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Abstract

This assignment focuses on developing a Secure Marketing Application in Python with SQLite, QR codes, and user authentication.

Ct4029 – Principles of programming

Developing a Secure Marketing Application with Python, SQLite, QR Codes, and User Authentication

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# Introduction

The Secure Marketing Application project challenges me to create a software application that embodies several vital features. This application aims to deliver a user-friendly graphical interface, robust user authentication, QR code functionality, and a secure SQLite database. It is centred on empowering users to explore marketing promotions, access additional information through QR code scanning, and securely manage their interactions with promotions.

My core focus is designing and developing a practical, secure, and user-centric marketing application that aligns with the project's outlined requirements. This introduction sets the stage for a thorough exploration of the design, implementation, testing, and conclusion of this Secure Marketing Application.

# Design of the System

Regarding the logic and functionality of the program itself. My approach would be having individual pages containing GUI that are most likely classes and then having a waterfall data flow pushing each class onto each other with appropriate data as necessary. This data might include passwords or emails so the user can hypothetically go from registering to logging in. This will be done with an SQL command gathering this information from our set databases.

* GUI Design and Wireframes
  + User Authentication Design
  + QR Code Generation and Scanning
  + SQLite Database Structure
  + Implementation Logic
  + Code Snippets, Diagrams, Screenshots

# Testing the System

* + Test Cases and Test Scenarios
  + Test Results
  + Discussion on Failed Tests
  + Test Coverage Evaluation

# Conclusion

* + Summary of Achievements
  + Lessons Learned
  + Future Enhancements

# References

* + Academic Sources, Journals, Books, and Websites Used

# Appendices

# Appendix: User Guide

* + - Instructions for Registration
    - Viewing Promotions
    - Generating and Scanning QR Codes
    - Tracking Interactions with Promotions

# Appendix 2: Source Code

* + - GUI Code
    - SQLite Database Code

# Appendix 3: Test Suites

* + - Detailed Test Cases and Scenarios

# Video Demonstration

* + Link or Embed the 5-minute Video Demonstration