

CPSC 304 Project Cover Page

Milestone #: 1

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Group Number: 102

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Dildeep Dhillon	20025276	i6h3o	dhillon_32@hotmail.com
Tim Sabanshi	14123335	04e7q	t.sabanshi@gmail.com
Jaskirat Gill	97471445	t9h6b	gilljaskirat04@gmail.com

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

Domain

The domain of this application is construction management. We specifically focus on budgeting and financial management within construction projects. This domain contains planning, monitoring, and controlling of financial resources for construction projects.

Aspects Modeled by the Database

The database models several key aspects of financial management to address budgeting and cost control in construction projects. These aspects include:

- **Budget Allocation and Tracking:** The database models the allocation of budgets to labor, materials, equipment, and subcontracting services.
- **Investor and Funding Management:** We also capture information related to investors, including ownership structures and financial contributions. This is important for managing investor relations and ensuring that financial expectations are met.
- **Contractor and Subcontractor Financial Transactions:** The financial interactions between general contractors, subcontractors, and developers are modeled to ensure accountability and transparency. This includes contract values, payment schedules, and tracking of payments made and received.
- **Financial Reporting and Analysis:** The application will also be able to show financial reports and analyses. This would include projections, cash flow analysis, and profitability assessments, enabling the business to make informed decisions.

Real-life Application

A real-life application of this database could be in managing the construction of a real estate development, such as a shopping center. The application would allow project's financial managers to allocate budgets to different aspects of the project, such as site preparation, construction of individual retail units, landscaping, and infrastructure development. It would help with tracking expenses from contractors and subcontractors. The application would also manage the financial contributions of various investors. This application could be used to provide financial reports, and the application would assist the developer in making informed decisions regarding additional investments, project scaling, or other financial adjustments to ensure the project's profitability.

Database Specifications

The database will provide functionality for financial management within construction projects, enabling users to budget, track where their money is going, and compare actual costs against projected budgets. Users will be able to manage and monitor financial transactions with contractors and subcontractors, oversee resource allocation, and generate financial reports and analyses to support their decisions. Also, the database will show investor management, including tracking investments and distributions, ensuring transparency and accountability in financial operations.

Description of the Application Platform

The project will utilize MySQL as the database management system. The application's front end will be developed using React, a JavaScript library for building good user interfaces, and as for the back end, we were thinking of using Node.js. This technology stack, combining React with Node.js and MySQL, is well-suited for developing a full-stack application that can interact with the database and create an intuitive user interface for end-users.

ERM Diagram

