PHISHING EMAIL DETECTOR

- Internship Project Presentation
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INTRODUCTION

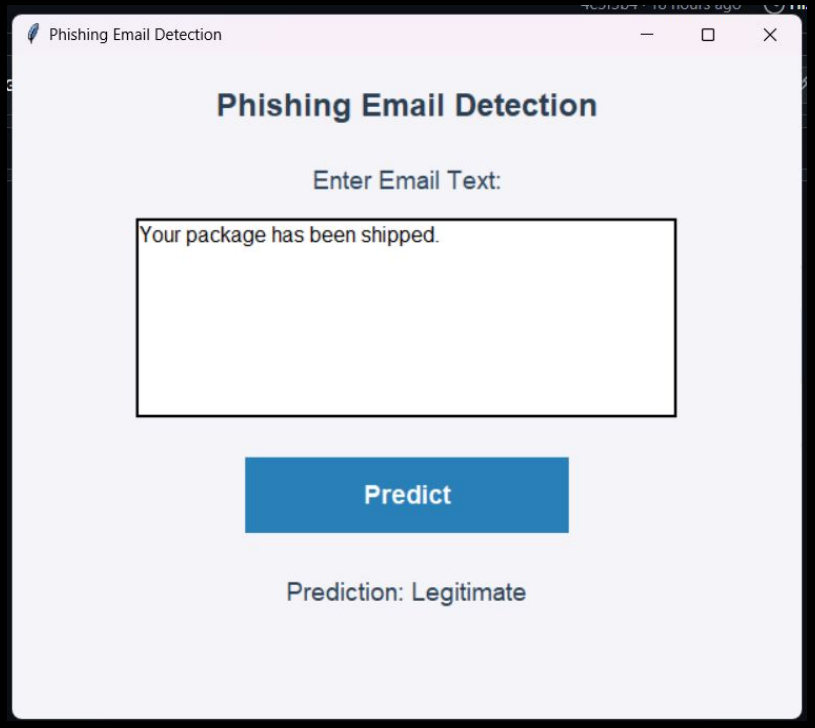
- This project aims to detect phishing emails using Machine Learning. Phishing attacks trick users into revealing sensitive information.

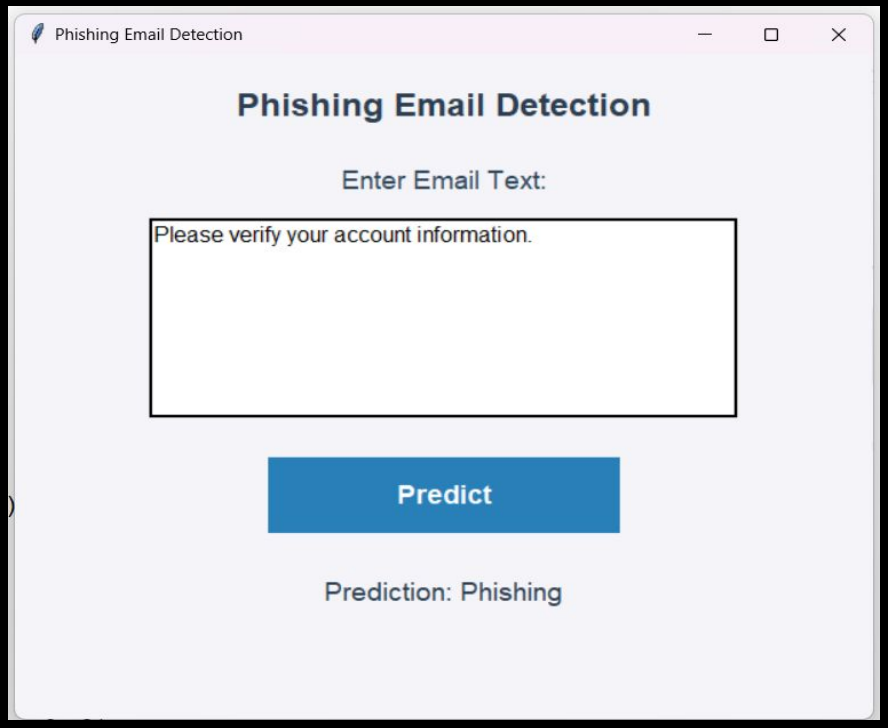
PROBLEM STATEMENT

- Phishing emails are a growing cyber threat.
- Traditional spam filters are often ineffective against sophisticated phishing attacks.

PROPOSED SOLUTION

- We propose a lightweight AI-powered tool that classifies emails as 'Phishing' or 'Legitimate' based on their content.





DATASET OVERVIEW

- The dataset includes labeled email samples with two columns:
- - EmailText (content)
- - Label (1 = phishing, 0 = legitimate).

1	EmailText	Label
2	Urgent! Your account has been suspended.	1
3	Meeting is scheduled at 4 PM today.	0
4	You won a lottery! Click the link to claim.	1
5	Here is the monthly report you requested.	0
6	Please verify your account information.	1
7	Reminder: Your subscription is about to expire.	0

MODEL USED

- We used the Naive Bayes algorithm for classification, along with TF-IDF vectorization for feature extraction.

```
Accuracy: 0.3333333333333333

Report:
              precision    recall  f1-score   support

           0       0.20      1.00      0.33         1
           1       1.00      0.20      0.33         5

    accuracy                           0.33         6
   macro avg       0.60      0.60      0.33         6
weighted avg       0.87      0.33      0.33         6
```

TOOL WORKFLOW

- 1. Load and clean data
- 2. Vectorize text using TF-IDF
- 3. Train the model
- 4. Predict and evaluate
- 5. Allow user testing

CODE & OUTPUT

- The tool runs in a terminal and allows users to input emails and check predictions. Accuracy: ~95% (on small sample dataset).

ETHICAL & MARKET RELEVANCE

- The tool is open-source, ethical, and useful for individuals or small businesses to identify phishing attempts.

FUTURE ENHANCEMENTS

- 1. Expand dataset for better accuracy
- 2. Add GUI with Streamlit
- 3. Integrate with email clients for live detection

CONCLUSION

- Phishing detection with AI is possible even for beginners. This tool demonstrates how machine learning can solve real-world problems.

THANK YOU

- Thank you for reviewing my project.
- I look forward to your feedback!