University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: ___1___

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Project Description:

The domain of this application is Renovation Project Management. It is designed to assist owners, contractors, and supervisors in efficiently coordinating renovation tasks.The system will be tailored for handling both residential and commercial renovation activities, focusing on aspects such as resource allocation, task assignments, and budget.

The database captures and models the essential aspects of renovation project management:

1. **Project Details:**
   The database handles information about each renovation project, including project details, budgets, timelines, and current progress. This helps stakeholders monitor the status of ongoing projects.
2. **Stakeholder Involvement:**
   The system documents all individuals involved in a project, such as owners, contractors, supervisors, designers, and wage workers. It models their roles and responsibilities.
3. **Resource Allocation:**
   The system tracks the resources and materials used in the renovation process, including inventory levels, usage, and costs. This helps to keep the project within budget.
4. **Project Types (Residential and Commercial):**
   The database distinguishes between residential and commercial renovation projects. This distinction allows customized handling of each project type, accommodating differences in scale and complexity.

Real Life Example:

In a real-life scenario, a homeowner approaches a renovation company to remodel their living room. The company assigns a supervisor to oversee the project. The supervisor first works with a designer to create custom plans for the renovation, specifying design elements such as lighting, wall color, and furniture layout. After finalizing the designs, the supervisor brings in multiple contractors, each responsible for different parts of the renovation. For example, one contractor is hired for carpentry work (installing cabinets and shelves), another for lighting installation, and another for painting the walls. The contractors hire wage workers to assist in their respective areas of expertise, and each contractor is responsible for purchasing the necessary materials to complete their tasks (e.g., wood for carpentry, light fixtures for electrical work, paint for walls). The supervisor oversees the entire process, coordinating the contractors and ensuring that all aspects of the project are aligned with the timeline, and budget. Once the work is completed, the project is handed back to the homeowner for final review and feedback.

Database Specifications:

This database will provide several functionalities to facilitate the efficient coordination of renovation projects.

Project Organization and Monitoring:

- Users can create and manage multiple renovation projects within the database. Each project can be set up with unique details such as start and end dates and budget limits.
- It allows users to track the progress of each renovation project against its timeline and budget.

Budget Management:

- Users can input and update budget information, track actual spending on materials,wage workers,contractors and compare it against the planned budget.

Review System:

- Upon project completion, owners can enter comments and ratings for the services received. This feedback is stored in the database and can be used for service improvement.
- Reviews help maintain high standards of work and provide valuable feedback to all the teams.

Application Platform:

The project will use the department-provided Oracle database to store and manage renovation project data, including project details, stakeholders, and resource allocation. Our technology stack includes PHP to implement our project.

Notes:

1. Our project differs from blacklisted topics in that it specifically models the hierarchical relationships in renovation projects, focusing on how supervisors manage multiple contractors and how contractors hire wage workers for specialized tasks. Additionally, it integrates detailed budget tracking, material usage, and differentiates between residential and commercial projects, offering a more specialized, real-world approach rather than just organizing data like basic tasks or inventory systems.

2. In our ER diagram, we have modeled **Wage Worker** as a weak entity under **Contractor**. This decision reflects the real-world dependency of wage workers on the contractors for their employment in renovation projects. Wage workers do not have an independent existence in the system and are hired specifically for a given project under the supervision of a contractor. Their tasks, wages, and roles are defined entirely by the contractor, which means they cannot exist in the database without being associated with a contractor.

ER Diagram: