Smart City Web Based Application

Shivam Chaudhari[1], Anand Dagwar[2], Sakshi Shinde[3], Sapna Tonge[4], Mohit Agrawal[5]

U.G. Students, Department of Computer Science and Engineering[1,2,3,4,]

Jawaharlal Darda Institute of Engineering and Technology, Yavatmal, Maharashtra, India

shivamchaudhari2876@gmail.com[1], ananddagwar4@gmail.com[2], sakshishinde2018@gmail.com[3]

sapnatonge2000@gmail.com[4], agrawalmohit.ma@gmail.com[5]

Abstract: *The smart city is a web-based application programmed in Java and which provides wide range of database regarding city. The main purpose of the project is to provide pecessary information of the city such as hotels, local news, tourism, education and hospitals. The Smart City Project which serves as city guide for new visitors on daily basis. The implementation of Smart City Project provides the complete solution package for new comers. The use of internet is rapidly growing all the globe. Now a days, people. prefer searching on internet instead of printed maps to get knowledge about the city faster while drinking a cup of coffee. As the data regarding a city which can be accessed from any location about a city. One can get all the information one can desire about the place in couple of clicks and seconds of time through this Smart City Web based application. Below is short review about the modules which will be made available in the project: In Tourism module we will cover the information regarding the place which can be visited in the city by the visitors or the people residing in the city. In Student module we will cover the information regarding school, colleges, university, library present in the city with some reviews about the place from users who have visited the location. In Hospitals module we will cover the information regarding Hospitals, nursing centers, blood bank, pharmacy centers. In News module we will cover the current news about the city by integrating live feed from YouTube. In Hotels module we will cover information regarding hotels, dining places eg.:family restaurants, bars and places where people can stay also referred has lodge at many places and also provides reviews and rating regarding the location. Purpose of this projectis to help the people to explore market around them.*

Keywords: Hotels, News, Tourism, Student, Hospitals

I. INTRODUCTION

'Smart city' is a term used to describe the use of smart technologies and data as the means to solve cities' sustainability challenges. The main objective of the Smart City project is to improve the living standards of the citizens and newcomer of the city by using technology.

Every day, a great number of individuals travel to all of the cities in search of work, further education, health services, tourism, and other opportunities. Newcomers to the city are unfamiliar with the city's entire system at first.

It's pretty hard to find proper hotels reservation, shopping, etc. However, the smart city project objective is to help people find the places which they need quickly with accurate information at a single platform where as people would need to use multiple platforms just to find different places with a user-friendly UI. Smart city is an essential whenever we are visiting a particular city. It gives us the valuable information about the city and saves the time. Our project laid a web-based platform for the city guide and can search place in the city without taking the help of any personal guide.

The main aim of this project is to serve the users who have registered. The information regarding city tourist places, colleges, school, hotel, health services and news about city could be delivered. Our project title is 'Smart City Web-Based Application', a web-based product is used to store the details of particular city and it helps all the users to find their destination place present in the city. This system provides a registration form for all who wants to get the services. This can be categorized as per the requirement of users.

Impact Factor: 6.252

II. METHODS AND MATERIAL

2.1 Eclipse

Eclipse is an integrated development environment (IDE) used in computer programming. It contains a base workspace and an extensible plug-in system for customizing the environment. It is the second-most-popular IDE for Java development, and, until 2016, was the most popular.

Eclipse is written mostly in Java and its primary use is for developing Java applications. Development environments include the Eclipse Java development tools (JDT) for Java and Scala, Eclipse CDT for C/C++, and Eclipse PDT for PHP, among others.

2.2 Java

Java is an object-oriented, class-based, concurrent, secured and general-purpose computer-programming language. It is a widely used robust technology. Java is a programming language and a platform. Whether you are working on a new cutting-edge app or simply ramping up on new technology, Java documentation has all the information you need to make your project a smashing success. Use the rich set of code samples, tutorials, developer guides, API documentation, and more to quickly develop your prototype and scale it up to a real-world application.

In this project we are getting inputs from the user as html cannot send data directly to database so we are using java language to forward the data fetched from the user to the database. As when user request any data from user-end (front view) java will start fetching data from database and send data to front view and user will be able to access the data with few clicks.

2.3 SE 17 Development Kit - JDK 17

JDK 17 is the open-source reference implementation of version 17 of the Java SE Platform, as specified by by JSR 390 in the Java Community Process. The on-line Java Platform, Standard Edition (Java SE) Documentation contains API specifications, feature descriptions, developer guides, reference pages for JDK tools and utilities, and links to related information. The latest version of Java is Java 17 or JDK 17 released on September, 14th 2021. JDK 17 is the latest Long-Term Support (LTS) release of Java SE platform (about 8 years of support from Oracle).

2.4 MySQL

The core of the MySQL database is the MySQL Server. This server is available as a separate program and responsible for handling all the database instructions, statements, or commands. MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company.

2.5 HTML

The Hypertext Markup Language, or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript. Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

We have used HTML to display the data received from database in a simple format to make it easily understandable and accessible. We have also tried to keep the UI hundred percent user friendly to give an amazing experience to the user. The view generated with the help of HTML is easily understandable and information displayed can be navigated easily.

2.6 CSS

Cascading Style Sheets (CSS) 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. CSS has been used to give a better experience to the user. CSS enhances the display and UI/UX work along with HTML. CSS gives a better UI/UX to the display and it acts as a backbone of HTML and provides the best UI/UX.

2.7 Wamp Server

The "A" in WAMP stands for Apache. Apache is server software that is used to serve webpages. Whenever someone types in your WordPress website's URL, Apache is the software that "serves" your WordPress site. The "M" in WAMP stands for MySQL. MySQL is a database management system. It's job in the software stack is to store all of your website's content, user profiles, comments, etc. The "P" in WAMP stands for PHP. PHP is the programming language that WordPress is written in. It is also the piece that holds the entire software stack together. It runs as a process in Apache and communicates with the MySQL database to dynamically build your webpages.

III. RESULTS AND DISCUSSION

3.1 Modules Created

A. Login Module

The Login Module is a portal module that allows users to type a user name and password to log in. You can add this module on any module tab to allow users to log in to the system. If you allow users to create accounts and turn on Portal Direct Entry, a Create Account link appears in the Login Module.

B. Admin Module

The admin module is the main module as it is responsible for carrying out the major operations regarding other modules like update, edit and delete information about a module. It maintains the information about other modules. Admin module is an overall controller of this project. It updates itself as well as other modules.

C. Client Module

A client module is a network module that supports and implements the client side of a Network Programming Interface (NPI). A client module registers itself with the Network Module Registrar as a Client of the NPI that it supports. A client module can register itself as a client of more than one NPI.

D. Tourism Module

In Tourism module we will cover the information regarding the place which can be visited in the city by the visitors or the people residing in the city. Tourism Module is designed to take care of tourist related tasks in city. A tourist authenticated by the administration is the main user of this module.

E. Student Module

In Student module we will cover the information regarding school, colleges, university, library present in the city with some reviews about the place from users who have visited the location.

F. Hotels Module

In Hotels module we will cover information regarding hotels, dining places e.g.: - family restaurants, bars and places where people can stay also referred has lodge at many places and also provides reviews and rating regarding the location.

G. Health Services Module

In Health services module we will cover the information regarding Private Hospitals and Government Hospitals.

H. News Module

In this module we will cover the current news about the city by integrating live feed from YouTube.

I. Salon Module

In this module we will cover the information regarding the salons present in the city with some reviews about the place from users who have visited the location.

3.2 Literature Review

As the number of users on the World Wide Web increases every day, it is being used in different areas and also growing rapidly. One of the most powerful aspects of the Web is that anybody who has Internet access can browse on the internet. By use of world wide web, we can share the information across globe. As there are more job availability in metro polytan cites on daily basis, people from villages have started moving in cites to look for a job.[1]

As per report, people who are moving from villages to cites in hunt for job to carry on their lives are finding it hard to manage their expenses and encounter a proper place to stay. Such people are bullied in many ways. Taking advantage of needy people occur mostly in the large cities. Cities like Delhi, Mumbai and other metro Politian cities have already launched their city apps to overcome this issue for the people who have migrated.

As there are already various taxi services in the large city still if visitor is not very well-versed with the city regulations and its area, then it becomes very difficult for the migrant to settle down. Because of the urbanization phenomenon, significant number of risks, concerns and problems appear. So, a large amount of data could not be handled by server. Therefore, large amount of traffic on the server lead to service breakage in the system as a result user might face low performance from the server side. To avoid this, MySQL is the perfect solution. MySQL Database Service is a fully managed database service to deploy cloud-native applications, an integrated, high-performance query accelerator boosts.[2]

Dundappa Kengalagutti and Assistant Professor Chethana proposed that MySQL is an excellent tool if you want to store some kind of data, live interaction, real-time results. It is capable of very quickly delivering the data from a database server. A Database is the Board Framework or DBMS is a product that speaks with the database itself, applications, and Uls to acquire information and parse it. The DBMS additionally contains the key instruments to administer the database and MySQL hosts propelled an abundance of third gathering applications, instruments, and incorporated libraries that expand its usefulness and help make it simpler to work with. As far as speed is concerned MYSQL still holds a notoriety for being an exceedingly quick database arrangement.[3]

3.3 Testing

This testing involves:
- Valid entry of data giving by user.
- Connectivity between application and database.
- Successful insertion of data in database.

Sr no.	User Name	Execution Time
1	Shivam001	0.225s
2	Mohit020	0.85s
3	Ankit34	0.335s
4	Sapna16	0.152s
5	Anand77	0.623s

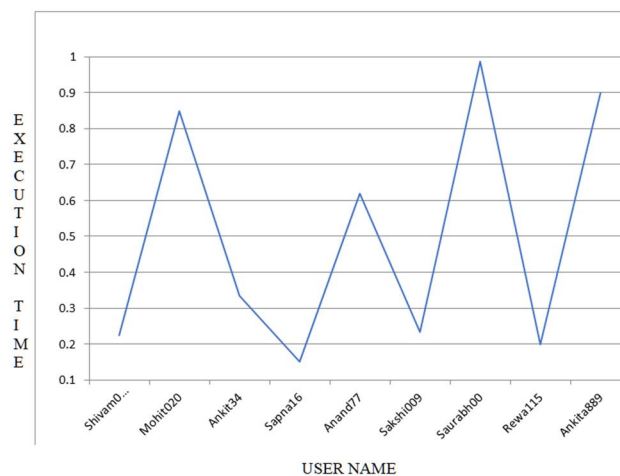| 6	Sakshi009	0.234s
7	Saurabh00	0.987s
8	Rewa115	0.2s
9	Ankita889	0.9s
10	Saurabh778	0.69s
11	Sofia889	0.988s
12	Mohit887	0.878s
13	Vickey8407	0.656s
14	Radler889	0.5s
15	Freeze556	0.13s

Figure: Graph for Test cases Vs Time

IV. CONCLUSION

In this paper, we have seen a smart city offers many advantages to its citizen. The project will help people to find places like tourists, colleges, schools, libraries, hospitals, popular foods, shopping malls, street shopping etc. It gives us the valuable information about the city and saves the time. It helps people to find the places which they need quickly with accurate information at a single platform. Our project laid a web-based platform for the city guide and can search place in the city without taking the help of any personal guide.

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