

E-Authentication System with QR Code & OTP

Problem Definition:

In the proposed scheme, the user can easily and efficiently login into the system. We analyze the security and usability of the proposed scheme, and show the resistance of the proposed scheme to hacking of login credentials, shoulder surfing and accidental login. The shoulder surfing attack can be performed by the adversary to obtain the user's password by watching over the user's shoulder as he enters his password. Since, we have come up with a secure system schemes with different degrees of resistance to shoulder surfing have been proposed. In order to use this authentication system, user need to first register himself into this system by filing up the basic registration details. After a successful registration, user can access the login module where he/she need to first authenticate the account by entering the email id and password which was entered while registration. Once the email id and password is authenticated, the user may proceed with next authentication section where he/she need to select the type of authentication as QR (Quick Response) Code or OTP (One Time Password). Once the user selects the authentication type as QR Code, then system will generate a QR Code and send it to user's mail id over internet. If user select's OTP, then SMS will be sent on his/her registered mobile number. If the user passes the authentication, then system will redirect to the main page. The QR Code and OTP are randomly generated by the system at the time of login.

Modules:

1. Registration:

- To access the system, user need to first register by entering the basic registration details like name, email id, mobile number, gender, etc.

2. Login:

- Here, user need to enter the login credentials to access the system.
- If the login credentials are validated by the system, the page will be redirected to user authentication page where user need to select any one authentication type as **OTP** or **QR Code**.

3. OTP Verification:

- If user select's OTP authentication, then system will send an OTP in the form of SMS on the registered mobile number which was provided by the user at the time of registration.

4. Scan QR Code:

- If user select's QR code, then code is generated in backend and sent on the user's email id.
- User need to scan the QR Code using system webcam to validate the QR Code sent over the mail.

5. Main Page Access:

- If the user passes the authentication process, then the page will be redirected to Main Page else, it will redirect to login page.

❖ **Software Requirements:**

- Windows 7 or higher
- Microsoft SQL Server 2008
- Visual Studio 2010

❖ **Hardware Components:**

- Processor –Core i3
- Hard Disk – 160 GB
- Memory – 1GB RAM
- Monitor

❖ **Advantages of the Proposed Project:**

- Helps users to login into their account more securely.
- Stalker won't be able to collect the password via shoulder surfing.
- Complex password technique with easy user interface.

❖ **Disadvantages:**

- Requires an active internet connection.

❖ **Application:**

- This application can be used by the banks for login into internet banking.

❖ **Reference Link:**

- <http://ieeexplore.ieee.org/document/6982784/>