Analysis and Design of the Device Servicing based on Django

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Abstract

This paper presents a system that provides online computer stores nearby from various electronic shops available. This project is a website that acts as a central repair store. This web project is developed using HTML, CSS, and BOOTSTRAP as the front end and Django as a back-end. The database stores various customer related details. A user visiting the website can see a wide range of online repair shops available nearby arranged in respective categories. The user may select the desired shop and view its price and there is also a quick view option once the user selects a store, then he/she can contact the store and it is booked for the user. Online repair system is the open source web based project developed with HTML, CSS, BOOTSTRAP and open source DJANGO framework. This web application provides a huge database of different stores over the internet where any person can search for interest repair stores and add it through by buying now options. The optimization of this project has been done and works successfully without delay at the server.

Keywords—python, Django Framework, implementation, optimization, open source

I. Introduction

The initial idea was to develop a program able to scrutinise all the online computer repair stores available nearby for a given period .Includes the Order Processing and before automating an application we have to understand the concept of automation. In automation of any operation we make a system which does work automatically as the respective events occur, for which it is meant. There are some common examples of automation like the autopilot system in the aircraft, automatic home systems (electric system, water system, fire alarm system, doors system etc). These are the best examples of the automation systems. Here we are trying to develop such a type system which provides automation on any type of the online Repair shop. That means a shop which has the type system which provides the facility to the customers of the shop to purchase from the shop without any complexity. For example, if any customer wants to repair any electronic device (computer repair) book from the shop then first of all customers just choose the stream of the stores then he/she can see the more than one type of store there and then he/she can choose the specific store from there. And then choose it by paying the price on the store cash counter and receiving its invoice. This allows the user to get an otherwise time-consuming insight in just a second. A quick overview making it possible for the user to more specifically target stores of personal, local .online computer repair is the name of a product able to do just this developed by programming novices, and this post will take you through the considerations, challenges and solutions faced in the development process.

Django framework is the technology that we are using to develop our project. Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support.

The database refers to a collection of records that manage to produce useful information. The data can be accessed, modified, managed, controlled and organized to perform various data-processing operations. The data is usually indexed across rows, columns and tables that make workload processing and data querying efficient.
There are different types of databases which are of following types:
- Object-Oriented
- Relational
- Distributed

- Hierarchical
- Network

Database Management System (DBMS) refers to the technology solution used to improve and manage the storage and get back data from databases. DBMS offers a systematic approach to manage databases by an interface for users as well as accessing the databases by apps.

II. Literature Review

Various websites and research papers have been developed keeping the idea of device servicing. Few of them are listed here:

1. **GeekstoGo** :- Here's a website that's playing the professional angle a little harder than our last example, but it's still done using the same style. Nice clean white background with pictures that clue you in instantly, and one easy click to whichever type of service you were looking for when you dropped by. You'll notice the copy is neat and minimal. It's available if visitors want questions quickly answered, but also completely out of their way if they're looking to call as soon as possible.

2. **Cowabunga Computers: -** Out of Honolulu has the best website on this list. Like the other websites we've listed, it doesn't take any time at all to figure out who they are and what they're about. Unlike the other websites, they've packed theirs with a bunch of attractive and interactive features. The graphic-style of design means the page rearranges itself to whatever the customer wants. All the content is nicely categorized to make it easier to read. If you want to do something with your website that will set you apart, consider creative websites like this one a perfect model.

III. System Design

The system design contains features, and working of the system. There is also a flow diagram also which gives the overview of the system work. In this system there is a user, one is a customer and the other is the vendor who provides repairing services. These users have many features through which they can view or see the services provided by the vendors. Customers have to register themselves and provide their address to us, we just find them the nearest vendor and they just have to book a home visit. The system uses the python django framework. The main modules involved in this system are

- Register :-It enables users and organizations to independently register and gain access to your system.

- Login :-A login page is a web page or an entry page to a website that requires user identification and authentication, regularly performed by entering a username and password combination.

- Address saver :-

- Admin User

- Shops module

IV. Django web framework features

1) Excellent Documentation; - This is one of the main reasons to **start learning Django**. If we compare Django with other open source technologies, it offers the best documentation in the market.

2) High Scalability:-A lot of MNCs on a worldwide scale use Django and it gets implemented there without any defects or errors. It is the best example of Django being scalable. It provides integrated support for unit testing. A Framework with versatile functioning. Overcoming complex tasks with rapid development.

3) Created as batteries included a web framework.

4) Free flow coding without unwanted code.

5) Django is a web app development framework that has always focused on long term support (LTS) release.

Since its inception in 2008, major releases happen at an interval of three years. So, for a long period of time, the code base will remain stable.

In addition to that, whenever a new release comes, Django has patches of bugs, security, and data loss.

V. Methodology

HTML - the fundamental technology used to define the structure of a webpage. HTML is used to specify whether your web content should be recognized as a paragraph, list, heading, link, image, multimedia player, form, or one of many other available elements or even a new element that you define.

It is used to structure a web page and its content. For example, content could be structured within a set of paragraphs, a list of bulleted points, or using images and data tables

CSS - Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

Without CSS, every web page would be drab plain text and images that flowed straight down the page. With CSS, you can add colour and background images and change the layout of your page — your web pages can feel like works of art!

CSS handles the look and feel part of a web page. Using CSS, you can control the colour of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colours are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

Bootstrap – Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. It solves many problems which we had once, one of which is the cross-browser compatibility issue. Nowadays, the websites are perfect for all the browsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, Phablets, and Phones). All thanks to Bootstrap developers -Mark Otto and Jacob Thornton of Twitter, though it was later declared to be an open-source project.

1. Faster and Easier Web
2. Development.
3. It creates Platform-independent web pages.
4. It creates Responsive Web-pages.
5. It is designed to be responsive to mobile devices too.
6. It is Free! Available on www.getbootstrap.com

It produces fewer cross-browser bugs. It is a consistent framework supported by all the browsers plus CSS based compatibility fixes. It is a lightweight and hence widely used framework for creating responsive sites. Looks, structure, and styles can be customized as per requirement. A simple and effective grid system.

Django - Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support.

Django can be (and has been) used to build almost any type of website — from content management systems and wikis, through to social networks and news sites. It can work with any client-side framework, and can deliver content in almost any format (including HTML, RSS feeds, JSON, XML, etc). The site you are currently reading is built with Django!

Django helps developers avoid many common security mistakes by providing a framework that has been engineered to "do the right things" to protect the website automatically. For example, Django provides a secure way to manage user accounts and passwords, avoiding common mistakes like putting session information in cookies where it is vulnerable (instead cookies just contain a key, and the actual data is stored in the database) or directly storing passwords rather than a password hash.
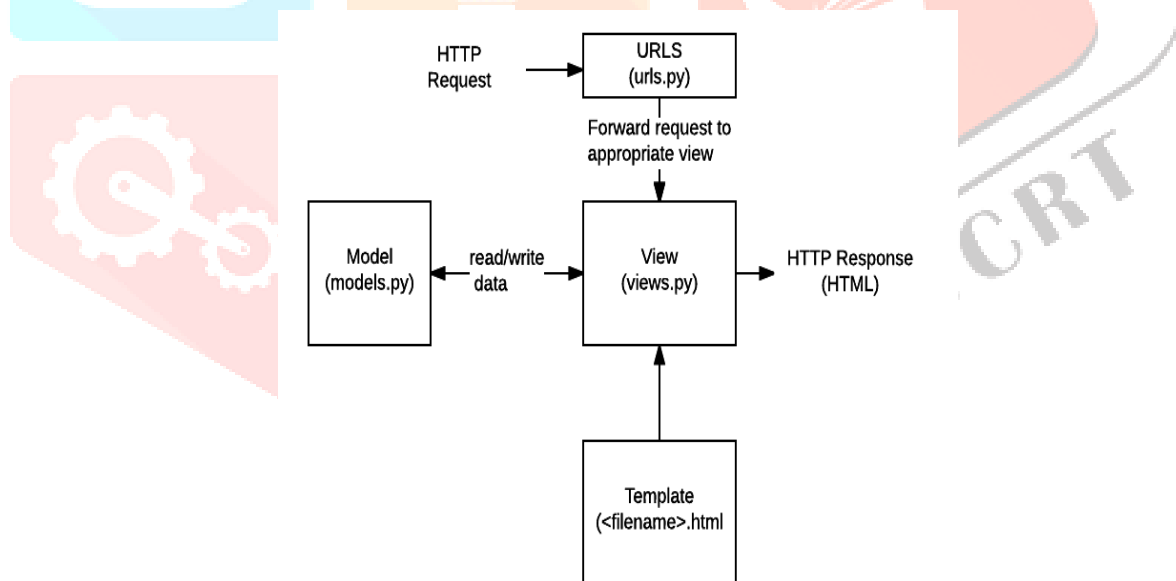

Fig-1 – MVT structure of Django

URLs: While it is possible to process requests from every single URL via a single function, it is much more maintainable to write a separate view function to handle each resource. A URL mapper is used to redirect HTTP requests to the appropriate view based on the request URL. The URL mapper can also match particular patterns of strings or digits that appear in a URL and pass these to a view function as data.

View: A view is a request handler function, which receives HTTP requests and returns HTTP responses. Views access the data needed to satisfy requests via *models*, and delegate the formatting of the response to templates**.**

Models: Models are Python objects that define the structure of an application's data, and provide mechanisms to manage (add, modify, delete) and query records in the database.

Graphical User Interface

The programming languages used in this work are HTML, Microsoft Visual Studio 2010, where programming languages are selected based on the language features that make them more suitable for this work.

In the proposed system, the user begins to register in the system and join as a customer, or join as a delivery officer or maintenance company (as shown in Figure 6, after which the system provides the user with a login form and the user must enter the required information on (as shown in Figure 7),if the information is found correctly through the system search in the database, the user's home page is displayed and enabled to take advantage of the proposed System, in contrast to If the data is incorrect, the user will be redirected to the login page, and the maintenance company interface will show the names of the companies that have joined the E-Station.
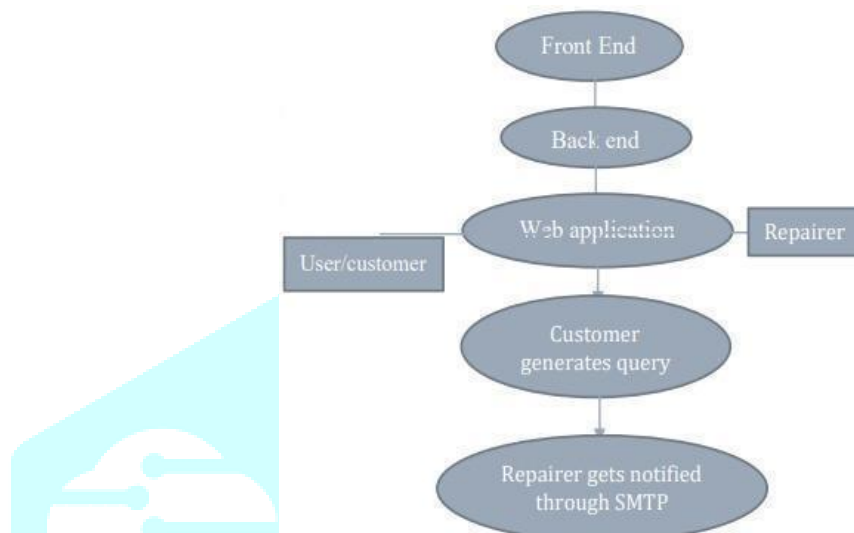
Below is the data flow diagram for project;-

Fig 2. Data Flow Diagram

Some of the features of the proposed system given to the customer and the vendor are:
- Customer Registration/Login
- Nearby Vendor list
- Schedule a visit

To use the features, customers need to register first. In the registration process he or she needs to enter the username, email, password. After registration is done, customers can login by entering the username and password and use the feature. Before getting a list of shops he/she needs to provide his address, after that they are redirected to the nearby shops list page where they can book a visit. Customer and retailer both notified by mail.

Proposed

All the below mentioned data are stored in the back end and can be retrieved.
- Customer Registration/Login.
- Nearby Vendor list.
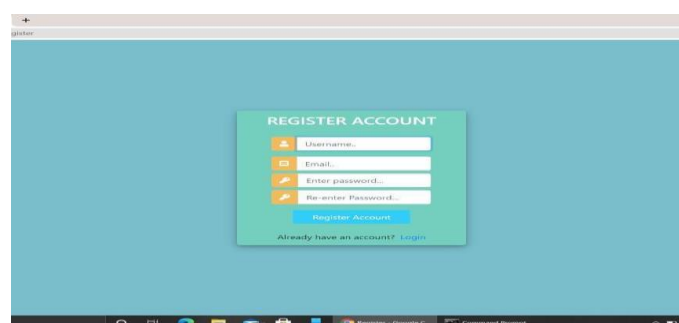- Schedule a visit.

Pages of our Project;-

Image 1. Register page
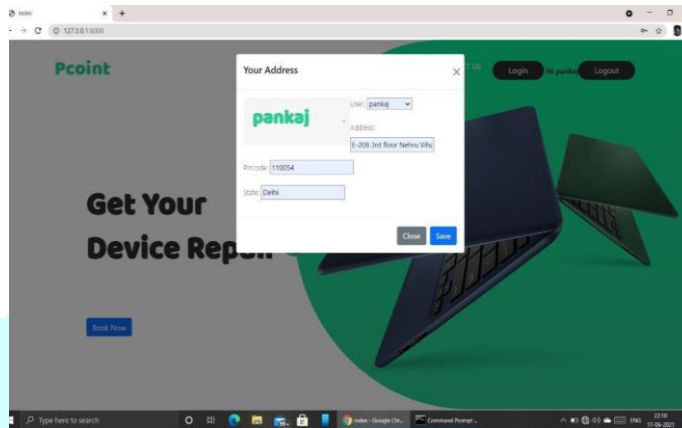
Image 2. Login page
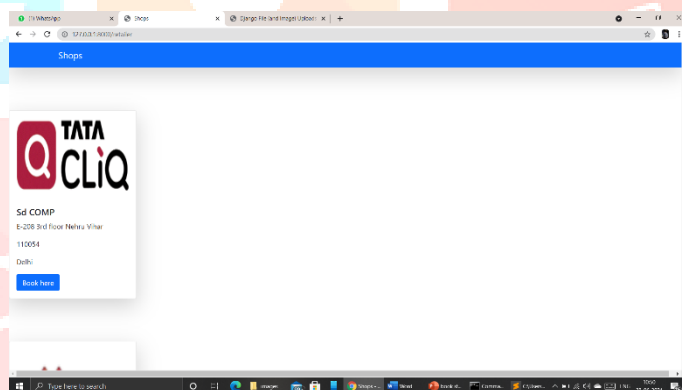
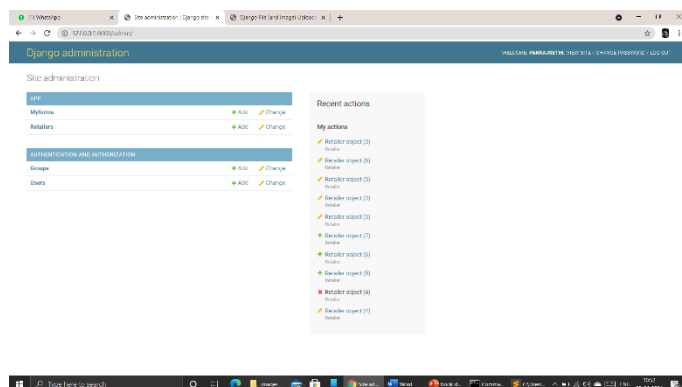

Image 3. Home page

Image 4. Shop list

Image 5. Admin Page

The admin dashboard shows various features that are provided by the system.

VI. CONCLUSION

To conclude, the project is developed using the proper software engineering process,following the iterative model of SDLC. A project control list was created after doing the feasibility study for functionalities as well non-functional requirements. then proper schema and tables that were supposed to be required in the developed process were made and relationships between each table were drawn. For this flow diagram was made which has been illustrated in the paper. Also the flow chart was created so that each process can be done sequentially. After that, each task from the project control list was coded, tested using White Box Testing and implemented separately as per the Iterative Model. At last every unit was integrated and users were selected for Black Box Testing. Each the user was asked to run the project and test each functionality of the project. After the testing, feedback and suggestions were recorded and accordingly the amendments were made. Security issues were resolved with the help of CSRF tags given by the Django Framework and by deploying the Web Application behind HTTPS.

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