INVENTORY MANAGEMENT SYSTEM

(Advanced Programming Techniques)

Professor

Dr. Andreas Fischer

Team Members

Mehtab Ahmed 00772927

Muhammad Ali 732065

Umang Rajpara 00097170

Objective

The main objective of this project is to familiarize with one of the latest programming language and learn all those techniques used in the development of modern applications development e.g, like working team sitting at remote location, unit testing, software requirements reports, deployment of application etc.

Inventory Management System

An inventory management system has several critical components. Inventory systems allow a company to keep track of all its movable assets. The system has an overall summary pages of the items in the inventory like Total Count, Images, Prices, Category and various tags associated with the items. It has proper authentication and authorization for different kind of users of the system.

Implementation Details

The project will be developed according to Agile and Scrum principles. Small sprints will be developed each week and will be deployed to GitLab(an open source web-based Devops). ASP Dot Net Core will be the language for programming in this project. **ASP.NET Core** is a free and open-source web framework developed by Microsoft and the community. It is a modular framework that runs on both the full .NET Framework, on Windows, and the cross-platform .NET Core. SQLite will be Database and MVC(Model View Controller) will the software pattern used in this project.

Some of the technical details are given below

Core of the project: C# .Net Core

Target OS: Windows, Linux and Mac

Technologies for front-end: HTML, CSS, Bootstrap, jQuery and JavaScript.

Database: SQLite Database.

Technologies for Back-end: ASP.Net CORE

Core Tasks

Homepage

Application will contain the Inventory Items as a Homepage.

Authentication and Authorization

The Admin and Employee can create, update and delete the items.
The inventory system distinguishes between four types of users: administrators, employees, external accountants, and anonymous users.

Admin is super user of the system that can do CRUD operation on Items, Branches, Tags, Accounts.

The Application gives different permissions for registered user through username and password. The different permissions are granted if the username (email) and password are entered correctly.

Login as Start Up Page

When the application starts, Login Page pops up first. The authentication algorithm will be performed by the back-end.

Task 5. Register New User

This can be only done by Admin. The application will have a special web page with a form for registration as a new user. It is necessary to provide email, password etc. to create a new account

Search Functionality

To deal easily with large number of items and users, the application will contains a search bar at the top of the each page.

Input Validations

The system validates the information entered by the user before storing in the system. The system has frontend as Backend validations. The front-end validations improve performance and the backend validations avoid storing the invalid data on the database

Default account for administration

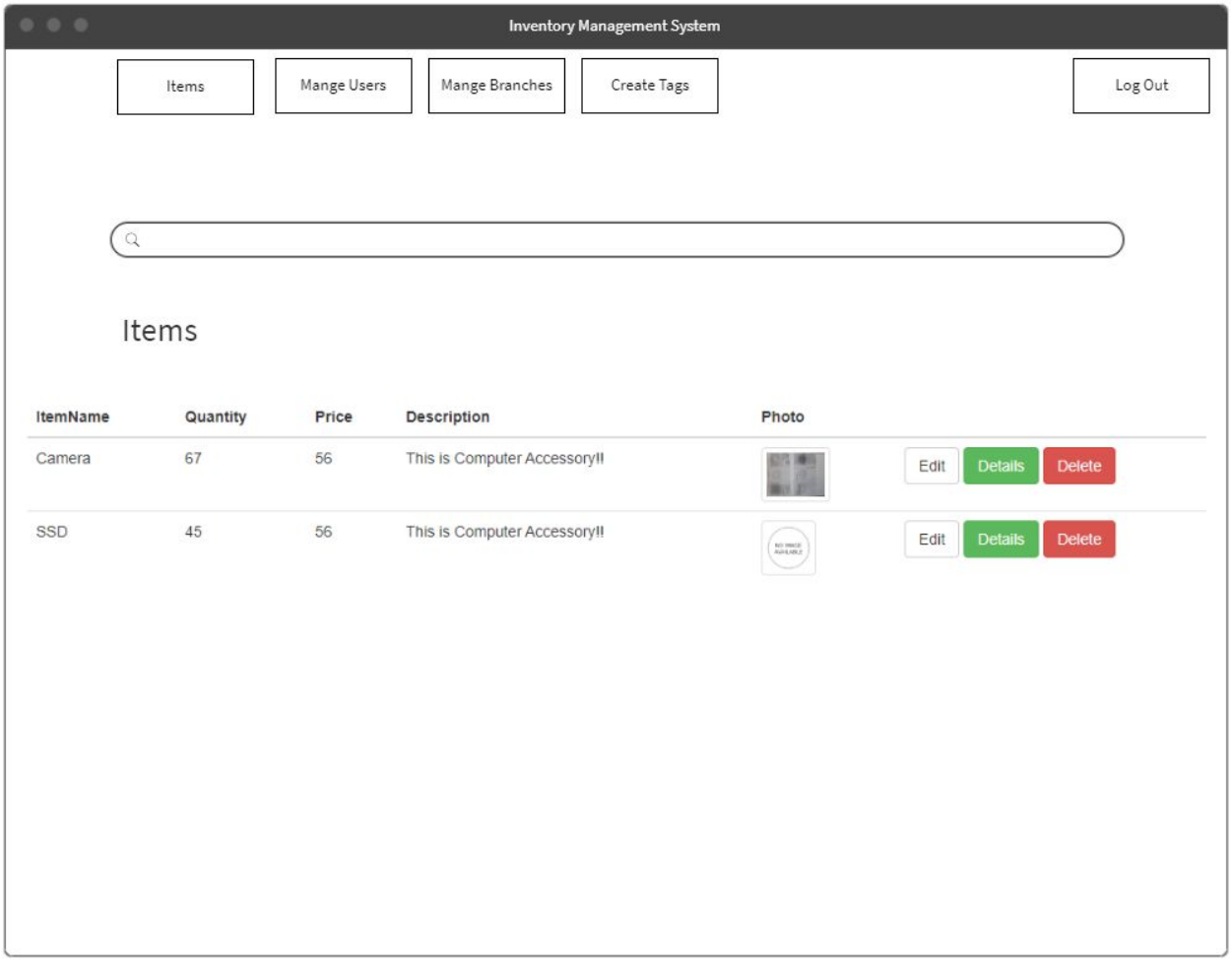
After installation the platform will create a default account for administration.

User Interface

The system distinguishes between four types of users: administrators, employees, external accountants, and anonymous users due this we have different user interface for each user.

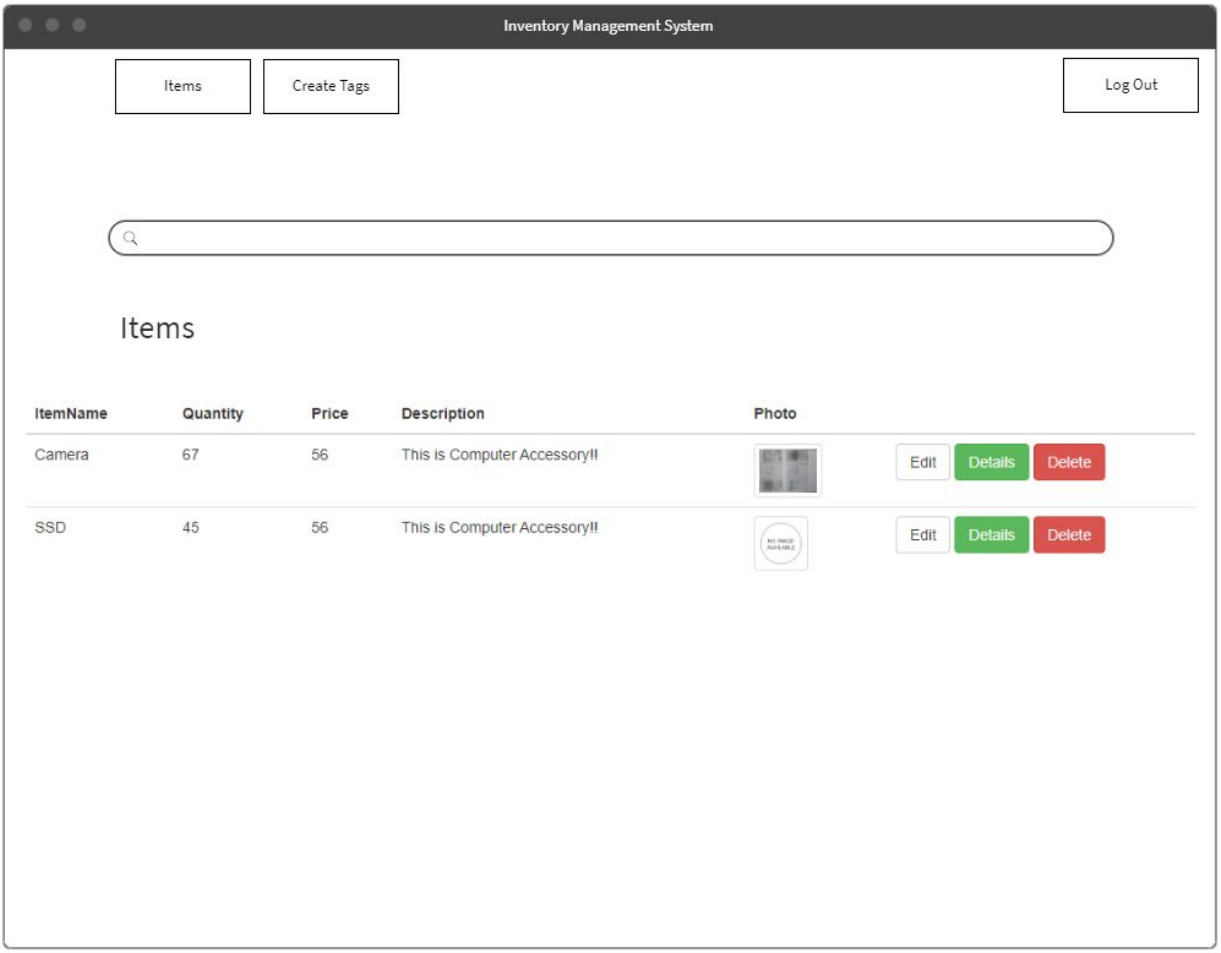
Admin UI

An Admin UI contains Items, Manage users, Manage Branches and Creates Tags in a Navigation bar. Below is the mockup of the Admin UI



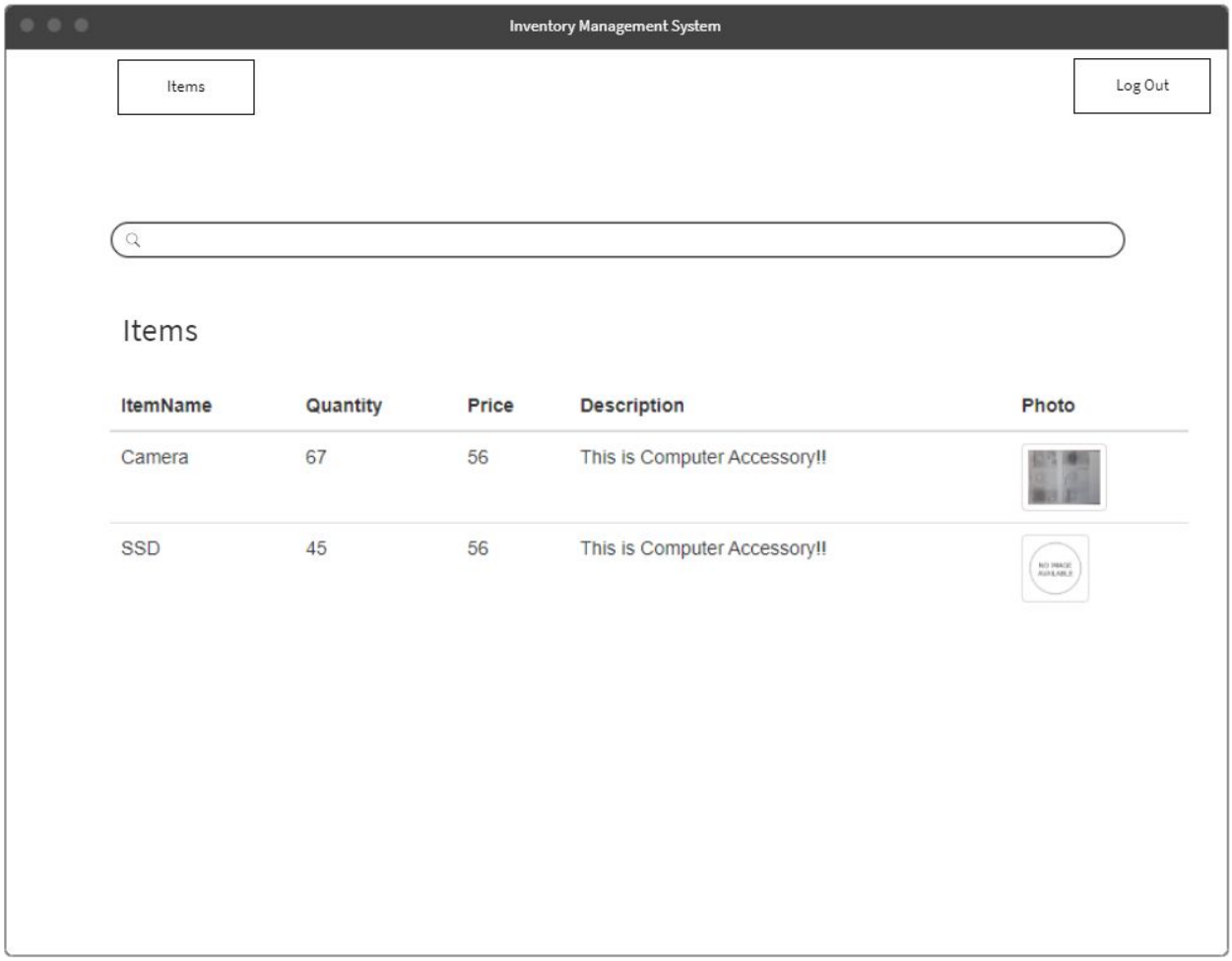
Employee UI

Employee can make Crud Operation on Items so only Items Tab is visible to the Employee (Tags also Visible) on the Navigation Bar



External Accountants UI

External Accountants only view Items summary so they can only view the summary of the Items with no CRUD functionality available to them.


Inventory Management System
Items
Log Out
Items
ItemName
Quantity
Price
Description
Photo
Camera
67
56
This is Computer Accessory!!
SSD
45
56
This is Computer Accessory!!

Team Members and Responsibilities

Mehtab Ahmed

Back-end: Develop Functional Requirements of our Application using C# and ASP.Net Core.

Muhammad Ali

Front-end and Back-end: Develop basic web page content and control the visual layout. Also providing support in the implementation of backend functionality.

Umang Rajpara

Deployment, improving functionality, Testing and Documentation: Develop an appropriate testing suite to test functionality developed as well as Documentation.