Project Work

On

RESTAURANT INVENTORY MANAGEMENT SYSTEM

Using Python SQLite and Tkinter

By

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Abstract

Any restaurant has to manage several factors: the menu, the employees, and the customers. As it grows, the menu items and employees may grow and must be managed efficiently. Hence an appropriate system needs to be developed to make this task easier to handle for multiple items and employees, thus justifying the need for a Restaurant Inventory Management System. It shall have the following features: Menu management, item add/edit/delete and employee management. Each restaurant shall have its own login ID and password, using which they can gain access to these features. They can then either make changes to their data, or retrieve it to summarize the menu, employee or transaction details. The app shall thus make use of CRUD (Create / Read / Update / Delete) concepts to connect to a database and use it for data storage and retrieval. The proposed app shall be made using Python, SQLite and TKinter. Tkinter creates the GUI, Python handles the business logic, and SQLite handles the data storage. A future enhancement to the app would be per bill transaction tracking and employee/item ratings, which could then be curated into a recommendation system.

Contents

Project Description

This project primarily involves the following modules:

1) User Registration and Login
    - Implemented using a unique Login ID
2) Menu Management
    - Addition
    - Modification
    - Deletion
    - Overview
3) Employee Management
    - Addition
    - Modification
    - Deletion
    - Overview

The app thus allows for all these features on a per-user basis, with the data being stored separately for easier access as well.

Implementation Details

Schema Description (SQLite3)

- CREATE TABLE user_logins(username text PRIMARY KEY, password text);
    - *Holds the user login details, i.e. IDs and passwords.*
- CREATE TABLE restos(id integer primary key autoincrement,name text not null, menucount integer not null, emplcount integer not null);
    - *Holds an overall record of each restaurant's name, along with its employee and menu item count.*
- CREATE TABLE <username>(id integer primary key autoincrement, name text NOT NULL,price int);
    - *Created on a per-user basis, this table holds the restaurant's menu items.*
- CREATE TABLE <username>_employees(id integer primary key autoincrement, name text NOT NULL,salary int);
    - *Created on a per-user basis, this table holds the restaurant's employee details.*

Function Descriptions (Python)

MENU CREATOR FUNCTIONS

Used to create basic frames and pack options.

register_user()

login_verify()

login_success()

menu_editor_open()

employee_editor_open()

MENU POPULATE FUNCTIONS

Used to pack elements for specific tasks like insertion, updates, etc.

menu_add_item_populate()

menu_delete_item_populate()

menu_list_item_populate()

empl_add_item_populate()

empl_mod_item_populate()

empl_delete_item_populate()

empl_list_item_populate()

SQL EXECUTION FUNCTIONS

Execute the backend database logic using SQLite3.

add_menu_sql()

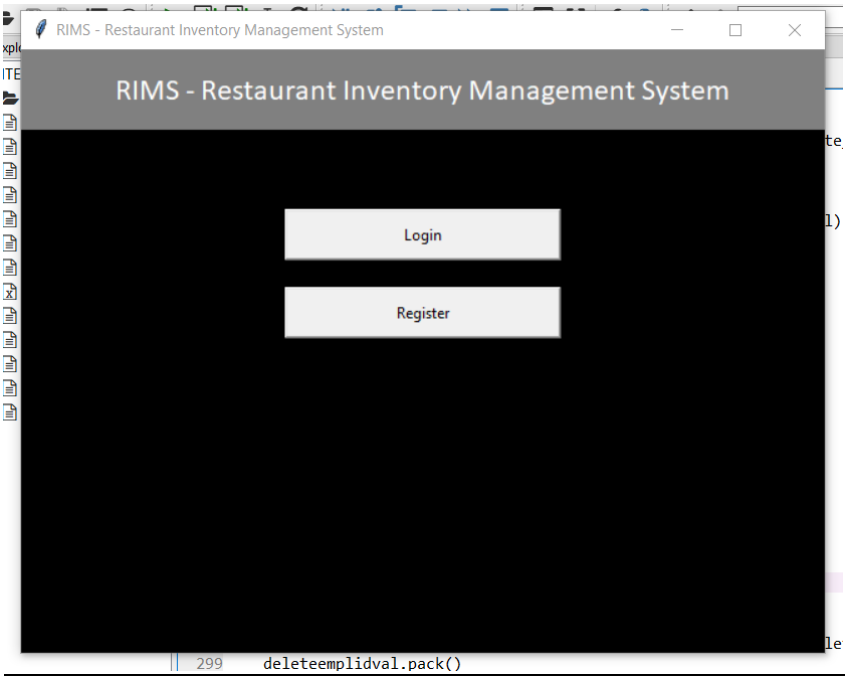
add_empl_sql()

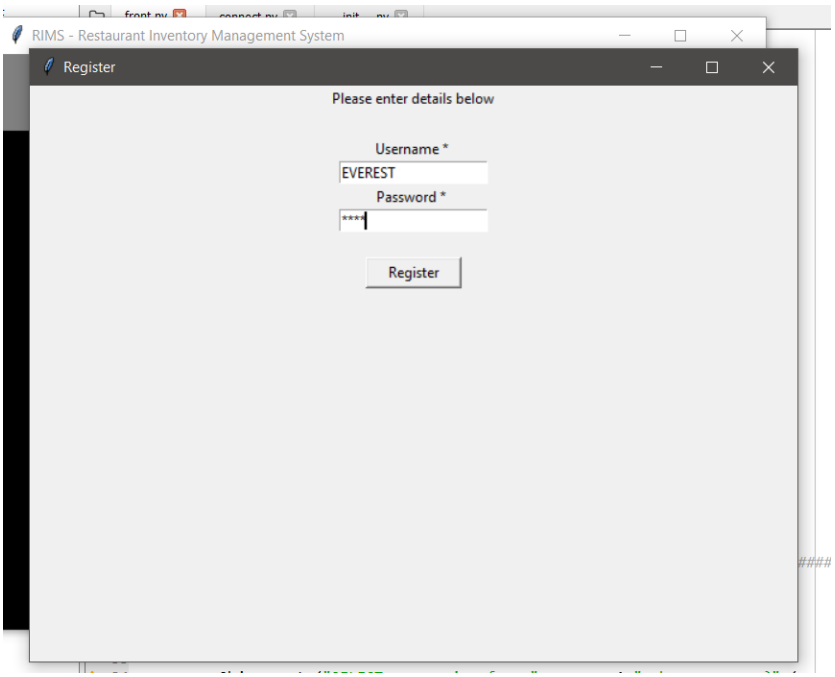
mod_empl_sql()

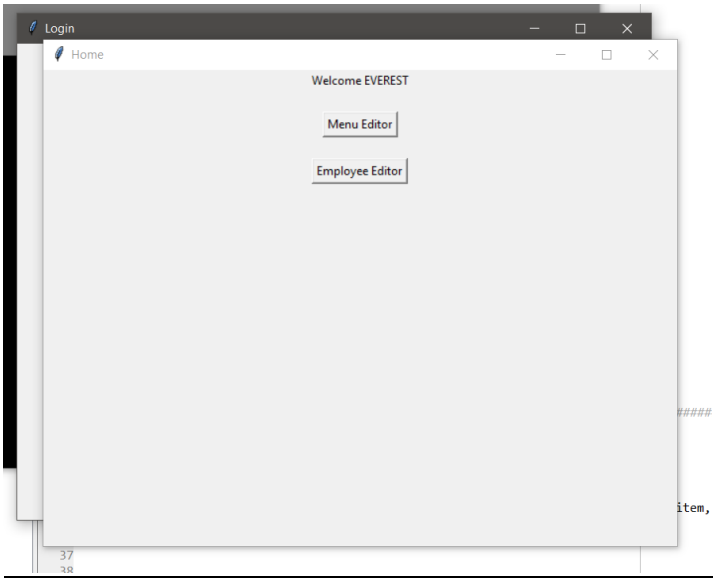
delete_menu_sql()

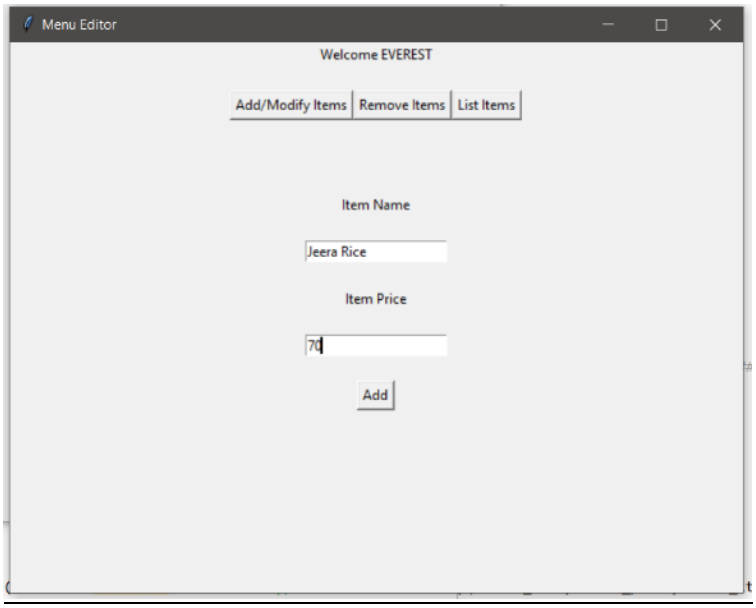
delete_empl_sql()

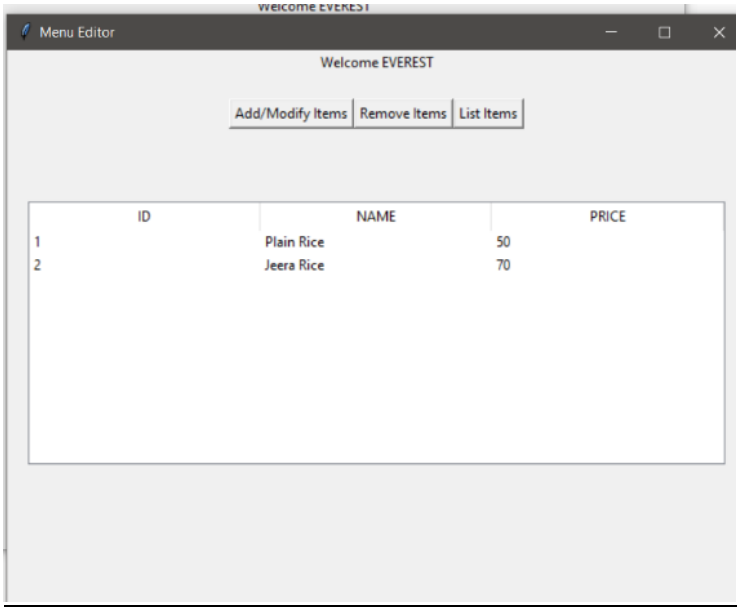
Screenshots

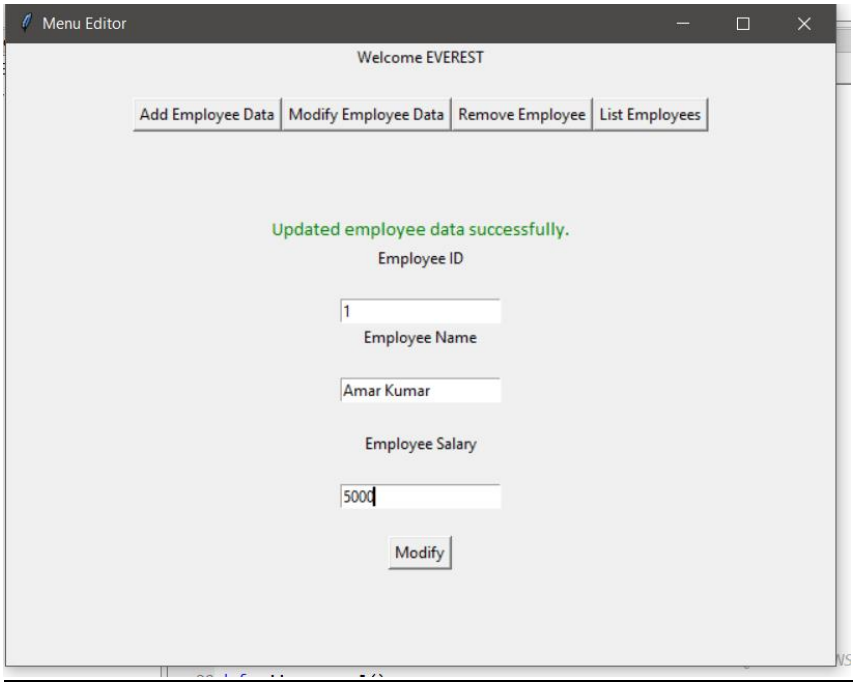


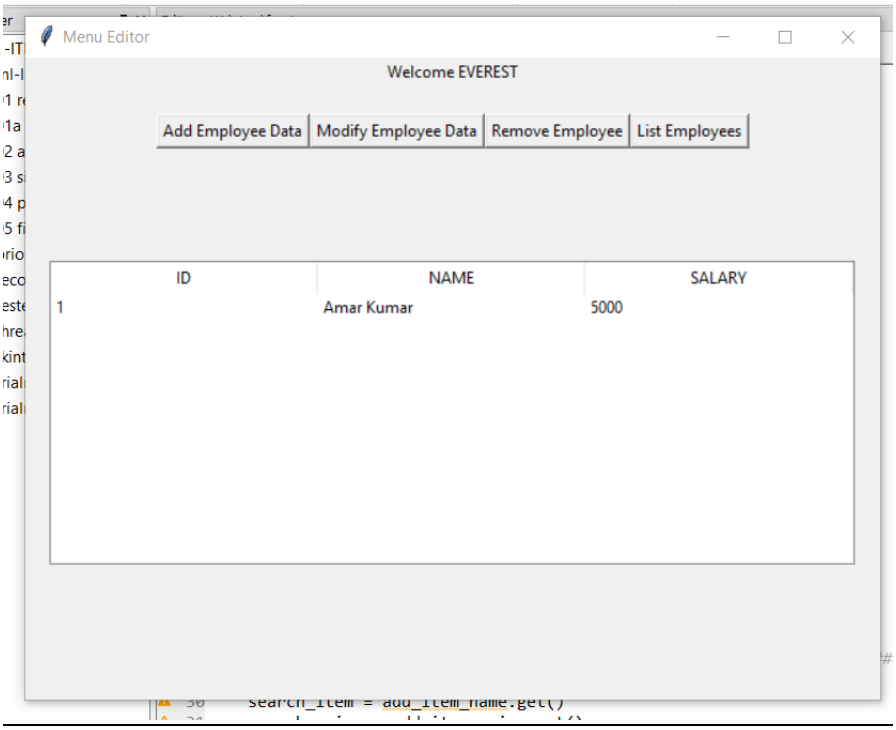



Login
Home
Welcome EVEREST
Menu Editor
Employee Editor


Menu Editor
Welcome EVEREST
Add/Modify Items
Remove Items
List Items
Item Name
Jeera Rice
Item Price
70
Add


Menu Editor
Welcome EVEREST
Add/Modify Items
Remove Items
List Items
ID
NAME
PRICE
1
Plain Rice
50
2
Jeera Rice
70


Menu Editor
Welcome EVEREST
Add Employee Data
Modify Employee Data
Remove Employee
List Employees
Updated employee data successfully.
Employee ID
1
Employee Name
Amar Kumar
Employee Salary
5000
Modify


Menu Editor
Welcome EVEREST
Add Employee Data
Modify Employee Data
Remove Employee
List Employees
ID
NAME
SALARY
1
Amar Kumar
5000

Conclusion and Further Scope

The Python app to create a Restaurant Inventory Management System was implemented successfully. The features of menu and employee management were implemented on a per-user basis, along with a login/registration system.

The GUI was implemented using Tkinter, the Backend logic using SQLite3 and the business logic using Python itself.

Further improvement to the app involves addition of a full-fledged transaction management system, with per-item and per-employee ratings as well. This could further be ingrained into a recommendation system, or show the restaurant managers analytics and current trends.