Software Engineering Internship Assessment – Blockward Backend System – Documentation & Setup Guide

Project Overview

- Backend: Node.js + Express

- Database: MySQL (via local PHP server)

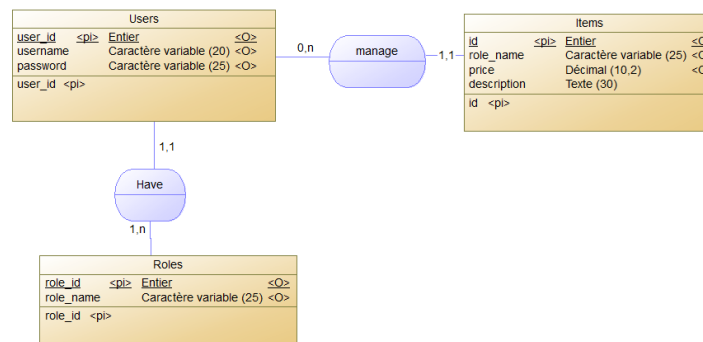- Tools: npm, phpMyAdmin, Postman

Database Schema Overview

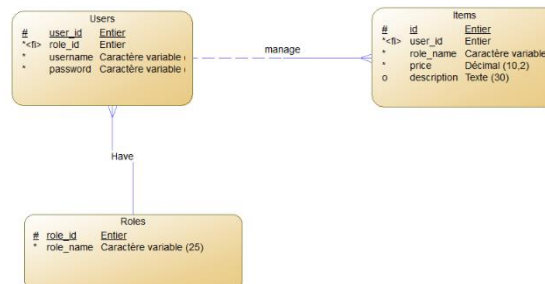*Figure 1 – Conceptual Data Model (CDM)*

Figure 2 Logical Data Model (LDM)

The diagrams were designed using PowerAMC to reflect the system's core entities and relationships.

SQL Script – Database Creation

```
CREATE DATABASE IF NOT EXISTS inventory_db;

USE inventory_db;


DROP TABLE IF EXISTS ITEMS;

DROP TABLE IF EXISTS USERS;

DROP TABLE IF EXISTS ROLES;

CREATE TABLE ROLES (

  ROLE_ID INT PRIMARY KEY AUTO_INCREMENT,

  ROLE_NAME VARCHAR(25) NOT NULL UNIQUE

);


CREATE TABLE USERS (

  USER_ID INT PRIMARY KEY AUTO_INCREMENT,

  USERNAME VARCHAR(20) NOT NULL,

  PASSWORD VARCHAR(255) NOT NULL,

  ROLE_ID INT,

  FOREIGN KEY (ROLE_ID) REFERENCES ROLES(ROLE_ID)

);


CREATE TABLE ITEMS (

  ID INT AUTO_INCREMENT NOT NULL,

  USER_ID INT NOT NULL,

  NAME VARCHAR(25) NOT NULL,

  PRICE DECIMAL(10,2) NOT NULL,

  DESCRIPTION TEXT,
```

```
    PRIMARY KEY (ID),

    FOREIGN KEY (USER_ID) REFERENCES USERS(USER_ID)

        ON DELETE CASCADE

        ON UPDATE CASCADE

);
```

Installation Instructions

Clone the project:
```
git clone https://github.com/cheick18/inventory-management-backend.git

cd inventory-management-backend
```

Import the SQL script:

Use your local MySQL environment (phpMyAdmin, etc) to import `invento_bdd.sql`

Configure environment variables:
Edit the `.env` file with your local MySQL credentials

Install Node.js dependencies:
Run `npm install` from the project root

Start the backend server:
Run `node backend/app.js`

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