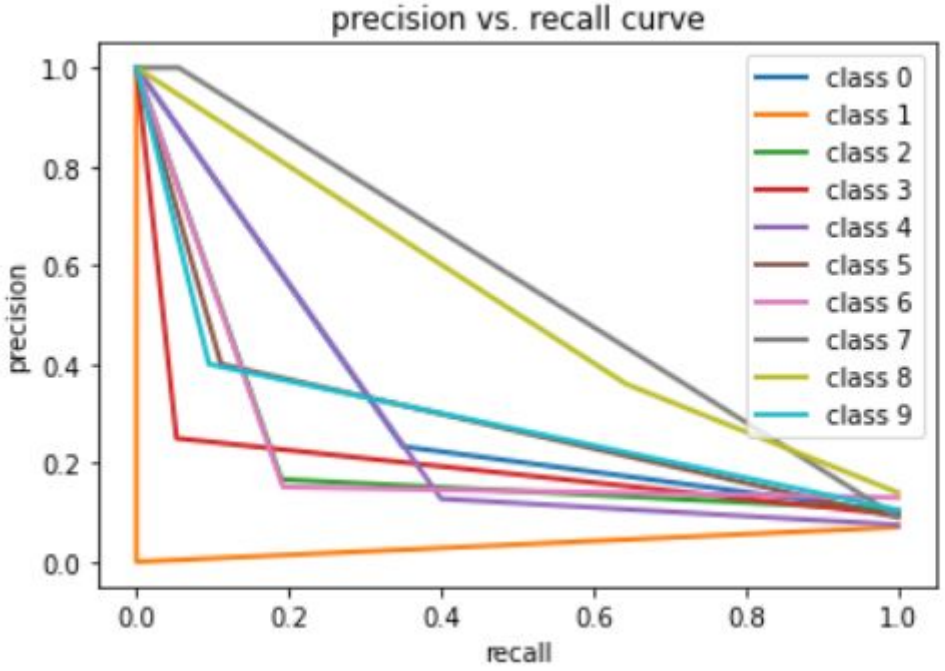
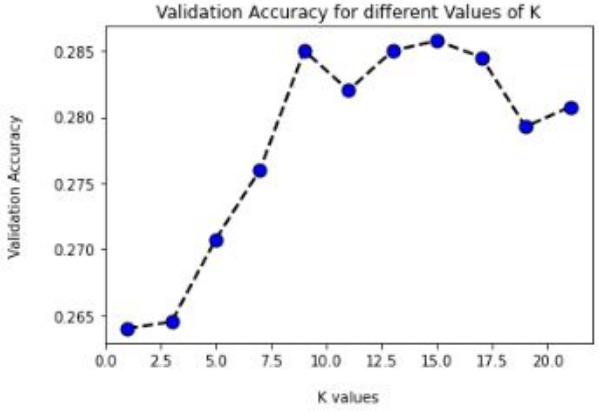
S20190010060_AssignML01



	precision	recall	f1-score	support
0	0.36	0.39	0.37	80
1	0.00	0.00	0.00	66
2	0.20	0.52	0.29	81
3	0.39	0.09	0.15	78
4	0.16	0.39	0.22	71
5	0.35	0.11	0.16	75
6	0.32	0.31	0.31	95
7	0.50	0.05	0.09	78
8	0.38	0.71	0.49	84
9	0.61	0.15	0.24	92
accuracy			0.28	800
macro avg	0.32	0.27	0.23	800
weighted avg	0.34	0.28	0.24	800

S20190010060_AssignML01

```
[[31  0 10  0 10  0  2  0 25  2]
 [ 4  0 10  2 17  1 12  0 17  3]
 [14  0 42  0 12  3  5  0  5  0]
 [ 3  0 30  7 15  5 15  0  2  1]
 [ 3  0 24  1 28  0  6  0  9  0]
 [ 8  0 18  1 25  8 11  0  4  0]
 [ 1  0 35  2 26  0 29  0  2  0]
 [ 5  0 22  3 27  2  7  4  6  2]
 [ 8  0  4  1  7  2  0  1 60  1]
 [10  1 15  1 11  2  5  3 30 14]]
```



BEST K AND TEST ACCURACY

```
best_k=15
y_hat_test=knn_from_scratch(x_test,x_train,y_train,best_k)
print(accuracy_score(y_test, y_hat_test))
```

```
0.27875
```

TEST ERROR

```
from sklearn.metrics import  mean_absolute_error,mean_squared_error

print(" TEST Mean Absolute Error= ", mean_absolute_error(y_test, y_hat_test))
print("\n TEST Mean Squared Error= ", mean_squared_error(y_test, y_hat_test))
```

```
 TEST Mean Absolute Error=  115.415

 TEST Mean Squared Error=  12.1225
```