**Loan Approval Prediction using Machine Learning**

LOANS are the major requirement of the modern world. By this only, Banks get a major part of the total profit. It is beneficial for students to manage their education and living expenses, and for people to buy any kind of luxury like houses, cars, etc.

But when it comes to deciding whether the applicant’s profile is relevant to be granted with loan or not. Banks have to look after many aspects.

So, here we will be using Machine Learning with [Python](https://www.geeksforgeeks.org/python-programming-language/) to ease their work and predict whether the candidate’s profile is relevant or not using key features like Marital Status, Education, Applicant Income, Credit History, etc.

**Importing Libraries and Dataset**

Firstly we have to import libraries :

* [Pandas](https://www.geeksforgeeks.org/python-pandas-dataframe/) – To load the Dataframe
* [Matplotlib](https://www.geeksforgeeks.org/python-matplotlib-an-overview/) – To visualize the data features i.e. barplot
* [Seaborn](https://www.geeksforgeeks.org/introduction-to-seaborn-python/) – To see the correlation between features using heatmap

**Model Training and Evaluation**

As this is a classification problem so we will be using these models :

* [KNeighborsClassifiers](https://www.geeksforgeeks.org/k-nearest-neighbor-algorithm-in-python/)
* [RandomForestClassifiers](https://www.geeksforgeeks.org/random-forest-classifier-using-scikit-learn/)
* [Support Vector Classifiers (SVC)](https://www.geeksforgeeks.org/classifying-data-using-support-vector-machinessvms-in-python/)
* [Logistics Regression](https://www.geeksforgeeks.org/understanding-logistic-regression/)

**Conclusion:**

Accuracy score of  RandomForestClassifier = 98.04469273743017

Accuracy score of  KNeighborsClassifier = 78.49162011173185

Accuracy score of  SVC = 68.71508379888269

Accuracy score of  LogisticRegression = 80.44692737430168

Prediction on test set:

Accuracy score of  RandomForestClassifier = 82.5

Accuracy score of  KNeighborsClassifier = 63.74999999999999

Accuracy score of  SVC = 69.16666666666667

Accuracy score of  LogisticRegression = 80.83333333333333

Random Forest Classifier is giving the best accuracy with an accuracy score of 82% for the testing dataset. And to get much better results ensemble learning techniques like [Bagging](https://www.geeksforgeeks.org/ml-bagging-classifier/) and [Boosting](https://www.geeksforgeeks.org/xgboost/) can also be used.