a Bagging

a.1 depth = 3 and bag size = 10

```
CONFUSION MARTIX
[   +ve  -ve
+ve [815.  29.]
-ve [ 24. 1163.]]
```

a.2 depth = 3 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [815.  29.]
-ve [ 57. 1130.]]
```

a.3 depth = 5 and bag size = 10

```
CONFUSION MARTIX
[   +ve  -ve
+ve [841.  3.]
-ve [ 0. 1187.]]
```

a.4 depth = 5 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [844.  0.]
-ve [ 4. 1183.]]
```

Discussed with Sai Ram Chappidi

b Boosting

b.1 depth = 1 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [793.  51.]
-ve [ 176. 1011.]]
```

b.2 depth = 1 and bag size = 40

```
CONFUSION MARTIX
[   +ve  -ve
+ve [793.  51.]
-ve [ 176. 1011.]]
```

b.3 depth = 2 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [844.  0.]
-ve [ 206. 981.]]
```

b.4 depth = 2 and bag size = 40

```
CONFUSION MARTIX
[   +ve  -ve
+ve [844.  0.]
-ve [ 206. 981.]]
```

Discussed with Sai Ram Chappidi

c scikit-learn

Confusion matrices for bagging and boosting obtained on the mushroom dataset using scikit-learn bagging and AdaBoost Learners.

c.1 bagging

c.1.1 depth = 3 and bag size = 10

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1102.  85.]
-ve [   4.  840.]]
```

c.1.2 depth = 3 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1102.  85.]
-ve [   4.  840.]]
```

c.1.3 depth = 5 and bag size = 10

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1187.  0.]
-ve [  24. 820.]]
```

c.1.4 depth = 5 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1187.  0.]
-ve [  24. 820.]]
```

c.2 AdaBoost

c.2.1 depth = 1 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1185.  2.]
-ve [   2. 842.]]
```

c.2.2 depth = 1 and bag size = 40

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1187.  0.]
-ve [   0. 844.]]
```

c.2.3 depth = 2 and bag size = 20

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1187.  0.]
-ve [   0. 844.]]
```

c.2.4 depth = 2 and bag size = 40

```
CONFUSION MARTIX
[   +ve  -ve
+ve [1187.  0.]
-ve [   0. 844.]]
```

Scikit's performance is much better. It is a lot faster than my implementation and is also has greater true positives. It has better learning ability. I think there are some issues with my boosting implementation.