Vactrack

Technical Description Documentation

Change Log

#	Description	Author	Date
1	Initial Draft	Mahesh Gupta	29/09/21
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1. Overview

E-retail is an internet application that will be used by several users simultaneously and our intended customers are from different regions. The application should have multiple ways to perform any operation and the number of navigation/redirection of the page should be less.
The application is intended to be available online 24 hours per day, 365 days per year, with exception of scheduled downtime or system maintenance. Several aspects that can affect the performance of the application including but are not limited to are activity spikes due to promotions, high volume at launch, usage pattern analysis, and internet access speeds.
The application is non-critical, temporary inaccessibility will not create any substantial burden on any other service or user. The daily backup protocols will be followed which include but are not limited to storing confidential data in another region. All other failure contingencies are needed to be taken care of by the developing party.

Milestone 1:

a) Developing the application back-end such that it can be integrated with any other external system. To achieve this, the system will expose RESTful APIs via HTTP to provide data in JSON format.
b) The decoupled system architecture is desired for updates and improvements. The flexibility of the system should be maintained all the time. Using of version control tools and code customization needs approval before use.

Milestone 2:

a) the data/information displayed on the application front-end needs to be changed dynamically(without page reloading/redirecting). For this, data rendering pipelines need to be developed for asynchronous data flow which will trigger the UI refresh and will change the data state.

2. Project Description

The e-retail application will be built using Python and Javascript, both of which are open-source and free. The frameworks that will be used along with the programming languages are Django Rest Framework (used for web development in python) and ReactJS (used for designing UI/UX for web). Both of the frameworks are free. The data will be stored in PostgreSQL which is a relational database and is free. Many standard libraries will be used for developing different components such as Material UI and React Bootstrap. Program dependencies will be maintained by respective package managers (pip / npm). The application will be able to run on any web server which supports python3.X and RDBMS.

The source code will be stored on a mutually agreed platform. The application code will use Gitlab version control, all commits will be archived in a designated repository that can be made available to others.

3. Project Details

Following are some general and technical details of the project:

GENERAL

Client Name **: Internal**

Project Start Date : **06/09/2021**

No. of Resources : **1**

Project Type : Web Application

TECHNICAL

Technology : **Python + Django + ReactJS**

Platform : NA

IDE : **Visual Studio Code**

Development Env. : **Localhost**

Hosting Env : **NA**

Browser Support : All

REPOSITORY

Type : GitLab

URL : **https://gitlab.mindfire.co.in/maheshg/ecommwebapp**

Credentials : Available with admin/individual developer account

4. Tools and Technologies

The e-retail application will be built using the below-mentioned tools and software:

a) **React JS (for front-end development):** Free and open-Source web UI development language.

b) **Python + Django (for back-end development):** both python and Django are open-source and free. Django Rest Framework is used for developing RESTful APIs for any application. It follows the MVT architecture.

c) **PostgreSQL (Relational Database for storing data):** Data will be stored in a PostgreSQL database that is open-source, reliable, and highly scalable.

Other tools:

a) **Postman** : It is a popular API client that makes it easy for developers to create, share, test and document APIs. This is done by allowing users to create and save simple and complex HTTP/s requests, as well as read their responses.

b) **Bootstrap**: open-source toolkit for rapid development of front-end(UI/UX) designs. It has many pre-built components which can be integrated directly with react.

5. Architecture Diagram