

19CSE204

Construction Company Management System

PROJECT REPORT



Group 3

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B.Tech CSE C S3 2020-24

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ABSTRACT

Construction project cost is the key problem in the control and management of construction projects. For the existing cost system can not adapt to the development of the construction industry information needs of the status, this project based on the use case model technology to the construction cost system function demand analysis provides support for the system development. The research content is based on the construction cost structure, and design the use case model of construction cost system, design the construction project cost system function frame. The core function of the system is composed of “ Template information management, Supplier information management, Cost model management, Project cost management, Cost control management, System maintenance management” six modules, each of which contains a number of submodules.

PROJECT SUMMARY

The idea of the project is to develop a construction management system which focuses on some modules of management of construction which allows the users to maintain the record of customers, builders, retailers and also allows doing the manual operation in an automated form. This project has been developed using java swings as the front end and Postgres server as the backend. Security is an important aspect of the project and is maintained using a username and password which is unique for each user or superuser, who can only log in by using the correct username and password assigned to them.

Client (CCMS) requirements:

The company constructs houses/offices for its customers. A customer can have multiple sites and he may wish to build multiple projects on different sites. Before starting a project the supervisor verifies the customer's site and approves the project. The company is divided into groups and each of these groups manages a particular type of project (commercial, residential). These project groups are headed by the manager who tracks the builder performance, project status and also allocates the projects to builders. The supervisor supervises the builders and their project progress, He also plays a major role in allocating the raw materials and subcontracts to the projects as and when required. The raw materials required for the projects are supplied by the retailers. The supervisor identifies the requirements(raw materials) for a project and proposes his statement accordingly, the accepting authority places the order with the retailer who has a good rating and whose materials are cost-effective. The accepting authority also takes care of the subcontracts required by the project. The builder updates his progress daily, this work is supervised by both the manager and supervisor. The manager and the supervisor keep the customer informed about the progress of his project.

Functional Requirements of the System

Project management

- Create a well-planned bid management process
- Examine your construction methodology
- Use software to execute your construction management plan

Cost management

- Plan budget by analyzing project scope and constantly monitoring expenses
- Use cost estimating tools that integrate with cost data books to create accurate estimates

Time management

- Use tools like Gantt chart to create project schedules
- Manage priorities by creating a risk management plan

Quality management

- Draft a quality standards program for your organization
- Ensure adherence to the program by using quality control measures

Contract administration

- Create a contract administrator role, who will manage the company's contracts and devise a communication plan
- Use contract management software to facilitate the contract administration process

Safety management

- Identify safety hazards on construction sites and improve awareness among employees
- Uses tools like BIM, drones, and wearable to improve job site safety.

Use cases

- Login
- Project
- Builder Details
- Retailer Details
- Logout

ACTORS

1. Customer
2. Retailer
3. Manager
4. Supervisor
5. Builder
6. Accepting Authority
7. Admin

DATA

<u>SerialNo</u>	<u>Usecase</u>	<u>Primary Actors</u>	<u>Description</u>
1	Customer Login	Customer	Login to his account. If the credentials of the customer turn out to be incorrect then an error message is displayed in return otherwise he successfully logs in to his account.
2	Track Project Status	Customer	It shows the customer how far his projects have reached. That is the status of his projects.
3	Enter Site Information	Customer	The customer can enter the details of the new site which he wants to give to the company for construction. Now, these details are verified by the supervisor and if they are not authentic then it will lead to contract cancellation.

4	Customer	New Customer	Since a new customer will not have an
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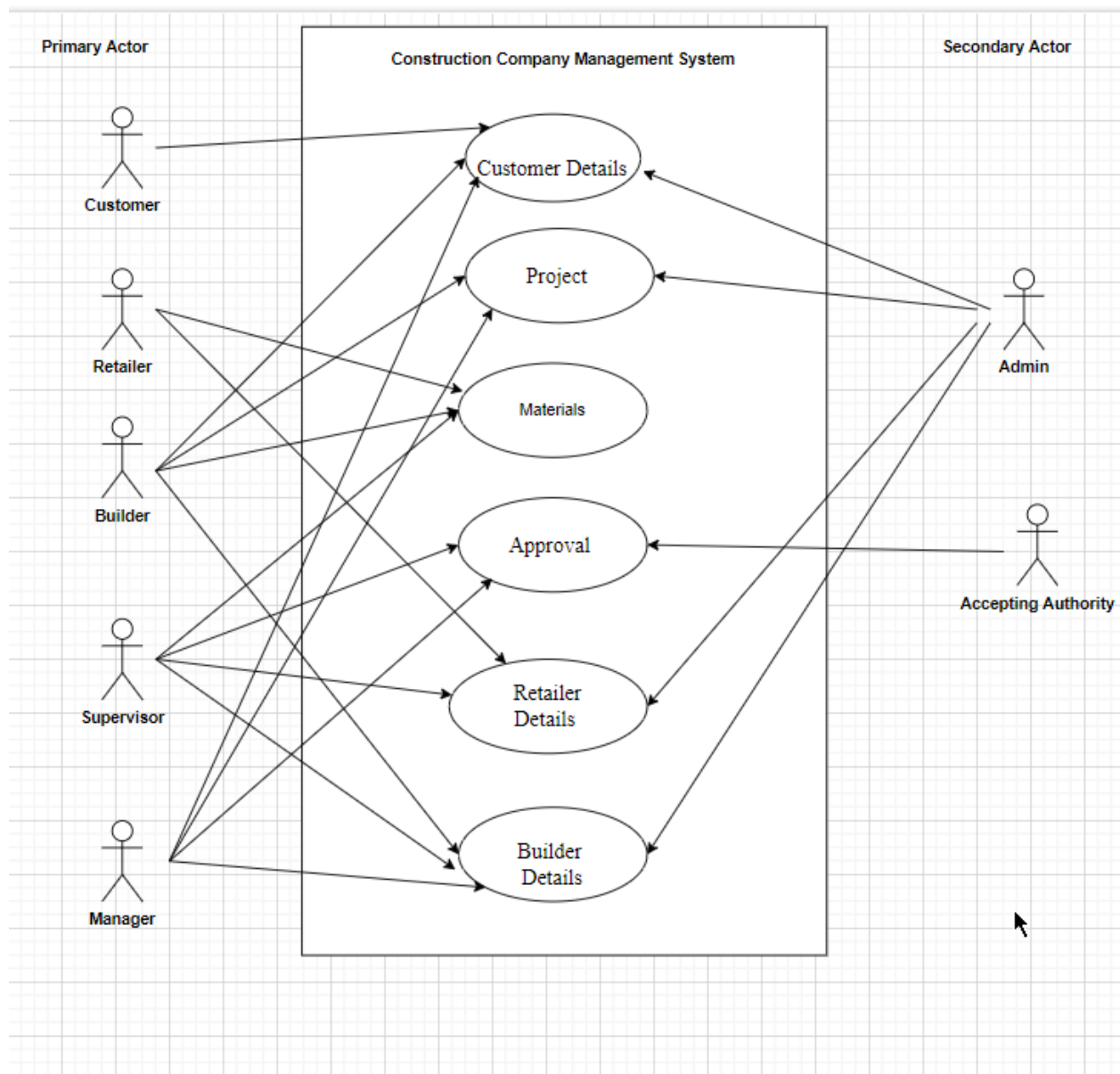
	Registration		account, he needs to create one.
5	Retailer Login	Retailer	Login to his account. If the credentials of the retailer turn out to be incorrect then an error message is displayed in return otherwise he successfully logs in to his account.
6	Enter new material details	Retailer	If a retailer has a new set of materials that can be used in construction then he can enter it and these details will be added to the database.
7	Order Reminder	Retailer	A Retailer will be informed if he is assigned to an order and he can ship that order to the respective site.
8	Retailer Registration	New Retailer	Since a new Retailer will not have an account he needs to create one.
9	Manager Login	Manager	Login to his account. If the credentials of the Manager turn out to be incorrect then an error message is displayed in return otherwise he successfully logs in to his account.

10	Project Allotment	Manager	The manager has the authority to assign the project type and all other details about the project once the site verification is completed successfully.
11	Builder Project Allotment	Manager	The manager has the authority to assign a particular project to a builder.
12	Track Builder Performance	Manager	The manager tracks the performance and efficiency of the builder and if he performs well then the manager can give him a salary boost.
13	Supervisor Login	Supervisor	Login to his account. If the credentials of the Supervisor turn out to be incorrect then an error message is displayed in return otherwise he successfully logs in to his account.
14	Allocating Raw materials	Supervisor	A supervisor decides what all raw materials are needed for the construction of a particular project and depending on that he will create a list containing all raw materials.
15	Allocating Sub Contracts	Supervisor	A supervisor also decides what all requirements should be procured as subcontracts like any machinery, equipment, etc.
16	Builder Login	Builder	Login to his account. If the credentials of the Builder turn out to be incorrect then an error message is displayed in return

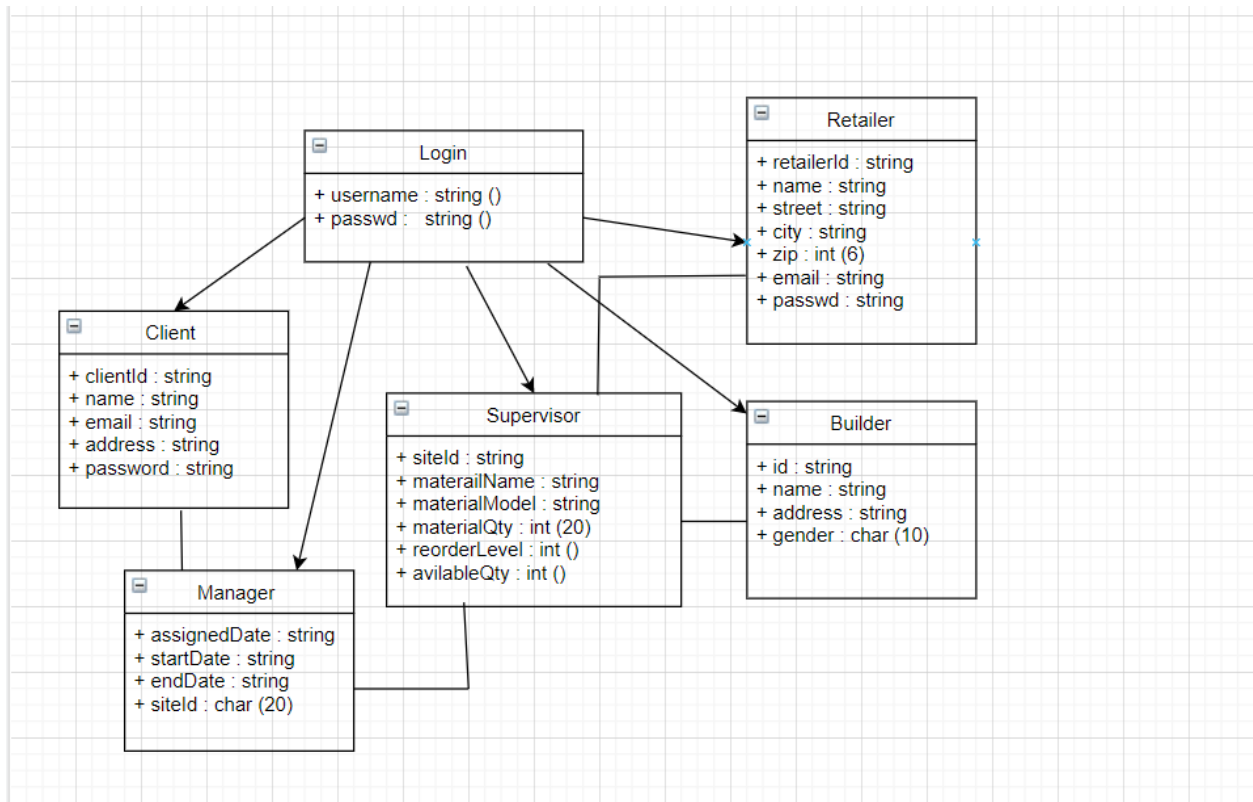
			otherwise, he successfully logs in to his account.
17	Update Project Status	Builder	A builder daily updates all tasks he has achieved on that day related to a particular project.

<u>Serial No</u>	<u>Use case</u>	<u>Secondary Actors</u>	<u>Description</u>
1	Verify Site Info	Supervisor	A supervisor verifies the site information and updates his response in the system.
2	Order Approval	Accepting Authority	An Accepting Authority places the order of raw materials to a particular retailer depending on the retailer rating, price, etc. And finally approves it.
3	Sub Contract Approval	Accepting Authority	An Accepting Authority selects a subcontractor based on the requirements.
4	Modify Builder Details	Admin	An admin has the job of keeping the database consistent and up to date so he has the authority to remove those builders who left the company.
5	Modify Retailer Details	Admin	He also has the authority to remove all the retailers who stopped supplying raw materials to the company.

USE CASE DIAGRAM



CLASS DIAGRAM



OOPS CONCEPT USED IN THIS PROJECT

We have used the oops concept like :

- Polymorphism
- Abstraction
- Inheritance
- Encapsulation.

USER INTERFACE

Homepage



Login Page

User Login

VERTIGO DEVELOPERS

Welcome to login page!

Login type:

User ID:

Password:

Client Login

The image shows a web application interface with two windows. The main window, titled 'User Login', has a light gray background. At the top, it displays 'VERTIGO DEVELOPERS' in a large, bold, black serif font, followed by 'Welcome to login page!' in a smaller, italicized, yellow serif font. Below this, there are three labels with corresponding input fields: 'Login type:' with a dropdown menu showing 'Client', 'User ID:' with a text input field, and 'Password:' with a text input field. A blue 'Enter' button is positioned below the password field. A modal dialog box, titled 'Have You Registered?', is overlaid on the main window. It has a white background and a thin gray border. Inside the modal, it asks 'New Client?' in a black serif font, followed by a blue 'Register!' button. Below that, it asks 'Already Registered?' in a black serif font, followed by a blue 'Continue' button. A mouse cursor is pointing at the 'Already Registered?' text.

User Login

VERTIGO DEVELOPERS
Welcome to login page!

Login type: Client

User ID:

Password:

Enter

Have You Registered?

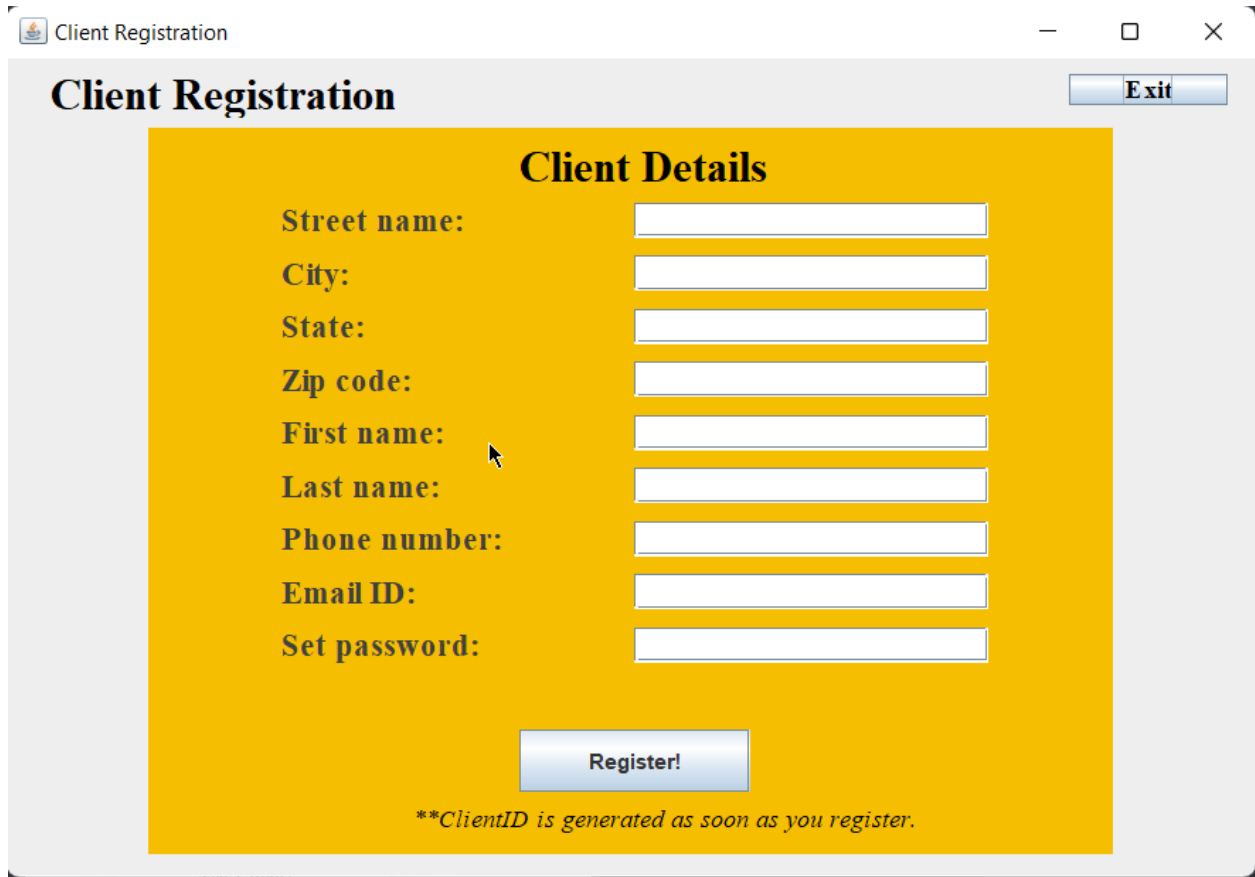
New Client?

Register!

Already Registered?

Continue

Client Registration



The image shows a software window titled "Client Registration". It has a standard Windows-style title bar with a minimize button, a maximize button, and a close button. Inside the window, there is a yellow rectangular area with the title "Client Details" at the top. Below this title, there are eight text input fields, each preceded by a label: "Street name:", "City:", "State:", "Zip code:", "First name:", "Last name:", "Phone number:", and "Email ID:". Below these fields is a "Set password:" label followed by a text input field. At the bottom of the yellow area is a blue button labeled "Register!". Below the button, there is a line of italicized text: "**ClientID is generated as soon as you register." In the top right corner of the window, outside the yellow area, is a blue button labeled "Exit".

Client Registration

Exit

Client Details

Street name:

City:

State:

Zip code:

First name:

Last name:

Phone number:

Email ID:

Set password:

Register!

***ClientID is generated as soon as you register.*

Client Page

The screenshot shows a window titled "Client" with a standard Windows title bar (minimize, maximize, close buttons). The window content includes a welcome message, a table of projects, and an "Add Site" button.

Welcome! Aniana Suresh **Client** **Exit**

Your Projects

SiteID	Verificatio...	Start_date	End_date	Status	City	State
S1	verified	05-06-2018	05-01-020	100%	Hyderabad	Telangana

Add Site

Accepting authority

