Assignment 3

Group members

Rakesh Katkam **Saiteja Sirikonda** **Neha Pulipati**

Question 1(Human Activity Dataset)

Training samples - 7352
Test samples – 2947
K=7

	fitknn function	Implemented algorithm
Accuracy	**88.73%**	**90.3%**
Time taken to execute	**13 seconds**	**1647 seconds**

We have used fitknn function to find nearest neighbors. The distance function used is 'Euclidean distance. We have also implemented the search algorithm without using the built-in function. In this code the Euclidean distance is calculated and the voting among nearest neighbors is performed using mode function available in matlab.

Question 2(VidTIMIT dataset)

Training samples – 3500
Test samples – 1000

Part 1 (K-nearest neighbor, K=7)

	fitknn function	Implemented algorithm
Accuracy	**98.5%**	**98.4%**
Time taken to execute	**4.7 seconds**	**41.3 seconds**

Part2 (Neural network, Network size = 25)

Accuracy = 98.25%
Time taken to execute – 13.5 seconds

Part 1 is implemented using fitknn function and without using built in function.
In part 2 'Patternnet' function is used to train the neural network and the network is tested several times with the same test data. The average accuracy is mentioned above.