

ML ASSIGNMENT OUTPUT SCREENSHOTS

Team ID : 16

```
PS C:\Users\Chetan\Downloads\ML_MINI_PROJECT\Insincere_Question> python main.py
Loading dataset from train.csv...
Dataset Loaded: 5000 samples
qid      question_text  target
443046   56d324bb1e2c29f43b12  What is the most effective classroom managemen...  0
947549   b9ad893dc78c577f8a63  Can I study abroad after 10th class from Bangl...  0
523769   6689ebaeeb65b209a412  How can I make friends as a college junior?     0
949821   ba1e2c4a0fef09671516  How do I download free APK Minecraft: Pocket E...  0
1030397 c9ea2b69bf0d74626f46  Like Kuvera, is "Groww" also a free online inv...  0
Cleaning text...
Applying TF-IDF vectorization...
Logistic Regression Done -> Accuracy: 91.7%, FP=50, FN=33
Random Forest Done -> Accuracy: 93.5%, FP=0, FN=65
C:\Users\Chetan\AppData\Local\Programs\Python\Python312\Lib\site-packages\sklearn\network_multilayer_perceptron.py:781: ConvergenceWarning: Stochastic O
ptimizer: Maximum iterations (20) reached and the optimization hasn't converged yet.
  warnings.warn(
Light Neural Network Done -> Accuracy: 93.3%, FP=6, FN=61

Model Performance Summary:
| Model          | Accuracy | Precision | Recall | F1-Score | False Positives | False Negatives |
|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|:-----:|
| Logistic Regression | 91.7% | 0.41 | 0.51 | 0.46 | 50 | 33 |
| Random Forest      | 93.5% | 1.0 | 0.04 | 0.08 | 0 | 65 |
| Light Neural Network | 93.3% | 0.54 | 0.1 | 0.17 | 6 | 61 |

Best Performing Model: Logistic Regression
F1-Score: 0.46, FP: 50, FN: 33

Saved Best Model (Logistic Regression) and Vectorizer Successfully!
```



