

ML ASSIGNMENT OUTPUT SCREENSHOTS

Team ID : 16

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PS C:\Users\Chetan\Downloads\ML_MINI_PROJECT\Insincere_Question> python main.py
Loading dataset from train.csv...
Dataset Loaded: 10000 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: 89.9%, FP=135, FN=67
Random Forest Done -> Accuracy: 93.35%, FP=5, FN=128
C:\Users\Chetan\AppData\Local\Programs\Python\Python312\Lib\site-packages\sklearn\normal_network\_multilayer_perceptron.py:781: ConvergenceWarning: Stochastic Optimizer: Maximum iterations (20) reached and the optimization hasn't converged yet.
  warnings.warn(
Light Neural Network Done -> Accuracy: 92.55%, FP=38, FN=111

Model Performance Summary:

| Model | Accuracy | Precision | Recall | F1-Score | False Positives | False Negatives |
|:-----|:-----|:-----|:-----|:-----|:-----|:-----|
| Logistic Regression | 89.9% | 0.35 | 0.52 | 0.42 | 135 | 67 |
| Random Forest | 93.35% | 0.71 | 0.09 | 0.15 | 5 | 128 |
| Light Neural Network | 92.55% | 0.43 | 0.21 | 0.28 | 38 | 111 |

Best Performing Model: Logistic Regression
F1-Score: 0.42, FP: 135, FN: 67

Saved Best Model (Logistic Regression) and Vectorizer Successfully!
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