

SYNOPSIS

Data security has emerged as a pivotal domain in the sphere of digital protection, and the KeyGuardian project addresses this critical need with a state-of-the-art approach. This project signifies a significant venture into the dynamic field of cybersecurity, utilizing advanced techniques to fortify digital identities through robust data management. KeyGuardian employs a sophisticated architecture that ensures the confidentiality and integrity of user credentials.

The primary goal of KeyGuardian is to offer a secure and centralized platform for cybersecurity enthusiasts to encrypt, decrypt, identify, or attempt force-decryption using a wordlist, among other functionalities. The inspiration for this project came during a Capture the Flag Event organized by KPMG, where I had to navigate through multiple tools like “hashid” to identify the type of hash, then an online XORcipher crack tool, followed by “John”, “hashcat”, etc.

This experience led me to envision a project that could consolidate all these tools into a single platform. KeyGuardian is an innovative cybersecurity project aimed at enhancing digital security through a robust and dynamic data management solution. Developed with a focus on user-friendly accessibility, the project tackles the escalating challenges associated with data protection in an era of increasing cyber threats.

Key features of the project include a user-friendly interface, enabling individuals to store, generate, and retrieve complex passwords effortlessly. The system emphasizes the generation of strong and unique passwords for each account, minimizing the risk of unauthorized access. Through encryption protocols, KeyGuardian ensures that even in the event of a security breach, the compromised data remains indecipherable, safeguarding user privacy and security.

Furthermore, KeyGuardian introduces innovative features such as password strength analysis and expiration reminders. These functionalities empower users to proactively manage their passwords, encouraging regular updates and adherence to best practices in password hygiene. The system's integration with multi-factor authentication adds an extra layer of security, fortifying the defense against unauthorized access.

The project's architecture is designed to be scalable and adaptable, catering to the evolving landscape of cybersecurity threats. KeyGuardian incorporates machine learning algorithms to detect patterns and anomalies in user behavior, enhancing its ability to identify potential security risks. The platform's compatibility with various devices and operating systems ensures a seamless user experience across different digital environments.

In summary, KeyGuardian stands as a comprehensive solution to the pressing challenges of password security. By combining encryption, password management, and proactive security features, the project provides users with a reliable tool to safeguard their digital identities. As cyber threats continue to evolve, KeyGuardian remains at the forefront of ensuring robust and user-centric protection in the realm of digital security.

TABLE OF CONTENTS

CHAPTER NO. NO.	TITLE	PAGE
	SYNOPSIS	iii
	LIST OF FIGURES	vii
1.	INTRODUCTION	1
1.1	PROBLEM STATEMENT	2
1.2	OBJECTIVE	3
1.3	EXISTING SOFTWARE	4
1.4	BACKGROUND AND RELATED WORK	4
2.	HARDWARE AND SOFTWARE REQUIREMENTS	8
3.	SDLC METHODOLOGIES	9
4.	SOFTWARE REQUIREMENT SPECIFICATION AND ANALYSIS	14
4.1	FUNCTIONAL REQUIREMENTS	14
4.2	NON-FUNCTIONAL REQUIREMENTS	15
4.3	DESIGN CONSTRAINTS	17
5.	RISK ASSESSMENT	18
5.1	PROJECT RISKS	18
5.2	SECURITY AND COMPLIANCE RISKS	18
5.3	OPERATIONAL RISKS	19
5.4	EXTERNAL RISKS	19
5.5	RISK MITIGATION STRATEGIES	20
6.	DATA FLOW DIAGRAM	21
7.	SOFTWARE FEATURES	22
9.	PROJECT SNAPSHOTS	24

9.1 MAIN MENU	24
9.2 IDENTIFY HASH PAGE	25
9.3 CREATE HASH PAGE	26
9.4 EXIT OPTION	27
10. REFERENCES	28

LIST OF FIGURES

CHAPTER NO.	TITLE	PAGE NO.
3	Fig 3.1. Waterfall Model	9
3	Fig 3.2. RAD Model	10
3	Fig 3.3. Spiral Model	11
3	Fig 3.4. Incremental Model	11
3	Fig 3.5. Prototype Model (a)	12
3	Fig 3.6. Prototype Model (b)	13
3	Fig 3.7. Prototype Model (c)	13
6	Fig 6.1. Data Flow Diagram	21
9	Fig 9.1. Main Menu	24
9	Fig 9.2. Identify Hash Menu	25
9	Fig 9.3. Create Hash Page	26
9	Fig 9.4 Last option Exit	27