Title:

The Constructions Management System (CMS)

Description:

The Constructions Management System (CMS) is an application that will alleviate construction companies of logistics and automates a large amount of processes while still making every detail accessible to administrators and project managers, so that changes can always be adjusted when needed. By handling aspects of management, inventory tracking, and resource allocation, it assists in the efficient delivery of projects.

Place Order

As a customer, I want to place an order for construction services so that I can build or renovate my house.

Acceptance Criteria:

- A customer should be able to create an order, specifying address, the required work, and preferred start date.
- The system should validate that all required fields are filled.
- A customer should be able to view their current and past orders in their profile.
- The customer should be able to modify existing orders that haven't started yet.

Profile dropdown

Respective page information goes here

Make an order

Make your order

House Information

House Information

House Information

Resident Information

Resident Information

Continue

Assign Employee to Order

As a project manager, I want to assign employees to specific customer orders so that the right personnel are responsible for each project.

Acceptance Criteria:

- The manager should be able to assign one or more employees to an order.
- The system should check employee availability to avoid double booking.
- The manager should be able to view the current assignment of employees to orders and reassign them if necessary.
- Employees should be able to view their assigned projects on their dashboard.

Order #XXXXXX

Order info

Employee(s)

Employee Name

Employee Name

Add

**Manage Inventory/Assets**

As an inventory manager, I want to add, update, and remove materials, vehicles, tools from inventory to keep track of stock levels for ongoing projects.

Acceptance Criteria:

- The manager should be able to add / modify materials, vehicles, tools by specifying type, quantity.
- The system should automatically deduct material, vehicles, tools quantities based on project usage.
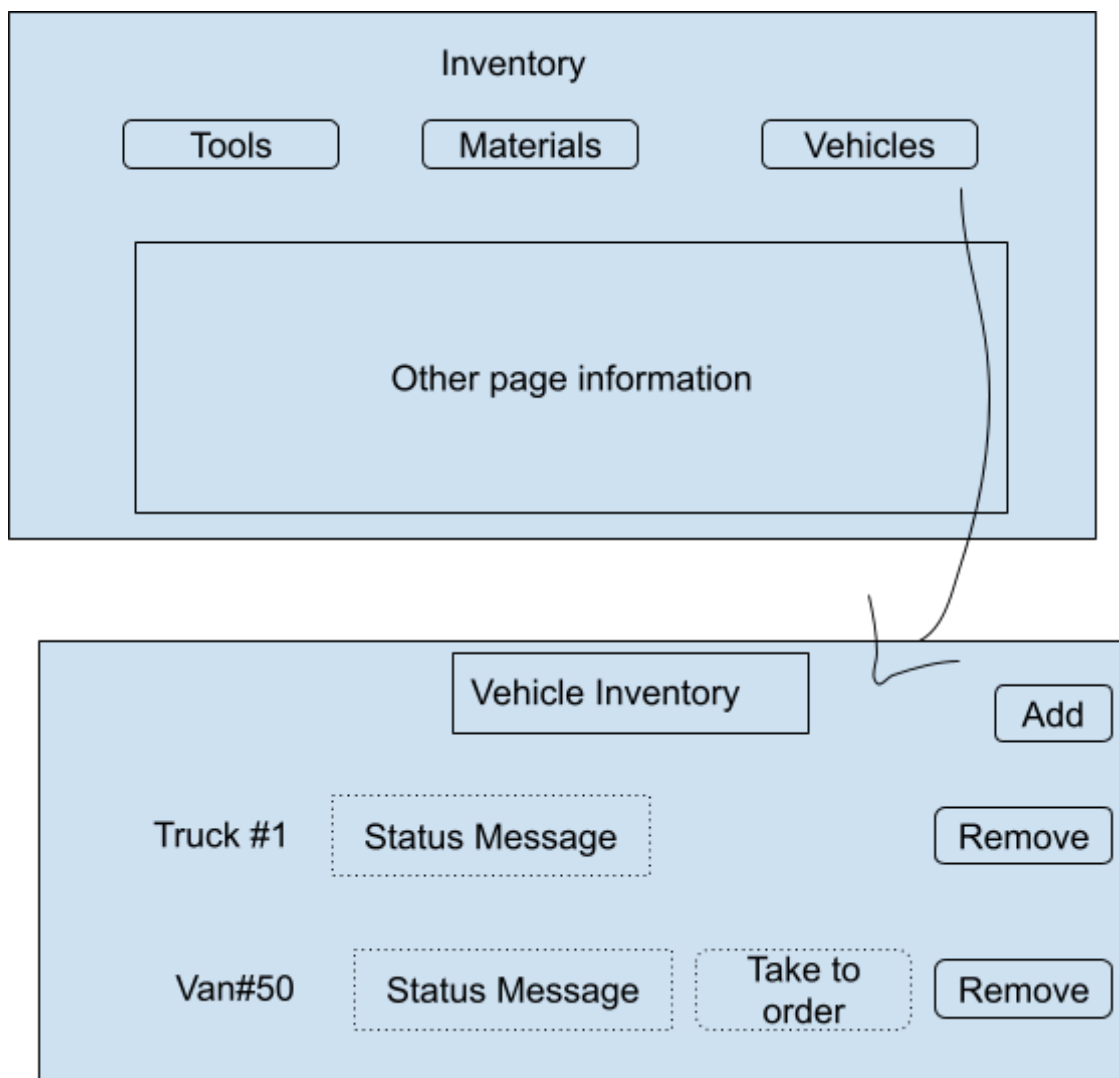
Automatic Tool and Vehicle Selection Based on Material

As a project manager, I want the system to automatically recommend the appropriate tools and vehicles based on the materials selected for a project, so that the process can be as automated as possible and so that I can modify the entries if needed to ensure the correct resources are allocated efficiently.

Acceptance Criteria:

- When materials are selected for a project, the system should automatically suggest the necessary tools based on the type and quantity of the materials.
- The system should verify the availability of the suggested tools and vehicles and recommend alternatives if the first choice is unavailable.
- The manager should be able to manually adjust the suggested tools and vehicles, if needed.
- The automatic tool and vehicle selection should be visible on the order detail page with an option to approve or modify the recommendation.
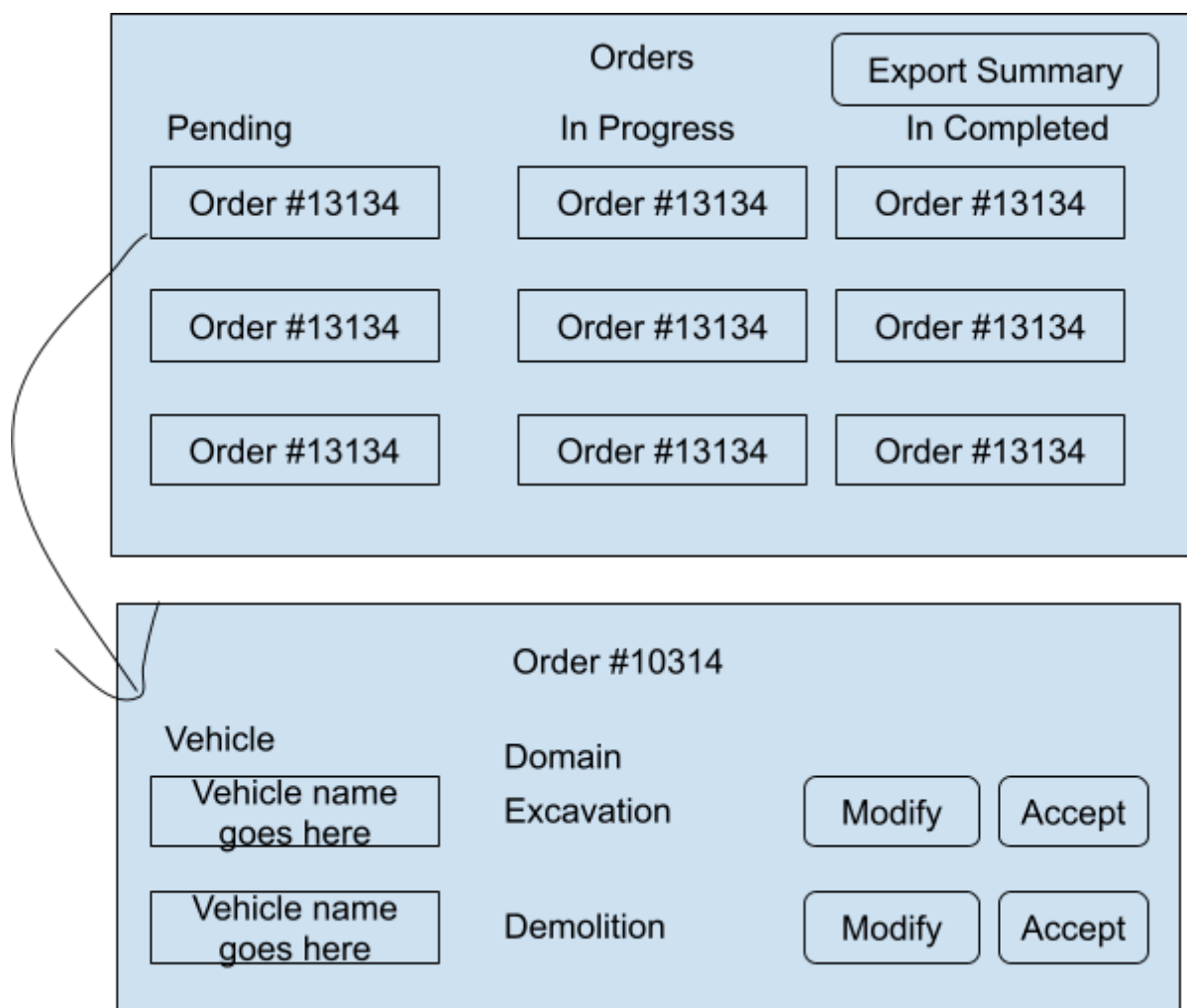
Generate Report for Completed Orders

As an admin, I want to generate a report for all completed orders / single orders so that I can review project performance and profitability.

Acceptance Criteria:

- The admin should be able to filter completed orders by date range, employee, or house.
- The report should display total costs and the profit margin for each order.
- The report should include order details, employee assignments, and materials used.
- The report should be downloadable in PDF.
- The system should ensure that all relevant order details are included in the report.

Order #10314   [Export Summary]

Relevant page information

Orders   [Export Summary]

Pending	In Progress	Completed
Order #13134	Order #13134	Order #13134
Order #13134	Order #13134	Order #13134
Order #13134	Order #13134	Order #13134

Room

- Id: long
- Name: String
- employees: list[Employee]
- Tool_Id: list[Long]
- Material_Id: List[Long]

Employee

- Id : Long
- Name: String
- Domain: String
- Experience: String
- License_Type: String
- Tools_Id: list[Long]
- Vehicles_Id: list[Long]
- Rooms_id : list[Long]

House

- Id : Long
- Address: String
- House_Type: String
- Rooms_Id : list[Long]

Tool

- Id: Long
- ToolWorksOnMaterial: list[Long]
- Name: String

Vehicle

- Id: Long
- Name: String
- License_Type: String

Order

- Id: Long
- Price: float
- Order_Date : Date
- Start_Date : Date
- House_Id: Long
- Customer_Id : Long

Customer

- Id: Long
- First_Name : String
- Last_Name : String
- Address : Boolean

Material

- id: Long
- Name: String
- flameable: bool

Relationships (cardinalities): 1*, 0-1, 0*, 0*, 0*, 0-1, 0*, 0*, 0*, 1, 0*, 0*, 0*, 0*, 1, 1*, 0*

Room

PK	Id
	Name
	Work Description

House

PK	Id
	Address
	House Type
FK	Room_Id

RoomRequiresMaterial

PK, FK1	Id
PK, FK2	Id

Material

PK	Id
	Name
	Quantity

RoomRequiresTool

PK, FK1	Id
PK, FK2	Id

Order

PK	Id
	Price
	Order Date
	Start Date
FK1	House_Id
FK2	Customer_Id

Customer

PK	Id
	Firsit Name
	Last Name
	Address

ToolWorksOnMaterial

PK, FK1	Id
PK, FK2	Id

Tool

PK	Id
	Name

Employee

PK	Id
	Experience
	Name
	Domain
	License Type
FK1	Room_Id
FK2	Vehicle_Id
FK3	Tool_Id

Vehicle

PK	Id
	Name
	Domain
	Speciality