**📧 AI-Powered Phishing Email Detector**

*A simple and effective machine learning tool to detect phishing emails and help protect non-tech users from scams.*

**🔍 Project Overview**

This project was developed as part of the **3MTT Knowledge Showcase (July Edition)** to solve a personal cybersecurity challenge I encountered: identifying phishing emails.

The tool uses a **Naive Bayes classifier** trained on real-world email data to classify messages as either **phishing** or **legitimate**.

**🎯 Problem Statement**

Phishing attacks are one of the most common cybersecurity threats, and not everyone especially non-tech users can easily spot suspicious messages.

As a cybersecurity learner in 3MTT Cohort 3, I built this project to:

* Detect common phishing patterns
* Provide warnings for suspicious emails
* Empower small business owners, students, and families to stay safe online

**🛠️ Tech Stack & Tools**

* **Python 3.10+**
* **Scikit-learn**
* **Pandas**
* **Natural Language Processing (NLP)**
* **Streamlit (for optional web deployment)**

**📂 Project Structure**

📁 phishing-detector

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├── dataset/

│ ├── phishing.csv

│ └── legitimate.csv

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├── main.py

├── model.pkl

├── vectorizer.pkl

├── README.md

└── requirements.txt

**🧪 How to Run the Project Locally**

1. **Clone the repository**
2. git clone https://github.com/yourusername/phishing-detector.git
3. cd phishing-detector
4. **Install dependencies**
5. pip install -r requirements.txt
6. **Run the script**
7. python main.py
8. *(Optional)* To launch the Streamlit web app:
9. streamlit run app.py

**🧠 How It Works**

* Emails are cleaned and pre-processed using NLP.
* A **TF-IDF Vectorizer** transforms the email text into numerical features.
* A **Naive Bayes model** predicts whether an email is phishing or safe.

**🎯 Example Use Case**

Paste an email message into the console or web UI, and the model will return:  
✅ **"Safe"** or ⚠️ **"Phishing Suspicion"**

**📌 Learning Outcomes**

* Applied real cybersecurity skills in a meaningful way
* Gained hands-on experience with machine learning and NLP
* Learned how to deploy AI tools that can serve a broader, non-technical audience

**🤝 Credits**

Project by **Shamsuddeen Mohammed**  
3MTT Cohort 3 – Cybersecurity Track  
Fellow ID: FE/23/76664739

**📣 Showcase Details**

This project was built for the [3MTT Knowledge Showcase – July Edition](https://b.link/3MTTShowcase-July) under the category: **AI-Powered Solution**.

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