Report for Assignment 3 Question 3.2

1. **Mean vectors of training samples for each class(LDA&QDA) averaged over 10 splits**

   avg_Mu =

4.9925	3.4090	1.4552	0.2412
5.9188	2.7628	4.2555	1.3221
6.5771	2.9760	5.5464	2.0306

2. **Variances of all the 4 dimensions (diagonal terms of covariance matrix) averaged over 10 splits (for QDA)**

   var_matrix =

1.2595	2.4939	3.7941
1.5132	1.0201	1.1168
0.2896	2.1196	2.9002
0.0956	0.3971	0.7638

3. **Overall Variances of all the 4 dimensions averaged over 10 splits (for LDA)**

avg_Sigmapooled_LDA =

$$
\begin{array}{rrrr}
0.7195 & -0.0495 & 1.3288 & 0.5378 \\
-0.0495 & 0.1893 & -0.3358 & -0.1243 \\
1.3288 & -0.3358 & 3.1752 & 1.3216 \\
0.5378 & -0.1243 & 1.3216 & 0.5925
\end{array}
$$

4. **Mean of all 10 test CCRs**

For QDA –
mean_CCR_QDA =   0.9760

For LDA –
mean_CCR_LDA = 0.8660

5. Standard Deviation of all 10 test CCRs

For QDA –

std_dev_QDA = 0.0207

For LDA -
std_dev_LDA = 0.0389

6. Confusion matrix for best and worst CCR for LDA

confusionmat_LDA_best =

22   0   0

 0 12   1

 0   3 12

confusionmat_LDA_worst =

$$
\begin{array}{ccc}
18 & 0 & 0 \\
0 & 13 & 4 \\
0 & 5 & 10
\end{array}
$$