Smart Inventory System: Technical Installation Manual

Helix

Contents

1 Introduction

Smart Inventory is a comprehensive web-based application designed to revolutionize inventory management for businesses of all sizes, including restaurants and laboratories. The system consists of two main components:

1. **Front-end:** An Angular-based user interface that provides an intuitive and responsive experience for managing inventory.

2. **Back-end:** A serverless architecture powered by AWS services, including DynamoDB for data storage, Lambda for serverless computing, and API Gateway for RESTful API management.

This manual will guide you through the process of setting up both the front-end and back-end components of the Smart Inventory system on your local machine for development purposes. It will also cover the deployment process using AWS Amplify.

2 Prerequisites

Before beginning the installation process, ensure you have the following software installed on your system:

- Node.js (version 18.0.0 or later)
- npm (version 10.8.1 or later)
- Angular CLI (version 18.0.2)
- AWS CLI (version 2.x)
- Git (latest version)
- Visual Studio Code (or any preferred code editor)

2.1 Installing Prerequisites

2.1.1 Node.js and npm

1. Visit the official Node.js website: `https://nodejs.org`

2. Download and install the latest LTS version (18.x.x) for your operating system.

3. Verify the installation by running:

```
1 node --version
2 npm --version
3
```

2.1.2 Angular CLI

Install Angular CLI globally using npm:

```
1 npm install -g @angular/cli@18.0.2
```

Verify the installation:

```
1 ng version
```

2.1.3 AWS CLI

1. Follow the installation guide at: `https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html`

2. After installation, configure AWS CLI:

```
1 aws configure
2
```

Enter your AWS access key ID and secret access key when prompted.

2.1.4 Git

1. Download and install Git from: `https://git-scm.com/downloads`

2. Verify the installation:

```
1 git --version
2
```

2.1.5 Visual Studio Code

1. Download and install from: `https://code.visualstudio.com/`

2. Install recommended extensions for Angular development:

   - Angular Language Service
   - ESLint
   - Prettier

3 Installation

3.1 Cloning the Repository

1. Open your terminal or command prompt.

2. Navigate to the directory where you want to clone the project.

3. Run the following command:

```
1 git clone https://github.com/yourusername/Smart-Inventory
    .git
2 cd Smart-Inventory
3
```

3.2 Installing Dependencies

1. In the project root directory, run:

```
1 npm install
2
```

This will install all necessary dependencies listed in the package.json file, including:

- @angular/animations: ˆ18.0.0
- @angular/cdk: ˆ18.0.3
- @angular/common: ˆ18.0.0
- @angular/compiler: ˆ18.0.0
- @angular/core: ˆ18.0.0
- @angular/forms: ˆ18.0.0
- @angular/material: ˆ18.0.3
- @angular/platform-browser: ˆ18.0.0
- @angular/platform-browser-dynamic: ˆ18.0.0
- @angular/router: ˆ18.0.0
- @aws-amplify/ui-angular: ˆ5.0.16
- aws-amplify: ˆ6.3.4
- rxjs: ˜7.8.0
- zone.js: ˜0.14.3

3.3 Configuring AWS Amplify

1. Install the Amplify CLI globally:

```
npm install -g @aws-amplify/cli@6.x
```

2. Initialize Amplify in your project:

```
amplify init
```

Follow the prompts to configure your project.

3. Add necessary Amplify categories (API, Auth, Storage):

```
amplify add api
amplify add auth
amplify add storage
```

Follow the prompts for each category to set up your backend resources.

4. Push the changes to create the AWS resources:

```
amplify push
```

4 Deployment/Running

4.1 Local Development

To run the application locally:

1. Start the development server:

```
ng serve
```

2. Open a web browser and navigate to `http://localhost:4200`

4.2 Production Deployment

To deploy the application to AWS:

1. Build the production version of your app:

```
1 ng build --prod
2
```

2. Deploy using Amplify:

```
1 amplify publish
2
```

   This will deploy your front-end to AWS Amplify hosting and update your backend resources if necessary.

4.3   Accessing the Deployed Application

After successful deployment, Amplify will provide a URL where your application is hosted. You can access your application through this URL. `https://main.d20fi26o9migpb.amplifyapp.com`

5   Testing

To run the Cypress tests:

1. Component tests:

```
1 npm run test:component
2
```

2. E2E tests (make sure your app is running locally first):

```
1 npx cypress run
2
```

6   Troubleshooting

If you encounter any issues during installation or deployment, please refer to the following resources:

- Angular documentation: `https://angular.io/docs`

- AWS Amplify documentation: `https://docs.amplify.aws/`

- Project GitHub Issues page: `https://github.com/COS301-SE-2024/Smart-Inventory/issues`

If you can't find a solution, please open a new issue on the GitHub repository with a detailed description of the problem and steps to reproduce it.

7 User Manual

For detailed instructions on how to use the Smart Inventory system, please refer to the user manual at: [Link to User Manual]

Note: Always ensure you're using the correct versions of packages and dependencies as specified in the `package.json` file to maintain compatibility and stability of the system post-development. Regularly check for updates and security patches for all dependencies.