**Problem: CART-RF-ANN**

An Insurance firm providing tour insurance is facing higher claim frequency. The management decides to collect data from the past few years. You are assigned the task to make a model which predicts the claim status and provide recommendations to management. Use CART, RF & ANN and compare the models' performances in train and test sets.

**1.1** Read the data, do the necessary initial steps, and exploratory data analysis (Univariate, Bi-variate, and multivariate analysis).  
**1.2** Data Split: Split the data into test and train, build classification model CART, Random Forest, Artificial Neural Network  
**1.3** Performance Metrics: Comment and Check the performance of Predictions on Train and Test sets using Accuracy, Confusion Matrix, Plot ROC curve and get ROC\_AUC score, classification reports for each model.   
**1.4** Final Model: Compare all the models and write an inference which model is best/optimized.  
**1.5** Inference: Based on the whole Analysis, what are the business insights and recommendations

Dataset for Problem 2: [insurance\_part2\_data-1.csv](https://olympus.mygreatlearning.com/courses/78181/files/6443077/download?verifier=tJVLXmi4lZ14NjeNbkLgocttKMh7tdxfrbVOyqVI&wrap=1)

**Attribute** **Information:**

1. Target: Claim Status (Claimed)  
2. Code of tour firm (Agency\_Code)  
3. Type of tour insurance firms (Type)  
4. Distribution channel of tour insurance agencies (Channel)  
5. Name of the tour insurance products (Product)  
6. Duration of the tour (Duration in days)  
7. Destination of the tour (Destination)  
8. Amount worth of sales per customer in procuring tour insurance policies in rupees (in 100’s)  
9. The commission received for tour insurance firm (Commission is in percentage of sales)  
10.Age of insured (Age)