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BVRIT HYDERABAD College of Engineering for Women

DEPARTMENT OF INFORMATION TECHNOLOGY

Banknote Authentication

Team No: 8

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AGENDA

- PROBLEM STATEMENT
- INFORMATION ABOUT DATASET
- PACKAGES AND TOOLS
- ALGORITHM USED AND ACCURACY
- FRAMEWORK USED FOR DEPLOYMENT
- IMPLEMENTATION
- EXECUTION
- CONTRIBUTION OF TEAM

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PROBLEM STATEMENT

- Develop a machine learning model, leveraging Machine Learning techniques like RandomForest, to authenticate banknotes based on their features, the goal is to train a model that can accurately predict the authenticity of a banknote based on its variance, skewness, kurtosis, and entropy.
- This project aims to create an accurate banknote verification system to prevent counterfeit currency.

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DATASET

- Our Dataset contains five features
  1.Variance: Variance is a statistical measure that quantifies the spread or dispersion of data points in a dataset.
  2.Skewness: Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable.
  3.Kurtosis: Kurtosis is a statistical measure that describes the "tailedness" of a probability distribution.
  4.Entropy: Entropy is a concept from information theory used to measure the amount of randomness or uncertainty in a dataset.
  5.Class: The "Class" feature typically represents the target variable in a machine learning dataset. Each data point in your dataset is associated with a class label, which can be "Authentic" or "Counterfeit."

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PACKAGES USED

- pandas
- pickle
- sklearn
- warnings
- base64

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ALGORITHM USED AND ACCURACY

RandomForest

```
[4]
    rf = RandomForestClassifier()
    rf.fit(X_train, y_train)

    pred = rf.predict(X_test)

[5]
    score = accuracy_score(y_test, pred)
    print(score)

...  0.9951456310679612
```

- Accuracy using RandomForest is 0.9951456310679612

FRAMEWORKS USED FOR DEPLOYMENT

- Streamlit is an open-source app framework in python language. It helps us create web apps for data science and machine learning. It is compatible with major python libraries such as scikit-learn, numpy, pandas, matplotlib, etc.

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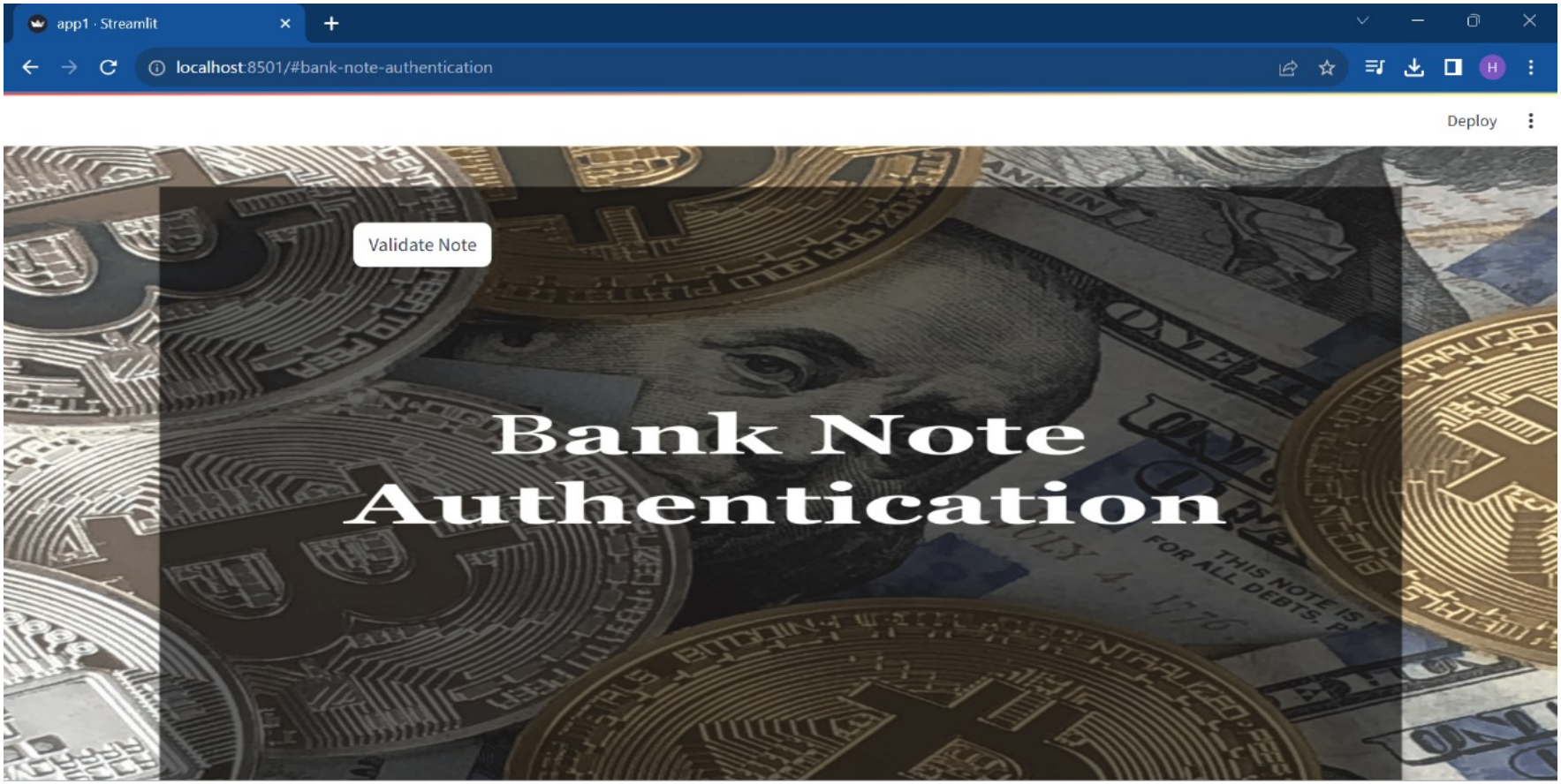
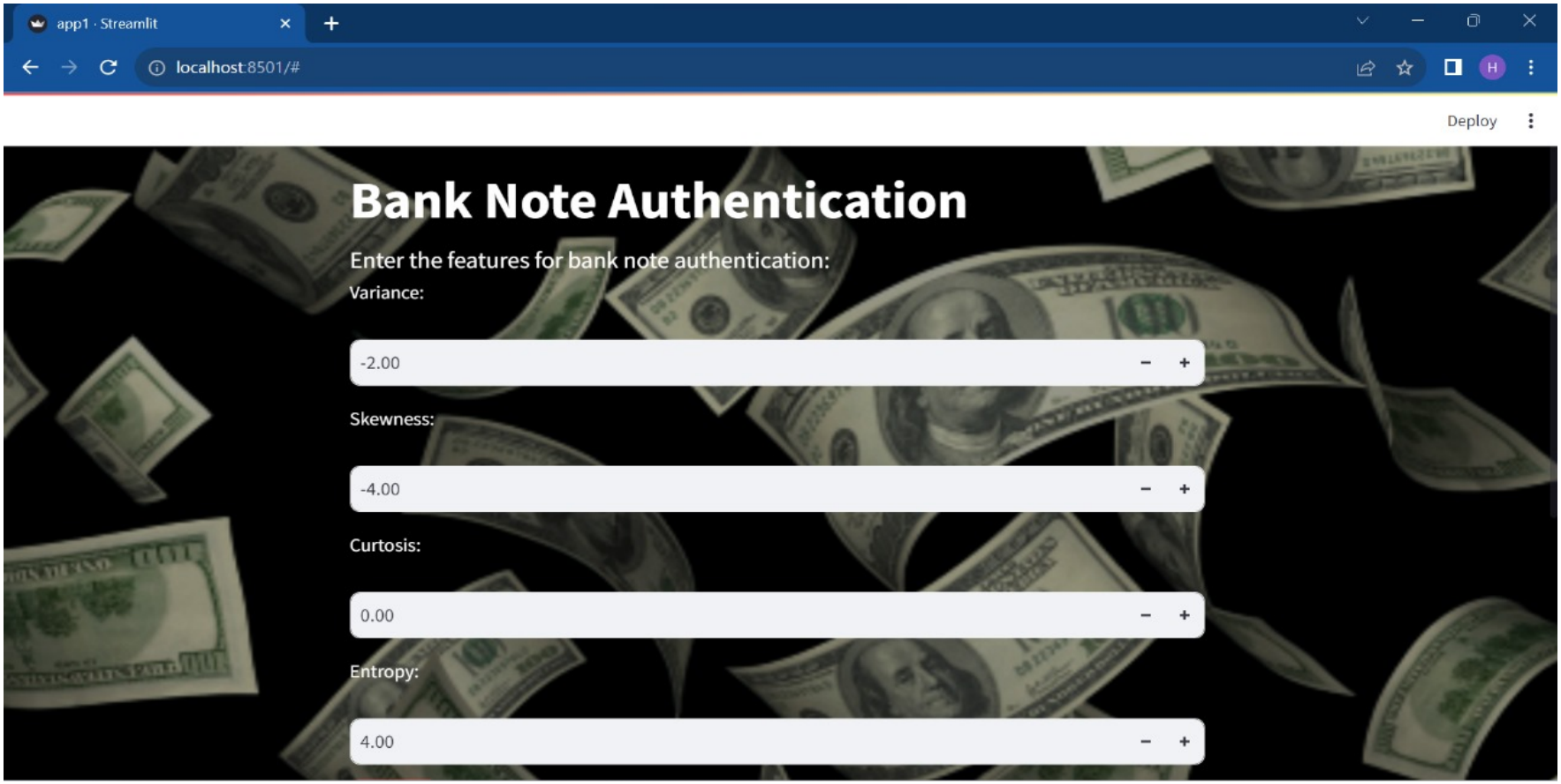
IMPLEMENTATION



IMPLEMENTATION



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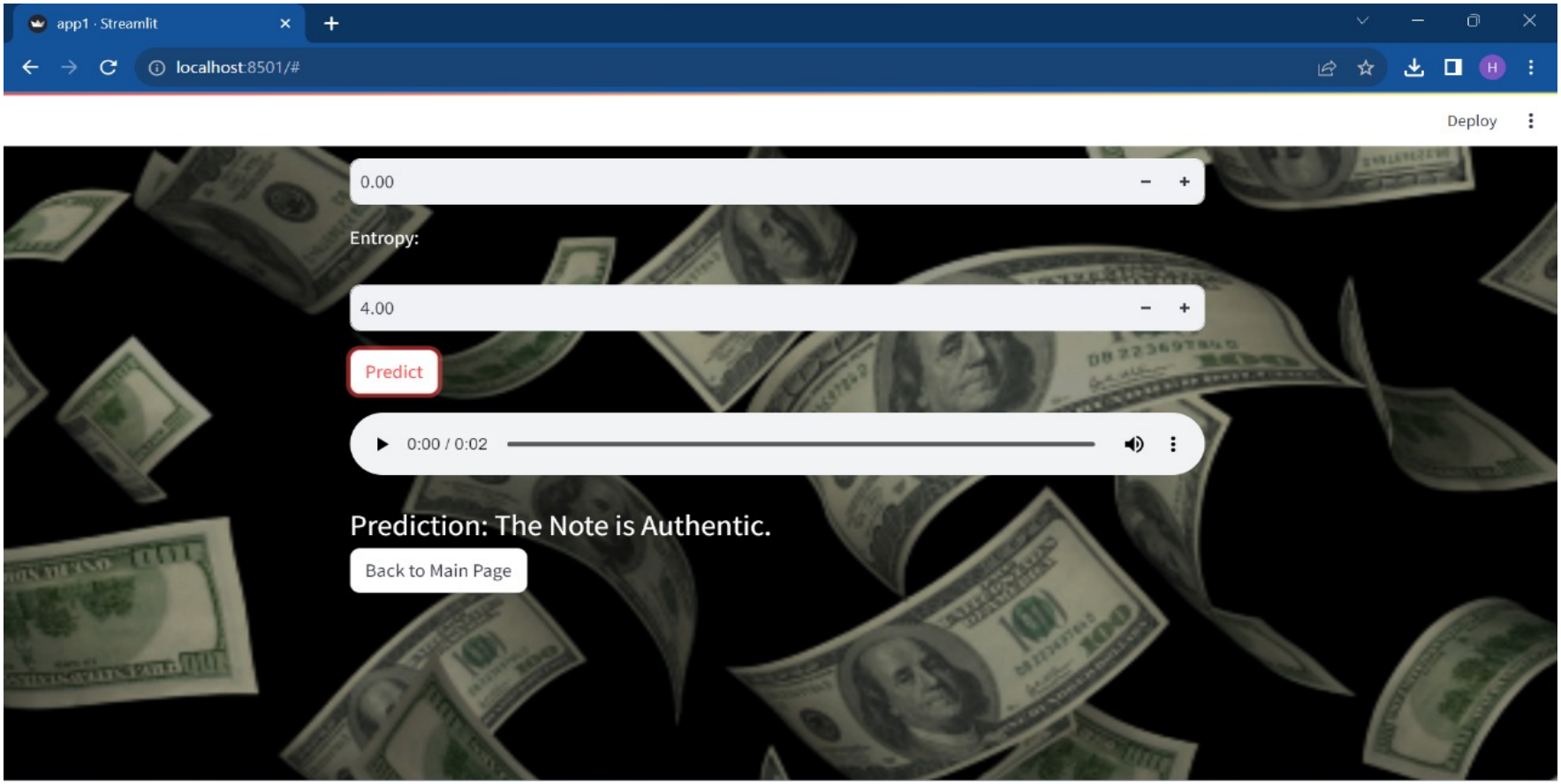
EXECUTION



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CONTRIBUTION OF TEAM

Roll numbers	Contribution
21WH1A12A5	Creation of Streamlit homepage
21WH1A12A6	Development of basic code
21WH1A12A7	Streamlit Background customization and audio feedback
21WH1A12A8	Dataset collection through online mode and audio feedback
21WH1A12A9	Creation of Streamlit main page

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THANK YOU!