**Software**

**Requirements**

**Specification**

**For**

**Malicious URL Detector**

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**1. Introduction:**

**1.1. Purpose of Requirement Document:**

This Software Requirements Specification provides a complete description of all the functions and specifications of the malicious URL detection application.

It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate.

The main purpose of this application is to detect whether the URL is malicious or not. Different reports will be produced using detailed and complex statistical analysis of malicious and phishing URLs that can be used by an organization to take security measures and cost-effective decisions.

**1.2. Project Scope**

**1.2.1 Description**

This application can facilitate a user to detect the malicious URL using different machine learning algorithms and prevents user from accessing the URL and protects the user’s system from

* Accidentally downloading malicious software onto the device.
* Becoming the victim of a ransomware attack.
* Malicious redirects and browser hijackers, both of which will force an user to visit other malware-infected sites.
* spy-wares, key-loggers, viruses, ,trojans & worms, etc

**1.2.2 Benefits**

There are a number of benefits of a malicious URL detection application which are protecting users' data and their system from hackers and cyber criminals and preventing them from carrying out phishing attacks to gain access to personal information and tricking users to download malicious software programs.

**1.2.3 Corporate Goals**

As security is an important factor to maintain stability for the system and maintaining confidentiality of the end-users data, with effective real time detecting and notifying of the malicious URL, the overall security of users data is expected to be improved. Also, the product will help them in resolving most of the issues normally encountered for example hacking attempts,phishing attacks, spying etc.

**1.3. Definitions, Acronyms and Abbreviations**

**URLs :** Stands for Uniform Resource Locators.

**Malicious :** which is harmful for the system.

**OWASP Top 10** : The OWASP Top 10 is a standard awareness document for developers and web application security. It represents a broad consensus about the most critical security risks to web applications.

**Ransomware Attack :** In this attack the cybercriminal encrypts the victim's data and then demands money to give the decryption key.

**1.4. References**

* <https://owasp.org/www-project-top-ten/>

**1.5. Overview**

The rest of this SRS is organized as follows:

* Section 2 gives an overall description of the software. It gives what level of proficiency is expected of the user, some general constraints while making the software and some assumptions and dependencies that are assumed.
* Section 3 contains most important features presented with detailed description, and requirements. It gives specific requirements which the software is expected to deliver. Functional requirements are given in this section. This section is written primarily for the developers and describes in technical terms the details of the functionality of the product and about safety and performance.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different language

**2. Description:**

**2.1. Product Perspective**

Malicious URL detection application will be used by the security analyst and all employees of an organization. This application will be implemented in all types of companies as security is needed for every company.

**2.2. Product Functions**

**2.2.1 For Administration**

The administration will deal with the errors occurring in the application. He /She will take action to resolve the issue.

**2.2.2 For Technical Support Team**

The technical team will deal with the application configuration. He /She will take action to resolve technical issues.

**2.2.3 For Data Management Team**

This team will deal with the database of the application. He /She will create the reports with graphs for several purposes.

**2.3. User Classes and Characteristics**

We will be having different classes for the following users.

**2.3.1. Administration**

This includes a function to view errors and take actions against errors.

**2.3.2. Data Analyst**

This class contains functions to generate graphs and reports.

**2.4. General Constraints**

**2.4.1 Hardware Limitations**

Hardware limitation of this application can be unavailability of Internet . If Internet is

not available then the URL will not Scanned properly.

**2.4.2 Security Consideration**

Security issues can be if any user uses the id of another user. So that the person will know

the vulnerabilities in the web app of the other user which will be harmful for that user if

the user checks their web app in this application.

**2.5. Assumptions and Dependencies**

**2.5.1. Assumptions**

This software will be installed on users' systems and on systems of the security department of an organization.

**2.5.2. Dependencies**

This application is mostly dependent on the Internet as the internet connection will be proper then the URL will be scanned properly to show the results.

**3. Specific Requirements:**

# **3.1. Functional Requirements**

**3.1.1 Sign In/Out :**

* users will be able to login by entering correct credentials
* After they are done with their work, they can simply logout by clicking logout button

**3.1.2 Scanner :**

* Users can scan their websites by entering the url in the input field for OWASP top10

**3.1.3 Phishing :**

**-** Application is capable of identifying the phishing sites by using machine diiiiiiiiiiiilearning Algorithm

**3.1.4 Export Results :**

* App is designed to exports the obtained results on excel sheet for better view

**3.1.5 Graphical Structured Data :**

* The obtained results will be featured in graph for better understanding

**3.1.6 Owasp Top 10 :**

* World top most web app vulnerabilities and their effects will be listed in application for the knowledge for the user

**3.1.7 Database Connection :**

* The database connection is build up properly to store results and data of its end users

## **3.2. Non-Functional Requirements**

**3.2.1 Usability :**

* Anyone either professional or normal user can use this application as this is designed in such a way that it is easy to use. It is an open source software as it releases will come with time to time

**3.2.2 Reliability :**

* It made taking bugs in mind, after complete review and successful automatic and manual test, will be release for the users

**3.2.3 Performance :**

* Performance wont be an issue for the user as it is capable of running without taking many resources

**3.2.4 Efficiency :**

* Our software provides easy to use tools that any user can access software that are appropriate and well managed. User login will not take much time. It will operate quickly with acceptable system performance.

**3.2.5 Portability :**

* It is made for all platforms as it meets the requirements for all users ‘ platforms..Time requirement is needed to move the software functionalities.

**3.3. External Interface Requirements**

**3.3.1 Software Interfaces**

This application is built by using python. “Urlparse” library of python used to split the URLs into its components and also uses “beautifulsoup” , a python package used to collect data from XML and HTML files.