QR CODE GENERATOR FOR LARGE FILE SHARING

Dissertation submitted to the Government Arts College (Autonomous), Kumbakonam
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MASTER OF COMPUTER APPLICATIONS

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BONAFIDE CERTIFICATE

This is to certify that this dissertation entitled "**QR CODE GENERATOR FOR LARGE FILE SHARING**" is a bonafide record of the project work done by **N ARUNA (Reg.No.: P 23 CA 398)** at GOVERNMENT ARTS COLLEGE (AUTONOMOUS) during the year 2022-2023 in partial fulfillment of the requirement for the award of the degree of **MASTER OF COMPUTER APPLICATIONS.**

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ABSTRACT

The *QR* ***Code Generator for Large File Sharing*** is a secure web-based application designed to facilitate the transfer of large files through dynamically generated QR codes. Developed using PHP and XAMPP, this system enables users to upload files which are then linked to unique QR codes for quick and easy sharing. The project prioritizes security by implementing features such as end-to-end encryption, JWT (JSON Web Token) authentication, QR code expiration control, and one-time access functionality. These measures ensure that files are accessible only to authorized users for a limited time, enhancing privacy and control. This solution addresses common challenges in file sharing, such as size limitations and data security, providing an efficient and user-friendly alternative to traditional methods.

INTRODUCTION

In the age of digital communication, sharing large files securely and efficiently is a common challenge faced by individuals and organizations. Traditional methods like email attachments or external drives often come with size limitations, slower transfer speeds, and potential security risks. To address these issues, this project introduces a web-based application called ***"QR Code Generator for Large File Sharing"***, developed using PHP and the XAMPP platform. The system allows users to upload large files and instantly generate a QR code that can be scanned to download the file. Unlike standard file-sharing platforms, this application focuses on security and privacy by including features such as end-to-end encryption, JWT authentication, QR code expiration times, and one-time access control. This ensures only authorized users can access the data and only within a set timeframe. The project offers a modern, reliable, and secure solution for anyone needing fast and protected file sharing without size restrictions.

SYSTEM SPECIFICATION

HARDWARE REQUIREMENTS

- **Processor**: Intel Core i3 or higher
- **RAM**: Minimum 4 GB (8 GB recommended)
- **Storage**: At least 500 MB of free disk space
- **Display**: 1024x768 resolution or higher
- **Internet Connection**: Required for file sharing over network

2. SOFTWARE REQUIREMENTS

- **Operating System**: Windows 10/11, Linux, or macOS
- **Web Server**: XAMPP (Apache, PHP, MySQL)
- **Backend Language**: PHP 7.4 or higher
- **Database**: MySQL 5.7 or higher
- **Browser**: Latest version of Chrome, Firefox, or Edge
- **QR Code Library**: PHP QR Code or equivalent
- **Encryption Library**: OpenSSL for file encryption
- **Authentication**: JWT (JSON Web Token) Library

SOFTWARE DESCRIPTION

The *QR Code Generator for Large File Sharing* is a web-based application designed to facilitate the secure sharing of large files using QR codes. The system is built using **PHP** for server-side scripting and runs on the **XAMPP** platform, which includes Apache server, MySQL database, and PHP support.

1. Frontend:

- **Languages Used**: HTML, CSS, JavaScript
- **Purpose**: To provide a user-friendly interface for uploading files, generating QR codes, and accessing downloads.
- **Features**: File selection form, QR code display, download progress indicator, and error/success messages.

2. Backend:

- **Language**: PHP
- **Functionality**: Handles file uploads, generates QR codes, encrypts files, creates download links, and manages authentication using JWT (JSON Web Tokens).
- **Libraries Used**:
  - **PHP QR Code** for generating QR images.
  - **OpenSSL** for file encryption.
  - **JWT Library** for secure token-based access control.

3. Database:

- **Database System**: MySQL

- **Purpose**: Stores file metadata, download status, expiration timestamps, and user access logs.
- **Tables**: Users, Files, Tokens, Downloads

4. Server:

- **Platform**: XAMPP (Apache, MySQL, PHP)
- **Usage**: Acts as the local server for development and testing. Can be deployed to a live server for production use.

This software ensures easy file sharing while maintaining high levels of security, privacy, and control over file access.

SYSTEM STUDY

The System Study involves a detailed analysis of the existing problems, the need for the proposed system, and how the new system will overcome current limitations in file sharing.

1. Existing System

In the current digital environment, users rely on traditional methods for sharing large files such as:

- Email attachments (limited by size),
- USB drives (physical transfer),
- Cloud storage services (require login, sometimes not secure),
- File-sharing websites (potential security risks and ads).

These methods have several limitations including:

- File size restrictions,
- Risk of data leakage or unauthorized access,
- Time-consuming transfers,
- Lack of control over how long or how many times a file is accessed.

2. Proposed System

The proposed system, *QR Code Generator for Large File Sharing*, addresses the above issues by:

- Allowing large file uploads directly through the web interface,
- Generating a unique QR code for each file,
- Implementing secure access using JWT authentication,
- Providing QR code expiration and one-time access features,
- Encrypting files before storage to enhance data protection.

3. Objectives of the New System

- To simplify the file-sharing process using QR codes.
- To ensure security and privacy through encryption and access control.
- To eliminate size limitations and physical transfer barriers.
- To provide a contactless, fast, and user-friendly method for sharing files.

4. Feasibility Study

- **Technical Feasibility**: Uses widely available technologies like PHP, MySQL, and QR libraries.
- **Economic Feasibility**: Open-source tools minimize development cost.
- **Operational Feasibility**: Easy to use and can be adopted by a wide range of users.