



Republic of the Philippines  
**BATANGAS STATE UNIVERSITY**

**The National Engineering University**

**Alangilan Campus**

Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200

Tel Nos.: (+63 43) 425-0139 local 2222 / 2223

E-mail Address: [cics.alangilan@batstate-u.edu.ph](mailto:cics.alangilan@batstate-u.edu.ph) | Website Address:  
<http://www.batstate-u.edu.ph>

---

**College of Informatics and Computing Sciences**

# **RESAVEBO**

CS121: ADVANCED COMPUTER PROGRAMMING

Submitted By:

CARANDANG, JOHN BENEDICT M.

Lecturer:

REYES, GLYDEL ANN E.

IT – 2101



## College of Informatics and Computing Sciences

### I. PROJECT OVERVIEW

#### System Purpose

The **Expense Manager System** is designed to streamline personal and organizational financial tracking, enabling users to manage their expenses effectively. The system supports users by providing tools for recording and categorizing expenditures, generating reports, and tracking spending patterns to ensure better financial planning and decision-making. This system aims to solve the problem of inefficient expense tracking by automating data entry, offering an organized interface, and generating real-time reports that allow for better financial insights.

#### System Boundaries

- **Included Features:**
  - Expense entry and management (with fields for expense description, due date, price, and category).
  - Categories for tracking expenses (Food, Utilities, Entertainment, etc.).
  - A report generation feature that allows users to calculate and visualize their total expenses per category.
  - An editable expense list where users can delete or update past entries.
  - Receipt generation functionality, summarizing the entered data for reference or printing.
- **Excluded Features:**
  - This system does not include payroll or salary tracking.
  - It does not integrate with any bank account or external payment systems.
  - Tax calculation or detailed budgeting features are beyond the scope of this project.

#### Target Users

The system is intended for personal users, small businesses, or organizations who need a simple but powerful tool to manage and track their expenses. This could include:

- Students managing their personal budget.
- Employees keeping track of work-related expenses.
- Small business owners who want to track their operational costs.

#### SMART Outcomes

- **Specific:** To provide an easy-to-use expense management tool that allows users to input, edit, and report on their expenditures.
- **Measurable:** Reduce manual data entry and financial errors by automating expense tracking and report generation.
- **Achievable:** Develop and deploy the system within a semester using Python programming.
- **Relevant:** This system supports better personal and organizational financial management, which is critical for budgeting and resource allocation.
- **Time-bound:** Complete the development, testing, and deployment of the Expense Manager system by the end of the semester.



## **II. PYTHON CONCEPTS AND LIBRARIES**

### Python Tkinter

Tkinter is the standard Python library for building graphical user interfaces (GUIs). It provides a simple way to create windows, dialogs, buttons, labels, and other GUI components. In the Expense Manager system, Tkinter is used to create the user interface that allows users to input expenses, view expense records, and generate reports.

- Tkinter is utilized for:
  - Creating input forms for expenses (e.g., text fields for descriptions, price input, and dropdowns for categories).
  - Implementing buttons for operations such as saving, deleting, editing, and clearing entries.
  - Displaying lists of expenses and categories.

### SQLite3

SQLite is a lightweight, serverless database engine that is embedded in Python. It is used in this system to store expenses, categories, and receipts in a local database. The system uses SQLite to manage the data persistently and retrieve information when needed.

- Key Concepts:
  - Database creation, reading, updating, and deleting records (CRUD operations).
  - The `sqlite3` library is used to connect the Python application to the database, ensuring that data entered by the user is saved and can be accessed later.



Republic of the Philippines  
**BATANGAS STATE UNIVERSITY**  
**The National Engineering University**

**Alangilan Campus**  
Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200  
Tel Nos.: (+63 43) 425-0139 local 2222 / 2223  
E-mail Address: [cics.alangilan@batstate-u.edu.ph](mailto:cics.alangilan@batstate-u.edu.ph) | Website Address:  
<http://www.batstate-u.edu.ph>

---

**College of Informatics and Computing Sciences**

### **III. SUSTAINABLE DEVELOPMENT GOALS**

This project contributes to the achievement of the following Sustainable Development Goals (SDGs):

- **Goal 8: Decent Work and Economic Growth**  
By providing individuals and organizations with an efficient tool to manage their finances, the system supports better economic decision-making, helping users optimize their spending, reduce waste, and improve financial stability.
- **Goal 9: Industry, Innovation, and Infrastructure**  
The project promotes the use of innovative technology to streamline financial tracking processes. The use of Python and modern programming libraries exemplifies the application of technology in everyday personal and business operations.
- **Goal 12: Responsible Consumption and Production**  
The system aids users in tracking and categorizing their expenditures, promoting financial responsibility and awareness. By having a clear view of their spending, users can make more informed decisions, leading to more sustainable consumption patterns.



**College of Informatics and Computing Sciences**

**IV. PROGRAM/SYSTEM INSTRUCTIONS**

The Expense Manager System is designed to be intuitive and user-friendly. Below are the detailed instructions for using the system, including how to navigate the interface, enter data, and generate reports.

**1. System Requirements**

- Operating System: Windows, macOS, or Linux.
- Python Version: 3.x or higher.
- Libraries Required: Tkinter (for GUI), SQLite3 (for database management).
- Hardware Requirements: A computer with at least 1GB of RAM.

The screenshot displays the Expense Manager System interface. At the top, there is a green 'Reports' button. Below it, a form for entering an expense is shown with the following fields: 'Expense Description:' (containing 'cake'), 'Due Date:' (containing '12/8/24'), 'Price (PHP):' (containing '300'), and 'Category:' (containing 'Food'). Arrows point to each field with labels: 'ENTER DESCRIPTION', 'Enter Date', 'Enter Price', and 'Enter Category'. Below the form, there are four buttons: 'Save' (grey), 'Edit' (blue), 'Delete' (red), and 'Clear' (red). A red text overlay says 'Press save after filling the spaces'. At the bottom, a table shows a list of saved expenses: '11 | pizza | 2024-12-08 | 150 | Food'. An arrow points to the table with the text 'After saving all your expenses it will go in this table'.

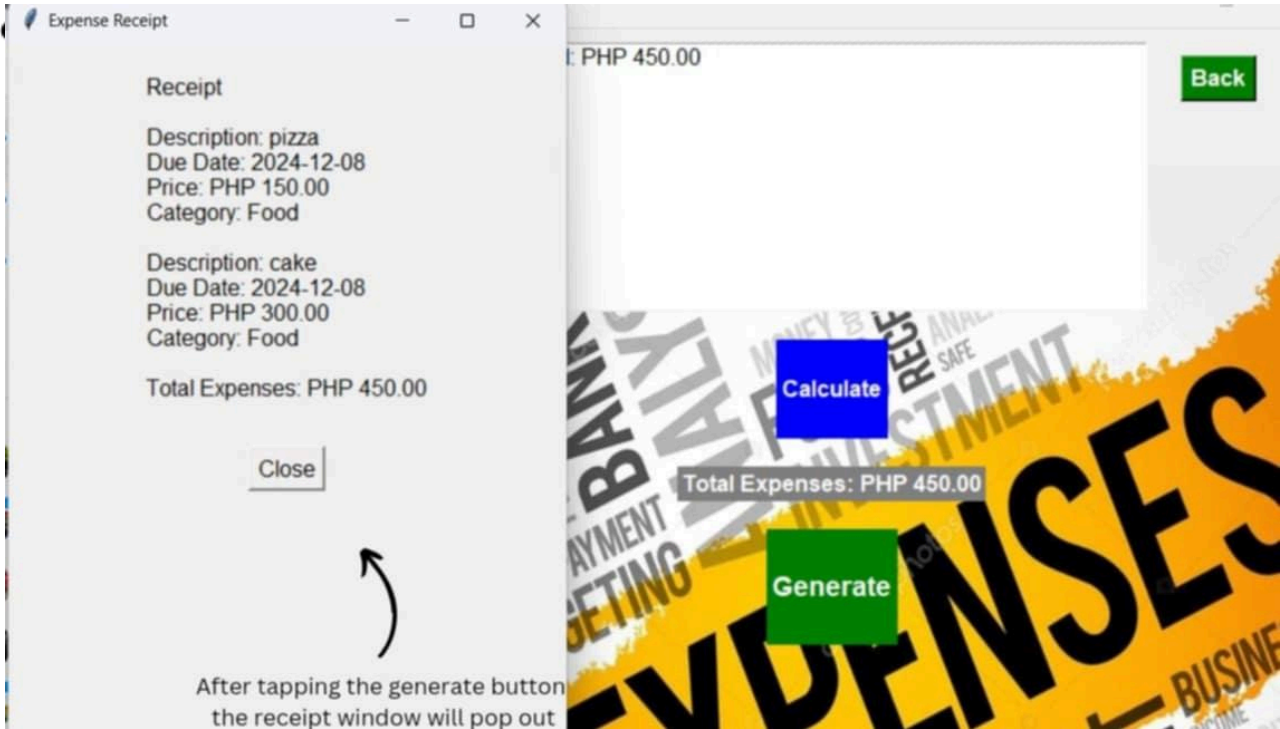
In the main window, the user can enter the description, due date, price, and category for an item. Once the details are added, the user can save them, and the saved items will appear in a list. The user can edit or delete any item by clicking on it. Additionally, there is a 'Clear' button that allows the user to delete all items and reset the list.



When the user clicks the reports button on the main window, a new section opens. Here, the user can calculate all the expenses, view the total amount, and generate a receipt by clicking the 'Generate' button.



Republic of the Philippines  
**BATANGAS STATE UNIVERSITY**  
**The National Engineering University**  
**Alangilan Campus**  
Golden Country Homes, Alangilan Batangas City, Batangas, Philippines 4200  
Tel Nos.: (+63 43) 425-0139 local 2222 / 2223  
E-mail Address: [cics.alangilan@batstate-u.edu.ph](mailto:cics.alangilan@batstate-u.edu.ph) | Website Address: <http://www.batstate-u.edu.ph>



This is the receipt interface, where the user can view the total expenses.