**Project 1: Phishing Website Detection Tool**

**Problem Statement:** Phishing websites trick users into entering personal data, leading to identity theft and fraud.

**Objective:** Create a script that detects potentially harmful URLs using rule-based logic or machine learning techniques.

**Requirements:**

Python

URL dataset (legitimate & phishing)

Scikit-learn (for ML version)

Pandas, Regex (for rule-based version)

Tkinter (optional GUI)

**Expected Outcome:** A lightweight tool that flags suspicious URLs and helps users avoid

phishing attacks.

**Solution**

Here is a well-structured, clean, and project for Phishing URL Detection Tool using rule-based logic and a modern GUI with Tkinter. In this I’ve added:

* Better code organization
* Modular phishing detection logic
* User input validation

**Project Structure**

save the program as : phishing\_detector.py

* main.py # Main GUI and logic
* README.md # Project description
* samples.txt # Test URLs (optional)

**Program: (main.py)**

import re

import tkinter as tk

from tkinter import messagebox

from urllib.parse import urlparse

def is\_phishing\_url(url):

score = 0

url = url.strip().lower()

if re.search(r'http[s]?://\d+\.\d+\.\d+\.\d+', url):

score += 1

if "@" in url:

score += 1

if len(url) > 75:

score += 1

if '-' in urlparse(url).netloc:

score += 1

phishing\_keywords = ['login', 'verify', 'account', 'bank', 'secure', 'webscr', 'update', 'confirm', 'signin', 'click', 'free', 'password']

if any(word in url for word in phishing\_keywords):

score += 1

risky\_tlds = ['.tk', '.ml', '.ga', '.cf', '.gq', '.xyz']

if any(url.endswith(tld) for tld in risky\_tlds):

score += 1

return "Phishing" if score >= 2 else "Legitimate"

def check\_url():

url = url\_entry.get()

if not url:

messagebox.showwarning("Input Error", "Please enter a URL.")

return

result = is\_phishing\_url(url)

result\_label.config(text=f"Result: {result}", fg="red" if result == "Phishing" else "green")

app = tk.Tk()

app.title("Phishing URL Detector")

app.geometry("420x220")

app.config(bg="#f8f8f8")

tk.Label(app, text="Enter URL to Check:", font=("Arial", 12), bg="#f8f8f8").pack(pady=10)

url\_entry = tk.Entry(app, width=55)

url\_entry.pack()

check\_button = tk.Button(app, text="Check URL", command=check\_url, bg="#007acc", fg="white")

check\_button.pack(pady=10)

result\_label = tk.Label(app, text="Result: ", font=("Arial", 12), bg="#f8f8f8")

result\_label.pack(pady=10)

app.mainloop()

**Phishing URL Detection Tool (README.md)**

A simple Python project that detects phishing websites using rule-based analysis.

## Features

- Detects phishing based on:

- IP in URL

- "@" symbol

- Long URLs

- Hyphen in domains

- Phishing keywords

- Suspicious domain endings

- Clean and simple GUI

- Written in Python with no external libraries

**Sample URLs to Test(samples.txt)**

* http://192.168.0.1/login
* https://secure-bank.tk/verify
* <https://google.com>

**Outcome**



