In this project you will implement a Minimum Risk Bayes Theoretic classifier. Train the classifier using the 4-dimensional, 2-class Iris training set and determine the classification accuracy using the validation set.

Assume the following:

- All conditional density functions are multivariate Gaussian
- Each class has its own covariance matrix
- Equally likely prior probabilities
- 0-1 loss function

You may use *off-the-shell* functions to compute the mean and the covariance, but obviously you are not allowed to use the actual algorithm such as *sklearn.discriminant_analysis*.

Print the actual and predicted class labels.

Print the average classification accuracy. Average accuracy should be at least 90%.

```
y=1, y_hat=1
y=3, y_hat=3
y=1, y_hat=1
y=2, y_hat=2
y=2, y_hat=2
y=1, y_hat=1
y=2, y_hat=2
y=1, y_hat=1
y=2, y_hat=3
y=3, y_hat=3
y=3, y_hat=3
y=3, y_hat=3
y=2, y_hat=2
y=3, y_hat=3
y=1, y_hat=1
Average classification accuracy =  0.9333
```

Submit your python code (*.ipynb* file). Your code must run on Google Colab.

Discussing this project with other students is highly recommended but you have to submit your own solution.