HOSTEL MANAGEMENT SYSTEM

Name: Cedric Bakali

Reg No: 24311351021

Institution: DMI University

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# 1. Introduction

The Hostel Management System is a Python-based desktop application designed to manage hostel operations, including student registration, room allocation, and fee management. The system improves efficiency, accuracy, and transparency in hostel administration.

# 2. System Requirements

• Python 3.x

• Tkinter library

• SQLite3

• Windows or Linux OS

• Basic hardware (2GB RAM, 1GHz CPU)

# 3. Technologies Used

• Programming Language: Python

• GUI Library: Tkinter

• Database: SQLite3

# 4. Features

• Admin login system

• Add, update, view, delete student details

• Room assignment and availability check

• Fee payment tracking

• Error handling and validation

• User-friendly GUI

# 5. System Design

The system uses a modular design with the following components:  
• GUI forms created using Tkinter.  
• Backend logic to handle user interactions and database operations.  
• SQLite database to store student, room, and fee data.

# 6. Implementation

Example Code Snippet: Student Addition

try:  
 if name == "" or room == "":  
 messagebox.showerror("Error", "All fields are required")  
 else:  
 conn.execute("INSERT INTO students (name, room) VALUES (?, ?)", (name, room))  
 conn.commit()  
 messagebox.showinfo("Success", "Student added successfully")  
except sqlite3.IntegrityError:  
 messagebox.showerror("Database Error", "Student already exists")

# 7. Error Handling

The system uses try-except blocks to catch and handle exceptions like input validation errors, database errors, and connection issues. It ensures the application remains stable and user-friendly.

# 8. Testing

The system was tested for input validation, login security, database integrity, and overall performance. Common bugs were fixed, and the app behaves as expected under normal conditions.

# 9. Conclusion

The Hostel Management System offers a reliable and efficient solution for managing hostel activities. It automates key operations, reduces human error, and improves data accessibility for administrators.

# 10. Future Enhancements

• Add student photo upload feature.

• Generate PDF receipts for payments.

• Create reports for room usage and payment history.

• Online access via web-based extension.

# 11. References

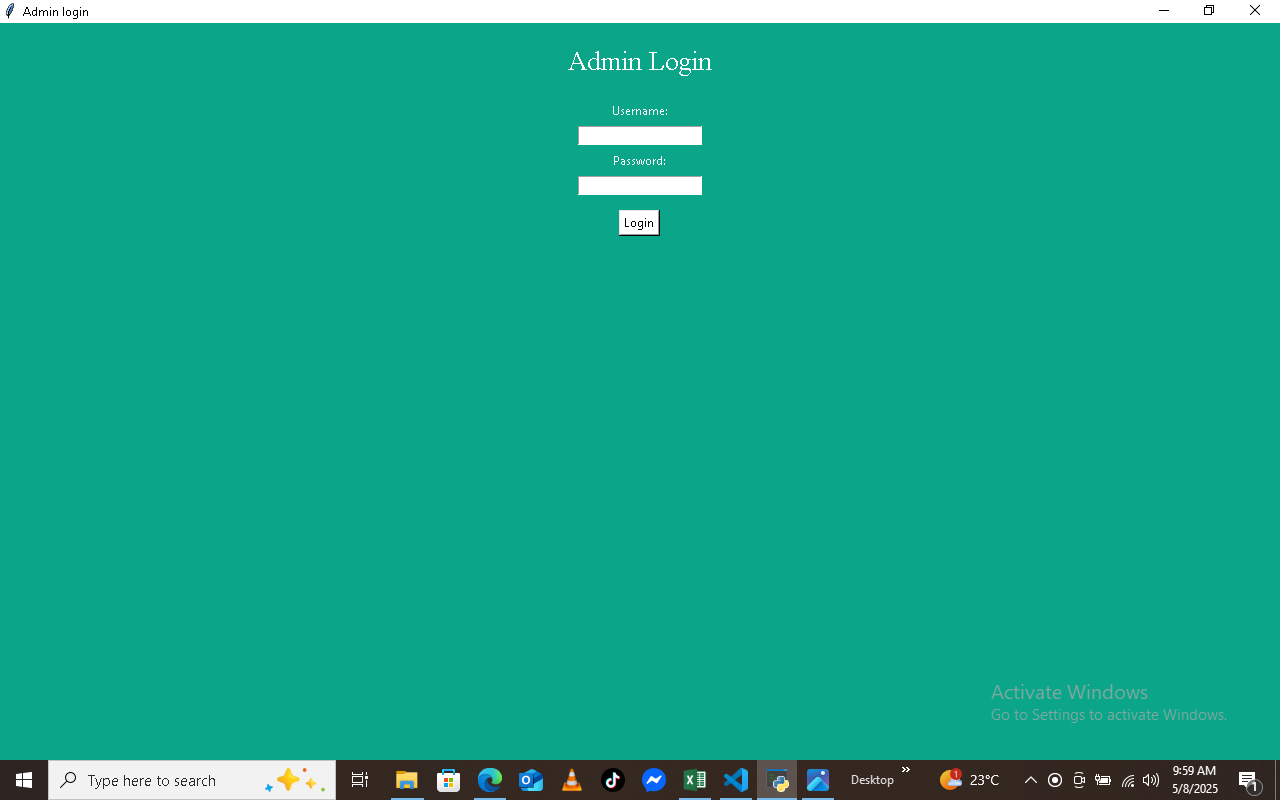
• Python documentation - https://docs.python.org/3/

• Tkinter documentation - https://docs.python.org/3/library/tkinter.html

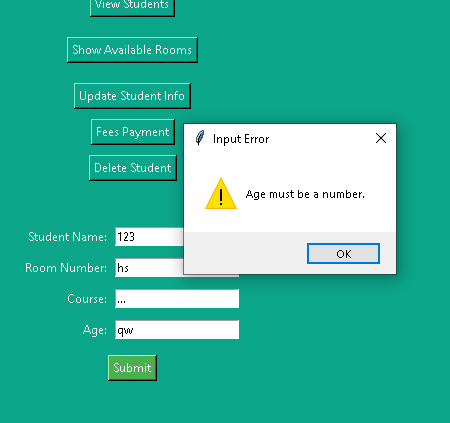
• SQLite documentation - https://www.sqlite.org/docs.html

# 12. Screenshots

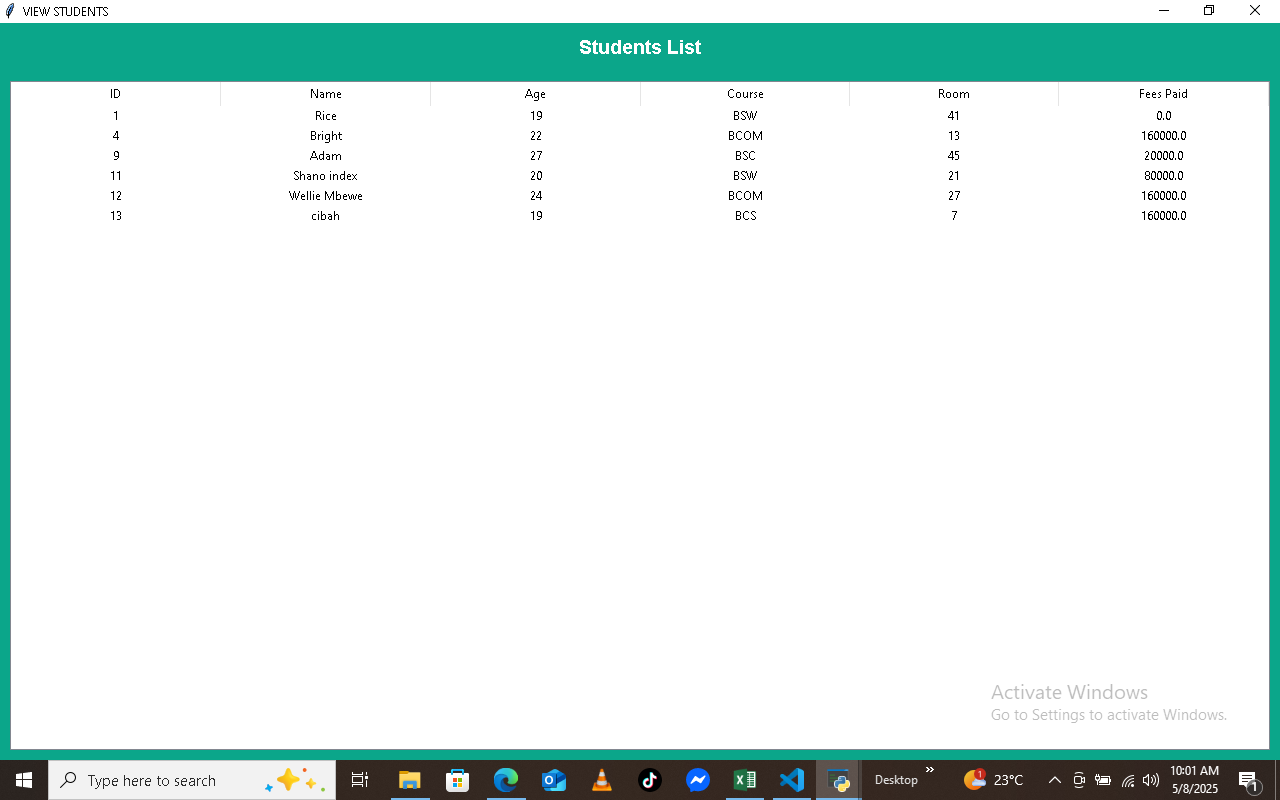
• Login Page Screenshot



• Add Student Form Screenshot



• View Students Window Screenshot



• Fee Payment Screenshot

