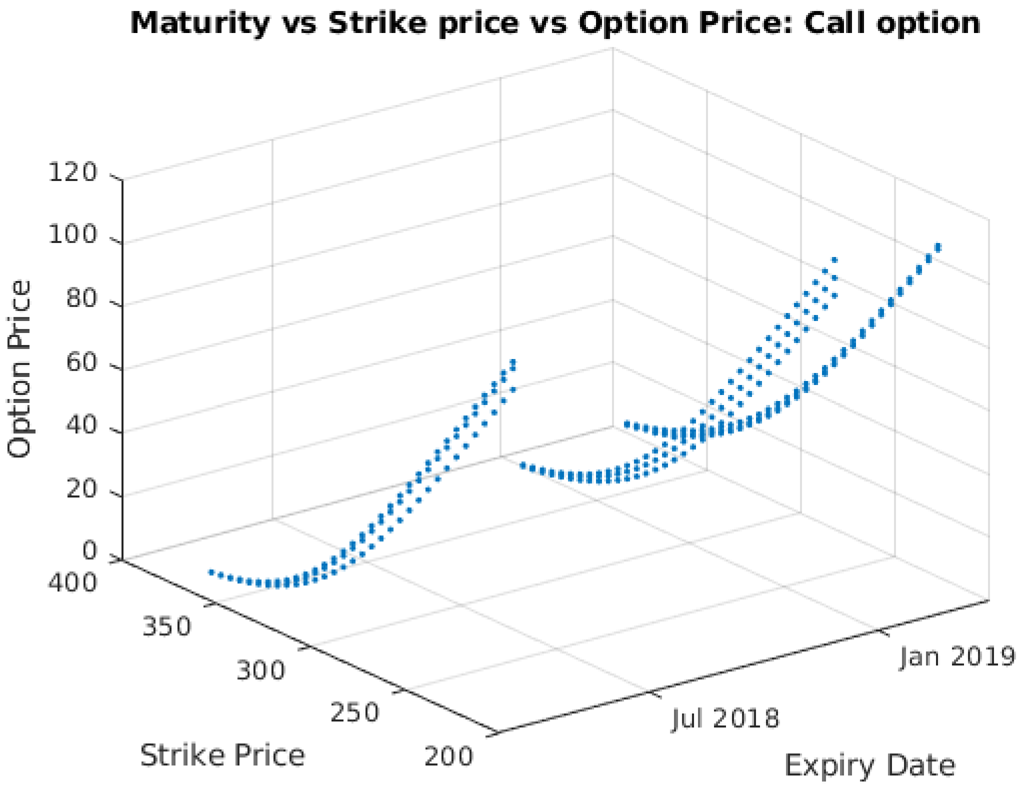
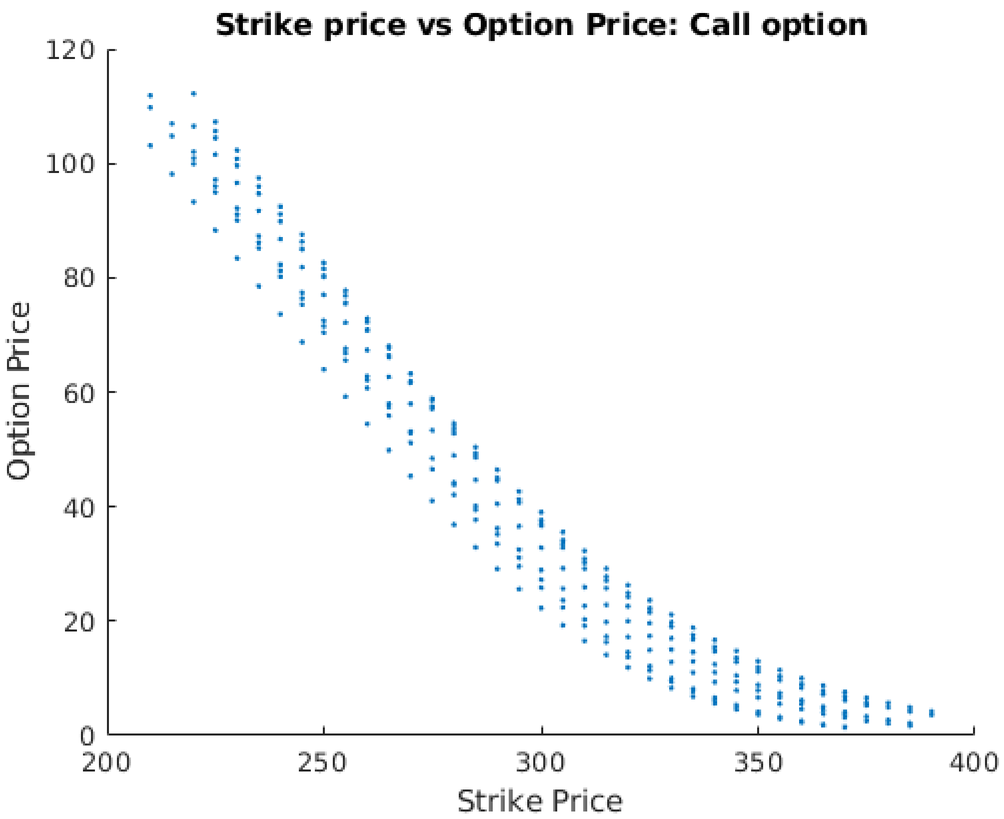
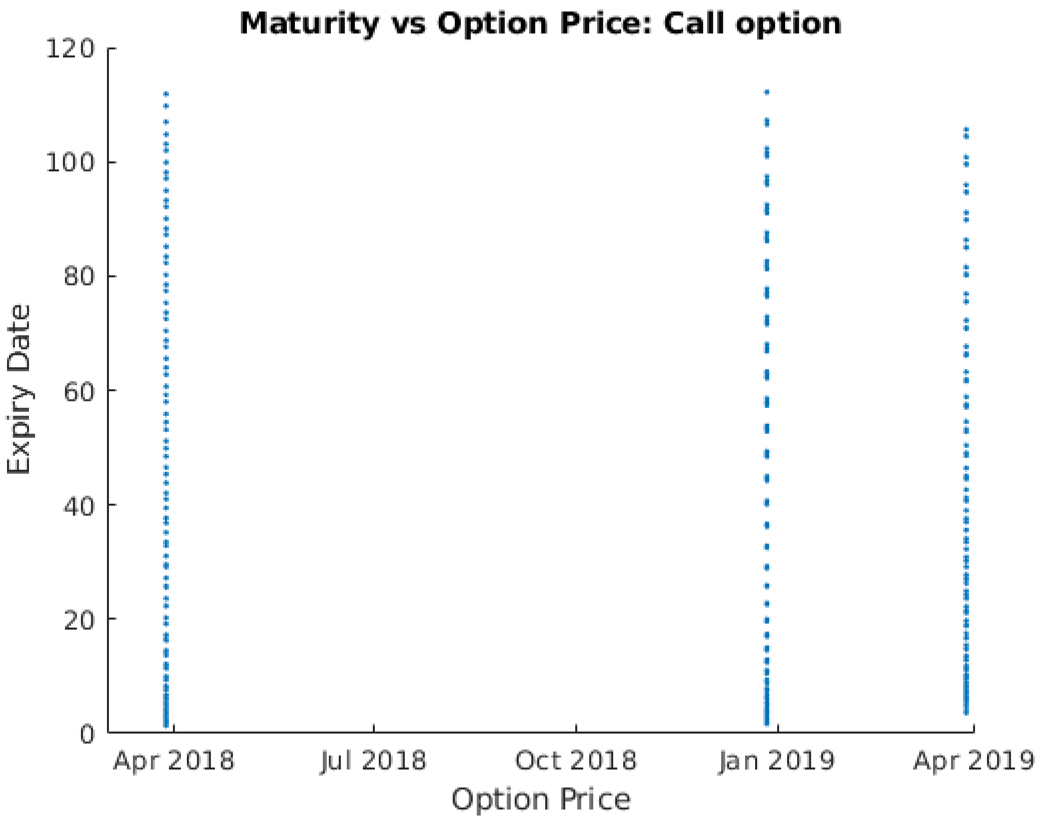
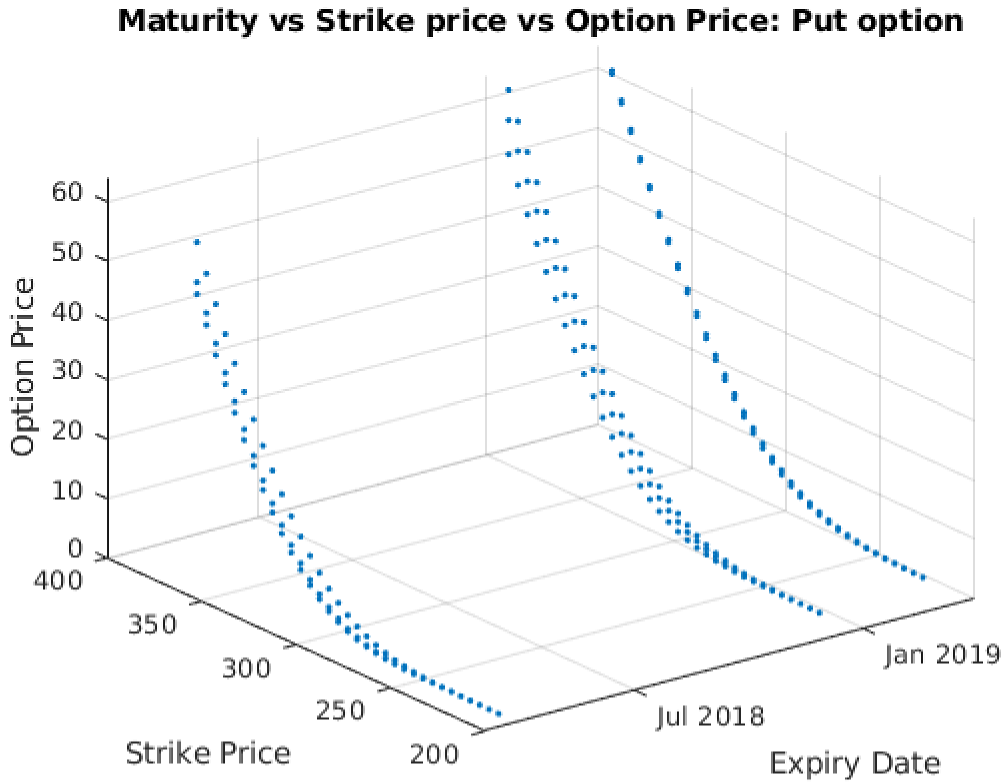
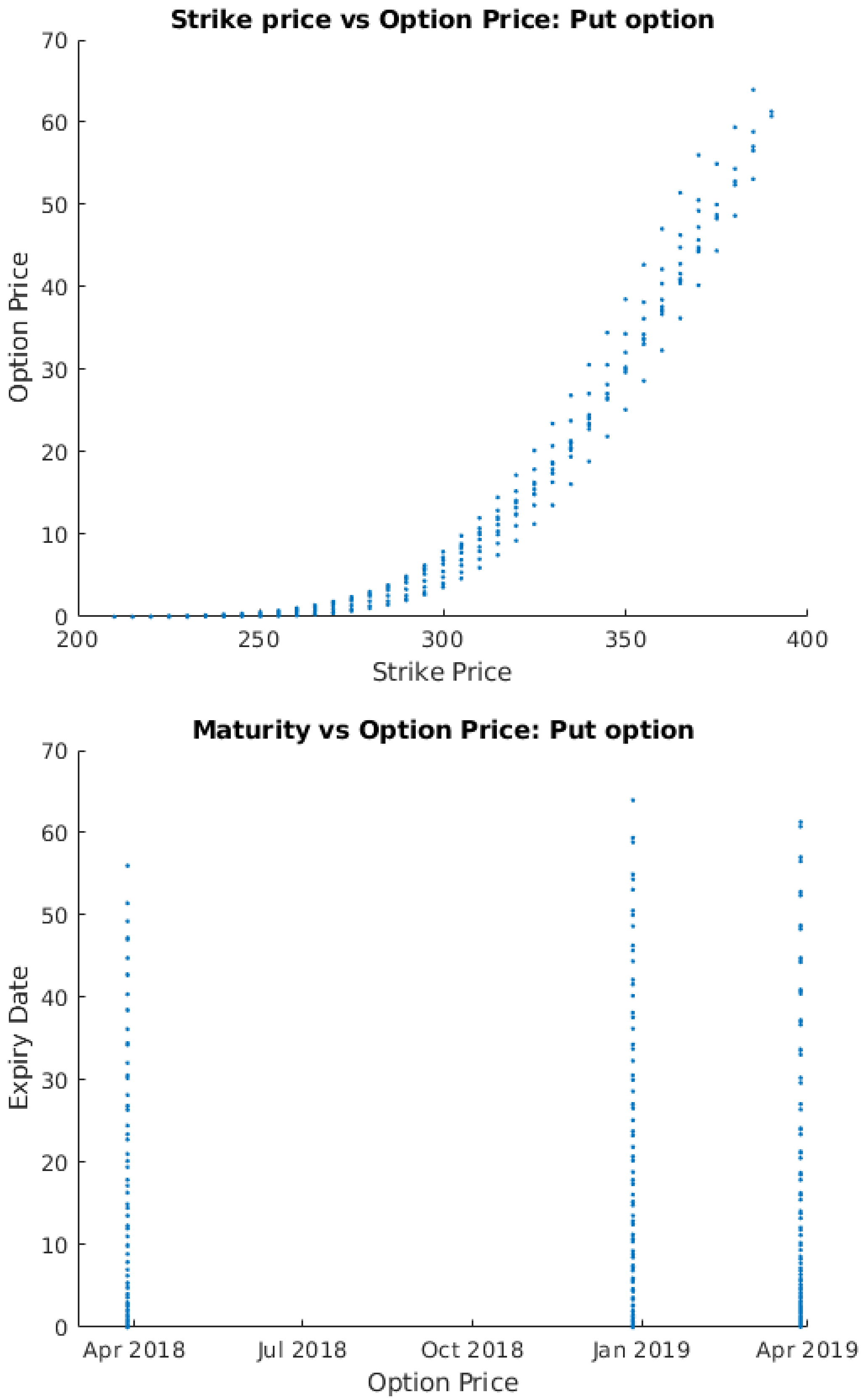


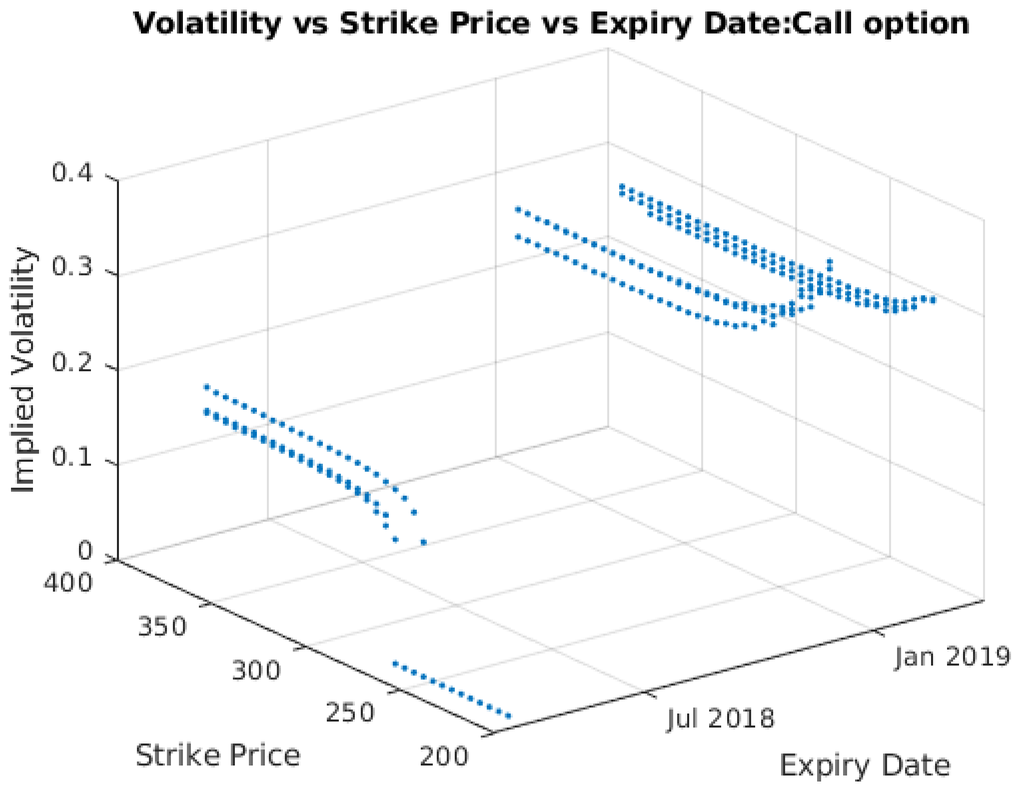


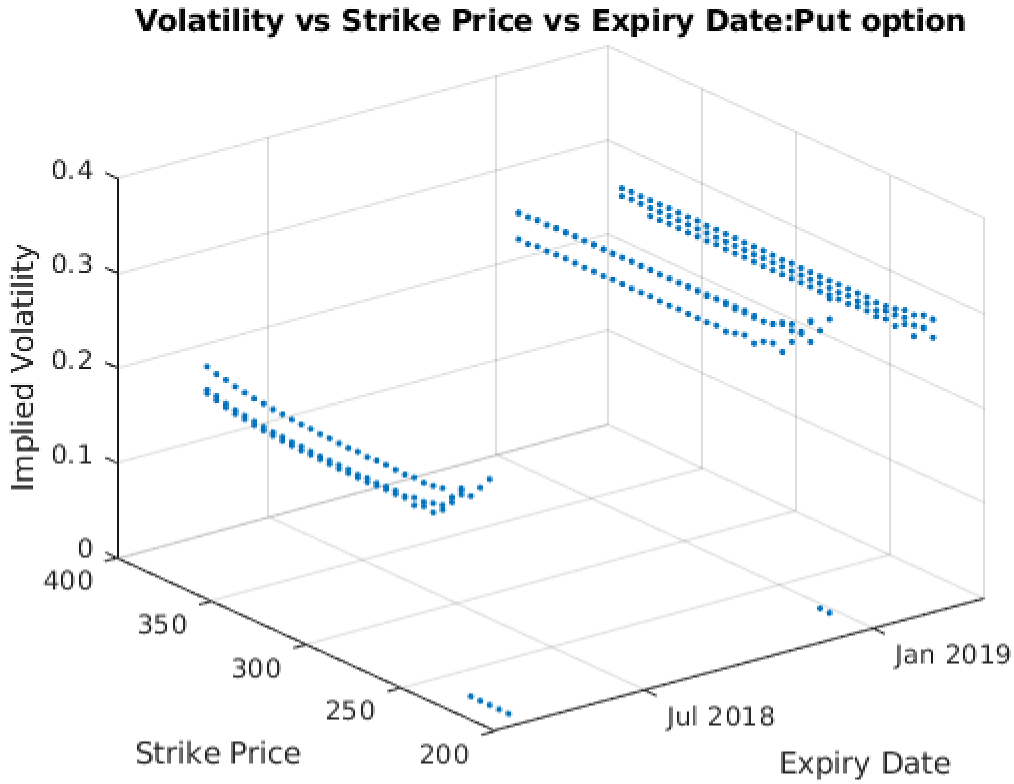

Maturity vs Option Price: Call option
120
100
80
60
40
20
0
Expiry Date
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019
Option Price


Maturity vs Strike price vs Option Price: Put option
60
50
40
30
20
10
0
Option Price
400
350
300
250
200
Strike Price
Jul 2018
Jan 2019
Expiry Date


Strike price vs Option Price: Put option
Option Price
Strike Price
0
10
20
30
40
50
60
70
200
250
300
350
400
Maturity vs Option Price: Put option
Expiry Date
Option Price
Apr 2018
Jul 2018
Oct 2018
Jan 2019
Apr 2019

(b)


Volatility vs Strike Price vs Expiry Date:Call option
Implied Volatility
0
0.1
0.2
0.3
0.4
400
350
300
250
200
Strike Price
Jul 2018
Jan 2019
Expiry Date


Volatility vs Strike Price vs Expiry Date:Put option
Implied Volatility
0
0.1
0.2
0.3
0.4
400
350
300
250
200
Strike Price
Jul 2018
Jan 2019
Expiry Date

(c)

Start Date	End Date	Historical	ImpliedVolatility
01-Jan-2018	28-Mar-2018	0.244	0.000
03-Jan-2018	28-Mar-2018	0.241	0.000
03-Jan-2019	28-Mar-2019	0.298	0.248
05-Nov-2018	27-Dec-2018	0.286	0.277
01-Jan-2018	28-Mar-2018	0.244	0.047
01-Jan-2019	28-Mar-2019	0.293	0.272
01-Nov-2018	27-Dec-2018	0.281	0.047
05-Nov-2018	27-Dec-2018	0.286	0.272