

Restaurant Billing Software – Project Report

1. Introduction

The Restaurant Billing Software is a Python-based application developed to streamline and automate the restaurant billing process. It allows users to log in, view menu items, select orders, calculate total costs, and generate printable PDF bills. The system also integrates with a database to store menu items and ensures a professional, user-friendly experience.

2. Abstract

This project aims to replace manual billing in restaurants with an efficient, automated system. Built using Python and Streamlit/Tkinter, along with SQLite for database management, the software offers a simple login mechanism, menu management, and automated bill generation in PDF format. This reduces human errors, saves time, and improves service quality in restaurants of any size.

3. Tools Used

Programming Language: Python 3.x

Frontend: Streamlit (web interface) / Tkinter (GUI option)

Database: SQLite (restaurant.db)

Data Storage: CSV for menu data

PDF Generation: ReportLab (Python library)

IDE: Visual Studio Code

4. Steps Involved in Building the Project

1. Requirement Analysis – Understanding the needs for restaurant billing, including menu storage, order selection, total calculation, and PDF bill printing.

2. Database Setup – Creating restaurant.db with a table to store menu items, prices, and categories.

3. Menu Data Preparation – Using menu.csv to store and update food items.

4. Backend Development – Writing Python functions for login authentication, menu display, order handling, price calculation, and PDF bill generation.

5. Frontend Design – Designing the user interface using Streamlit for a web-based version or Tkinter for desktop use.

6. Integration – Connecting the backend with the frontend and ensuring smooth data flow between the database, CSV, and UI.

7. Testing – Checking login, ordering, total calculation, and PDF output functionalities.

8. Deployment – Running the application locally or on a server for restaurant use.

5. Conclusion

The Restaurant Billing Software successfully provides an efficient, accurate, and user-friendly solution for restaurant billing operations. It replaces manual work with a quick, automated process, helping staff focus more on customer service. With its extendable architecture, the software can be enhanced to include online ordering, GST calculation, and digital payment integration.