Property Management System in C++

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Problem

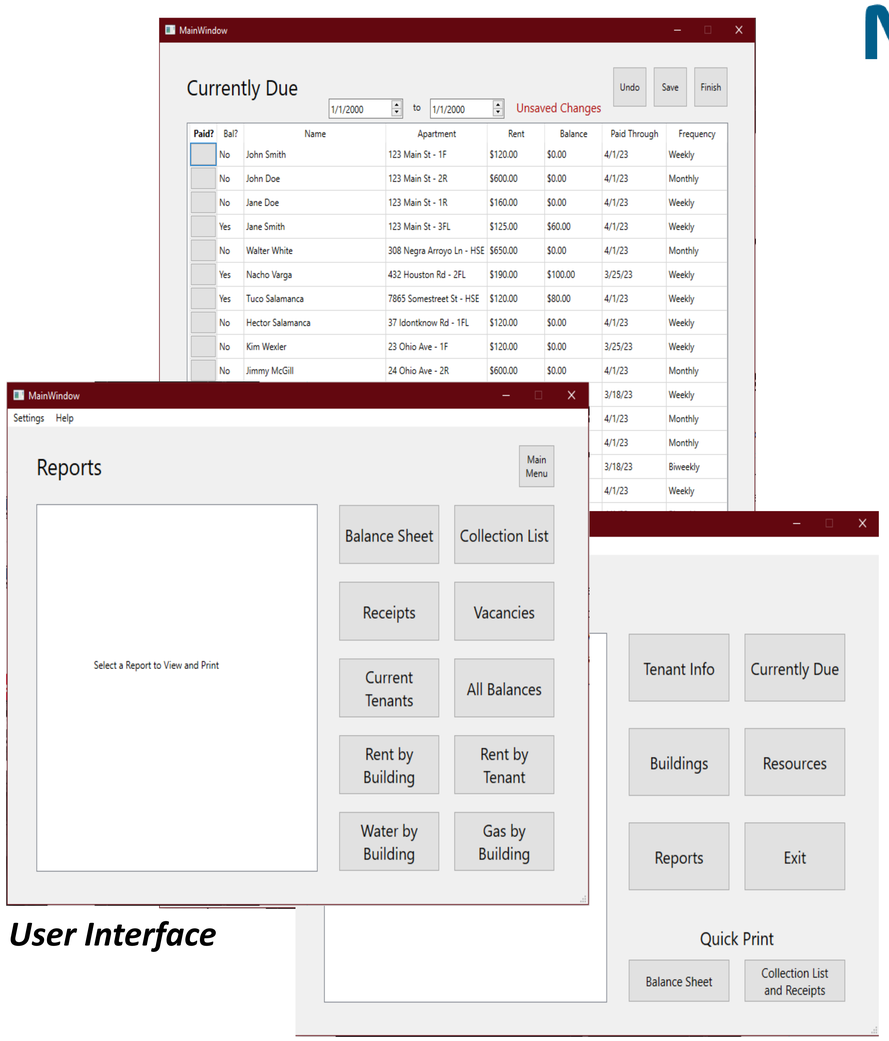
The Arlinghaus family rental property business has been using the same Microsoft Access database to track tenants and rent collections since 1994. It is beginning to show its age, lacking certain quality-of-life features and requiring a level of “Jerryrigging” to ensure complete functionality. Free, open-source, Windows-native (no web browser) property management systems for smaller-scale landlords don’t exist or are abandoned.

Solution

Develop a modern take on the previous solution. Don’t completely reinvent the wheel but avoid cloning the old database. A piece of software that’s new, functional, expandable, and durable.

Development

- Switched from an Angular-based web server approach to Qt after user feedback.
- Both Qt and MySQL were large hurdles to clear as I’d never used either before. Successfully developed each component and later successfully integrated them.



User Interface

Future Plans

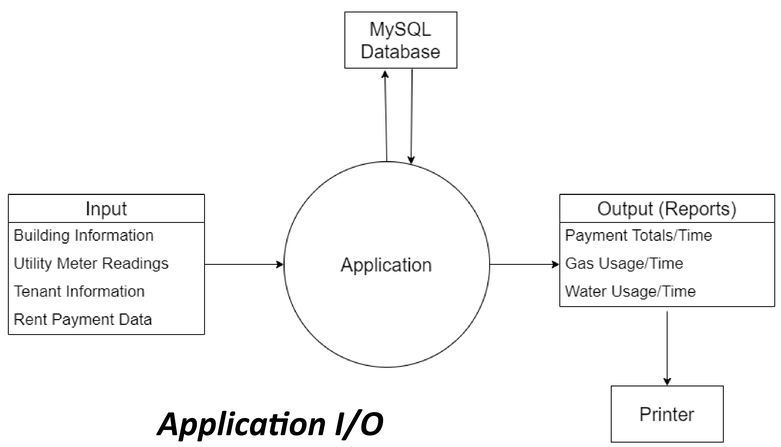
This project will continue post-graduation. Planned additional features:

- Android app designed to run on a handheld POS system with built-in printer for receipts. Server on computer to sync.
- Automatic water readings via wireless underground water meters and an in-car receiver.

Design

The software logic is written in C++ using the Qt 6.5 framework. The backend is handled by a MySQL database to store and manipulate property and tenant data. The software serves three primary functions:

1. Data Entry: adding a new building or tenant, entering utility meter readings, marking tenants as “paid” for their rent cycle.
2. Data Views: Viewing the aforementioned data and allowing edits as necessary.
3. Report Generation: Generating relevant,



Application I/O