

Tripkart – An Online Hotel Booking System

Submitted in partial fulfillment of the requirements of the
degree

BACHELOR OF ENGINEERING IN INFORMATION TECHNOLOGY

By

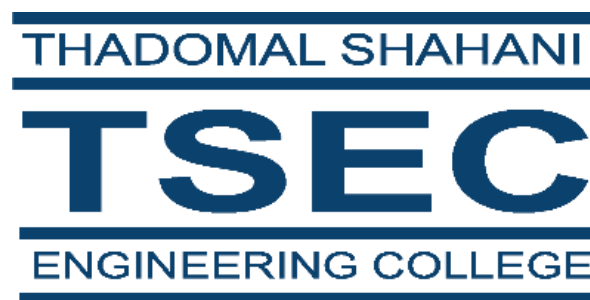
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CERTIFICATE

This is to certify that the Mini Project entitled “Tripkart – An Online Hotel Booking System” is a bonafide work of Group 8- Aaron Fernandes (17), Vaibhav Gawad (19) and Ronit Malhotra (50) submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of “Bachelor of Engineering” in “Information Technology”.

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Mini Project Approval

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Abstract

This is a project report on our Mini Project, built in Semester 5 of the academic year 2022-2023. Our project is Tripkart – An Online Hotel Booking System, it is a website with various functionalities that we have built. We call it a hybrid version of the present industries MakeMyTrip and Airbnb. A good software is one that follows the theory and implements it practically, we have done the same. Documentation is one very essential part of every project, this report is a sub part of the same. It will give you a glimpse into what this project is about, taking you all the way through how we surveyed/researched about this project, went through resources available in the form of books, research papers, online documentation, YouTube videos and a plethora of websites, implemented it. Furthermore, it lists the technologies we used, the architecture design we made, how we followed every part of the Software Development Lifecycle(SDLC) and came up with ‘Tripkart’. We have also added a page of references, in our due reverence to resources we gained knowledge from.

Acknowledgement

We express our deep gratitude and regards to Prof. Anjali Malviya, internal project guide and professor for her encouragement and valuable guidance in bringing shape to this dissertation. We are thankful to all the professors and faculty members in the department for their teachings and academic support and special thanks to technical staff and non-teaching staff in the department for their support.

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1. Introduction

1.1 Introduction

The number of people accessing and using the internet around the globe has dramatically increased in recent years. This unabated penetration of the internet is forcing businesses to take their services online in order to reach out to a wider market. This calls for an implementation of a technological infrastructure that can allow interoperability between different systems or applications in an efficient and seamless manner. Web services provide the solution to this business need. They are developed in a way that allows applications to communicate or talk to each other irrespective of their location, IT infrastructure on which they run or programs used to develop them. A web service has an abstraction layer in its architecture that separates the technology from the applications or services to make it easy for applications to interact over the web without interference of the technological infrastructure. This is actually made possible by the use of standard technologies such as XML, SOAP, WSDL, UDDI, ebXML, HTTP and others that are at the core of the architecture of web services.

Tripkart is a website which provides the facilities for booking hotels, inns, houses, holiday apartments and other accommodations for customers. We operate our business pan India. Any customers who wish to book a hotel, inns or an apartment need to visit our website, for checking the availability. The website will help us to manage the customers' booking easily and also to keep the customers' data more safe. It will also help hotel staff to keep track of their customers' online booking requests. In this documentation it shows how the web based system has been implemented and looks like (User Interface).

The problem statement is to build an e-commerce website that provides a one stop for all 'Hotel' - specific requirements. It brings an opportunity to explore the world and choose the best hotels to reside in , all its dimensions from mystical to convivial. This website aims to bridge the gap between hotel related bookings and the customers. We aim to provide fast , accurate and concise responses to the needs of a customer. A robust front-end to be able to retain customers and have them glued to the website, was our prime focus. We display travel related advertisements , as a revenue integration system to the project (these are static for the time being). We have built a backend that enables the best possible service to the customer in terms of hotels , travel destination searches , reviews , best possible costs , comfortable selections and much more. Our Unique Selling Point (USP) will be India, yes, Incredible India, pricing , uniqueness of travel

destinations , courteous treatment, tie ups with hotels, true display of hotel facilities, a very good UX. Our project maps to Sustainable Development Goal (SDG) 3 which speaks of ‘health and well being’, since a holiday is a need-of-the-hour in today's busy world.

To find the greatest prices on hotel reservations, all one needs is access to the internet and a little bit of travel knowledge. With our project its time to give dependable physical travel agents a break and learn about the many benefits (and huge savings) of making one’s own internet reservations. Online travel firms are able to provide one with pricing that s/he most likely won't find anywhere else since they make bookings in large quantities. They have agreements with hotel companies that enable them to provide consumers with unique package offers and add-ons. That’s exactly what we too will be focusing on, alongside micro-management to keep everything as perfect as possible.

Additionally, Tripkart provides one with a selection of hotels depending on their preferences for price, location, and facilities that are clearly set out for them.

This project is a Web-based application that provides a user-friendly and simple interface to let users easily book hotel rooms and perform booking activities via Internet. This is an India-exquisite project, travel destinations pan India only are promoted.

1.2 Motivation

The Internet and its technologies have made a significant achievement and we almost could get any information we need via surfing on the Web browser at anytime or anywhere where a computer and Internet are available. The Online Hotel Booking System offers a simulated environment to let users perform what they could do in the real world via its simple and user-friendly interface. Online Hotel Booking System meets most functions and efficiency of a real Web-based application of the real-life case and offers the extension of future development for more completed capabilities.

As stated earlier, our project maps to SDG 3 which states: Ensure healthy lives and promote well-being for all at all ages. Ensuring healthy lives and promoting well-being at all ages is essential to sustainable development.

A holiday is a need of the hour, in today’s busy world, it becomes all the more enjoyable, when you get the best pricing. All the bookings that were done manually can now be done via a website. It provides an online portal to do bookings to hotels, also displaying the hotel information so people from all over the world can view required information at the click of a

button. Doing your own bookings, saving brokerage paid to travel agents can be very efficient and financially wise. When we minimize manual work, let the computer do our tasks, we can focus on solving bigger problems, mechanical work can be left for a computer to do. Our website would keep the customer's data safe and only we can access it. The hotel vendor only gets to see what we send to him. A simple and easy to operate UI that does not require too much technical knowledge, was our aim, so that the most uneducated person from the remotest part of the country can also book a hotel for himself.

1.3 Problem Statement & Objectives

1.3.1 Problem Statement

To build an e-commerce website that provides a one stop for all 'Hotel' - specific requirements.

An opportunity to explore the world and choose the best hotels to reside in, all its dimensions from mystical to convivial. This website aims to bridge the gap between hotel related bookings and the customers.

To provide fast , accurate and concise responses to the needs of a customer. A robust front-end to be able to retain customers and have them glued to the website. A display of travel related ads , as a revenue integration system to the project (future scope).

A backend that enables the best possible service to the customer in terms of hotels , travel destination searches , reviews , best possible costs , comfortable selections and much more. Our USP will be pricing , uniqueness of travel destination , courteous treatment , tie ups with hotels , true display of hotel facilities , a very good UX. The project maps to SDG goal 3 - health and well being , since a holiday is a need-of-the-hour in today's busy world.

1.3.2 Objectives

To understand the concepts of the following topics was the main objective:-

- Entrepreneurship and E Business: How businesses operate, what is the planning that goes into initiating a business, how business models are made, how do they generate revenue. For instance, our revenue generation system for the project is commission based(per booking) as well as advertisements on the website, which are a constant source of revenue. It is a B2C business model(Business to Customer), It offers product-as-a-service.

- Internet Programming: MERN stack

Websites follow a 3 tier model: a front end, middleware and a back end

Our front end is made from HTML, CSS, JS, ReactJS, Material UI

Back end is made from NodeJS, ExpressJS, MongoDB

Cloudinary service: to store images on the cloud.

Organization of the Report

Until now, we have discussed the problem statement and objective of our project and this report. Going forward we introduce the reader to our proposed system, architecture used in the project, design of the frames, details of hardware and software and pictures of our project. We then conclude with our note on future work and references.

2. Literature Survey

2.1 Survey of Existing System

For the survey, we checked out different tour booking website to get an inspiration.

We checked out website of the following companies :

(i) Kesari Tours

(ii) Hotels.com

(iii) Trivago

(iv) Veena World

These websites offer many tours and hotel bookings in different parts of the world. So, we surveyed these websites in order to understand the requirements for our website and making it a priority to add efficiency to parts we observed that needed fixation.

We also went through research papers to understand what goes into the making of a website of such kind, how the business model would work, what are the various functionalities we could add and how could this project be an out-of-the-box creation.

2.2 Limitation of Existing System

1. Ease and convenience to use: Most of these websites are not easy enough for some to use, our project deals with a basic UI, user-friendly with to the point information, we focus less on our marketing which makes our project in favor of the client – this in itself does our marketing. Some of these websites are not user friendly and are cluttered with a lot of data that only leads to confusion among the users. So, our main goal is to make the website as readable as possible.
2. Admin and Client Side are different. In Algorithms, we have a Divide and Conquer approach, one can say we have used a bit of that logic here to divide tasks into 2 subsections for simplicity and easy in managing.
3. There were some websites where the data was not up to date which affects the authenticity of the information provided by the website. So, our website has only one admin in order to make sure that the data is updated regularly, only from one point.

3. Proposed System

3.1 Introduction

Proposed System means the assembly of an operational group of computer programs that will perform, without modification, a significant portion of the functional requirements contained in this RFP (Request for Proposal)/ Requirement Specification.

Tripkart is a website that offers users the ability to reserve hotels, inns, homes, vacation flats, and other lodgings. We conduct business all around India. Any consumers looking to reserve a hotel room, inn room, or condominium should check the availability on our website. The website will enable us to quickly handle client reservations and to protect consumer data more effectively. Additionally, it will make it easier for hotel personnel to keep track of their clients' online booking requests and respond to their comments. This guide provides an overview of the web-based system's implementation and appearance (User Interface).

3.2 Architecture/Framework

Architecture stands for the study of design and making.

Design is the second phase of the SDLC, after feasibility study and requirement analysis.

The website has an admin page and a client page. Admin page is for us and client page, for the customers.

Flow chart of the website, ER Diagram:

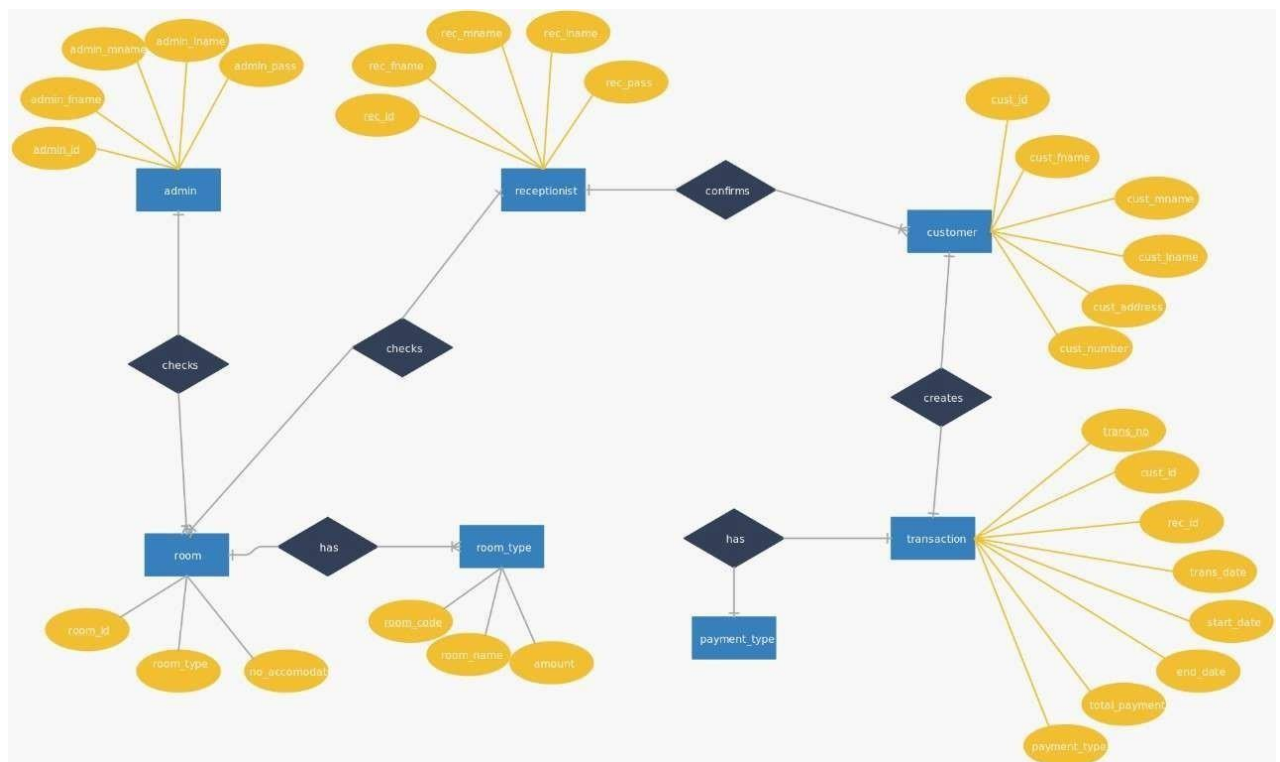


Fig 3.2.1 Flow Chart of Website/ Entity Relationship(ER) diagram

Frontend

This part is mainly the GUI of a project.

- The software technology we used for the frontend is React JS. We imported various components of user interface and use react libraries to create an interactive user interface.
- We link the components to each other by using React Router DOM.
- We also use SASS for the designing of the web pages along with CSS

Database

This comes as a part of the backend, the 3rd tier of a website. A database stores the data, when it has to be stored in secondary memory/permanent storage.

- For testing the API, we use Insomnia to send the API request and also update the request and delete them.
- We use Mongo DB for the website database and connect it to the frontend and insomnia for the API requests.

Backend

This includes work done with the backend of our website, this is the part that contains the main logic. A middleware component serves as a bridge between frontend and backend.

- We use cookie parser module for authentication of the user and the admin.
- We also use the bcrypt module for the encryption of the password.
- The webpages are linked using the React Router.
- When the user logs into the website, they see the number of the hotels located at different locations on the home page.
- From there, the user can choose whichever location they want by using the filter and select their favorable options.

3.3 Experimental Result

- The user has to login into the website as soon as they open the website.

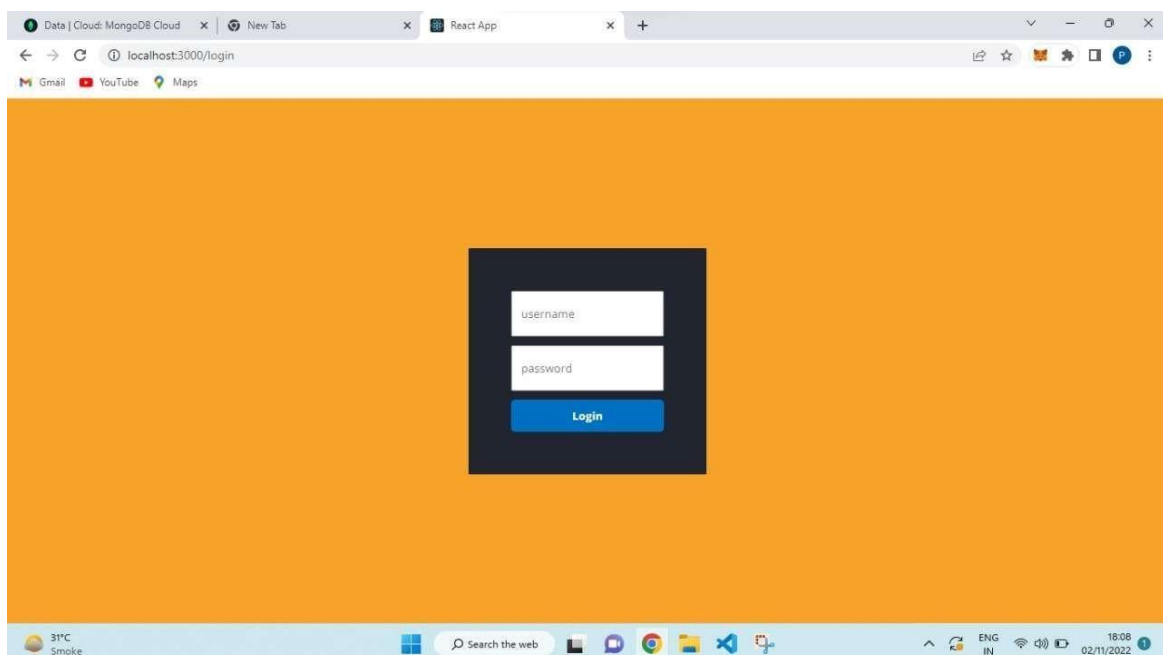


Fig 3.3.1 Client Side User Interface - Login page

The home page has all the hotels list shown and the number of properties they have in that particular location. The user can search the hotel as per the location and can also choose the dates they want to book the hotels for.

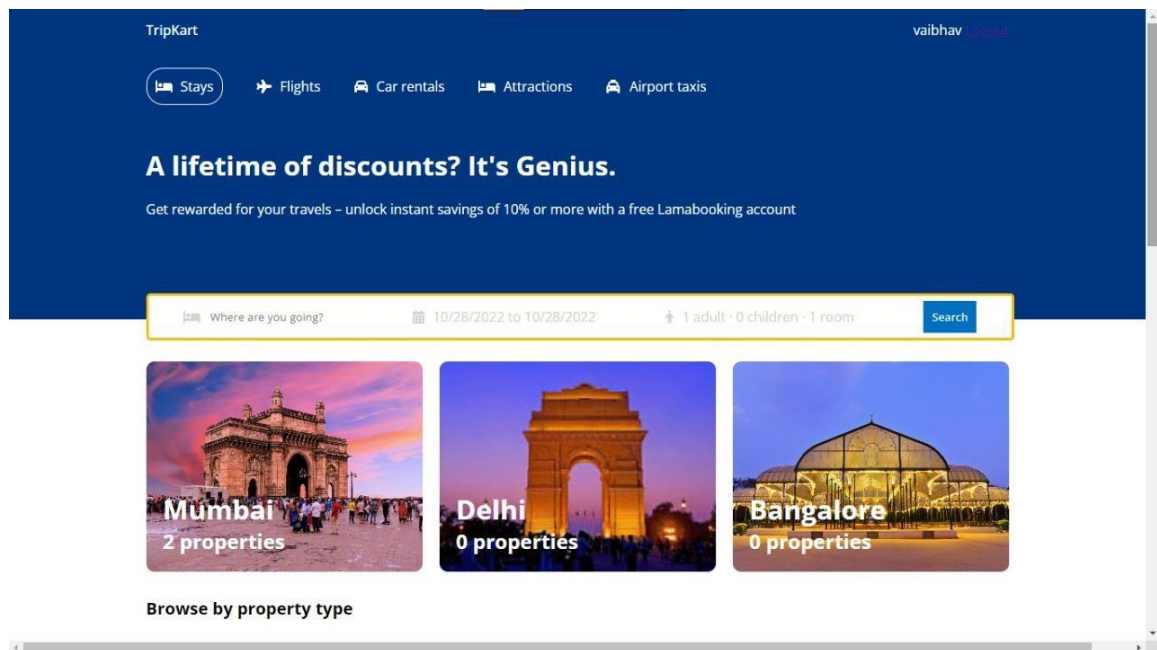


Fig 3.3.2 Client Side Home Page

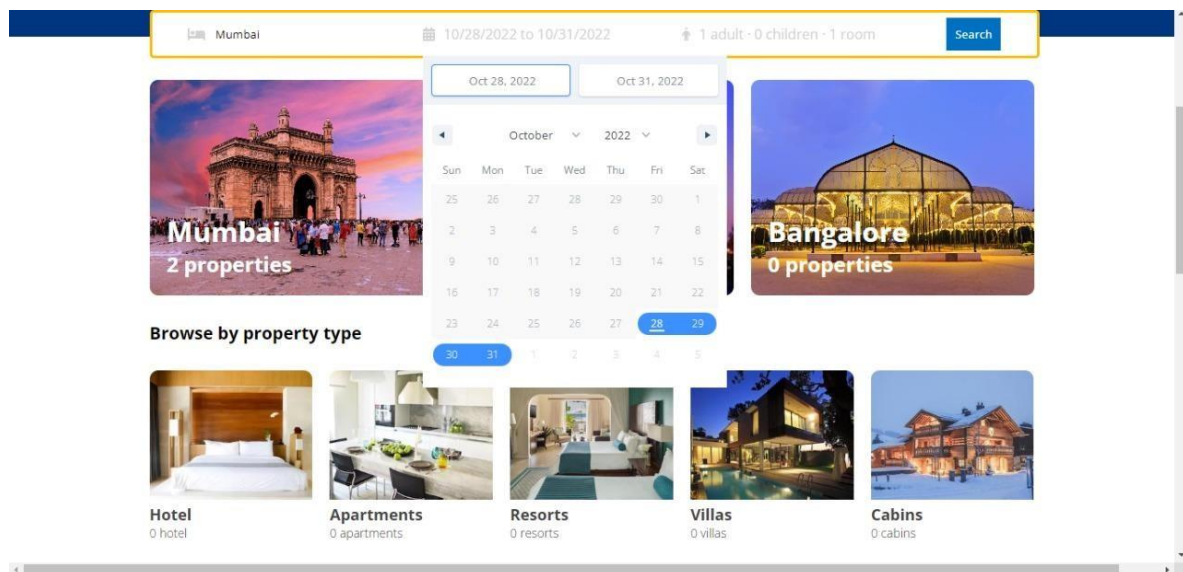


Fig 3.3.3 Client Side Booking using available dates

When the user clicks on a location of their choice, they get various available properties in that location giving the user a choice of choosing a hotel according to their budget.

The screenshot shows the TripKart website interface. At the top, there's a navigation bar with 'TripKart' and a user profile 'vaibhav'. Below this is a menu with 'Stays', 'Flights', 'Car rentals', 'Attractions', and 'Airport taxis'. The 'Stays' tab is active. On the left, there's a search sidebar with fields for 'Destination' (Mumbai), 'Check-in Date' (10/28/2022 to 10/31/2022), and 'Options' (Min price per night, Max price per night, Adult: 1, Children: 0, Room: 1). A 'Search' button is at the bottom of the sidebar. To the right, two hotel listings for 'Vaibhavs hotel' are displayed. Each listing shows a price of '\$100', includes taxes and fees, and offers a 'Free airport taxi' and 'Free cancellation'. A 'See availability' button is present for each listing.

Fig 3.3.4 Display of available hotels based on filters

The screenshot shows the detailed view of 'Vaibhavs hotel'. It includes the hotel name, a location pin icon, and the address 'safjasolkfj'. Below this, it states 'Excellent location - 299m from center' and 'Book a stay over \$100 at this property and get a free airport taxi'. There is a placeholder image for the hotel. A 'Reserve or Book Now!' button is located in the top right corner. Below the hotel name, it says 'The best VaibhaV hotel' and 'This is very good hotel'. On the right side, there's a light blue box with the text 'Perfect for a 3-night stay!', 'Located in the real heart of Krakow, this property has an excellent location score of 9.8!', and a price of '\$300 (3 nights)'. A 'Reserve or Book Now!' button is also present in this box.

Fig 3.3.5 Selecting a particular hotel

Finally, the user can book the hotels on the chosen date and if there is a room available in the hotel the booking is confirmed.

TripKart Admin

Search...

English
🌙
🔍
🔔
📧
☰
👤

MAIN

Dashboard

LISTS

Users
Hotels
Rooms
Delivery

USEFUL

Stats
Notifications

SERVICE

System Health
Logs
Settings

USER

Profile
Logout

🔖

🔖

Add New User

Image: 📷

Username

tripusername

Email

trikart@gmail.com

Password

City

Mumbai

Phone

+91 12345689

Country

India

Send

Fig 3.3.6 Admin side UI – Adding new user

TripKart Admin

Search...

English
🌙
🔍
🔔
📧
☰
👤

MAIN

Dashboard

LISTS

Users
Hotels
Rooms
Delivery

USEFUL

Stats
Notifications

SERVICE

System Health
Logs
Settings

USER

Profile
Logout

🔖

🔖

Add New Room

Title

2 bed room

Description

King size bed, 1 bathroom

Price

100

Max People

2

Rooms

give comma between room numbers.

Choose a hotel

Vaibhavs hotel ▾

Send

TripKart Admin

Search...

English
🌙
🔍
🔔
📧
☰
👤

MAIN

Dashboard

LISTS

Users
Hotels
Rooms
Delivery

USEFUL

Stats
Notifications

SERVICE

System Health
Logs
Settings

USER

Profile
Logout

🔖

🔖

Add New Hotel

Image: 📷

Name

My Hotel

Type

hotel

Address

Address

Title

The best Hotel

Price

100

Rooms

City

Mumbai

Distance from City Center

500

Description

description

Featured

No ▾

Fig 3.3.7 Admin side UI – Adding new hotel

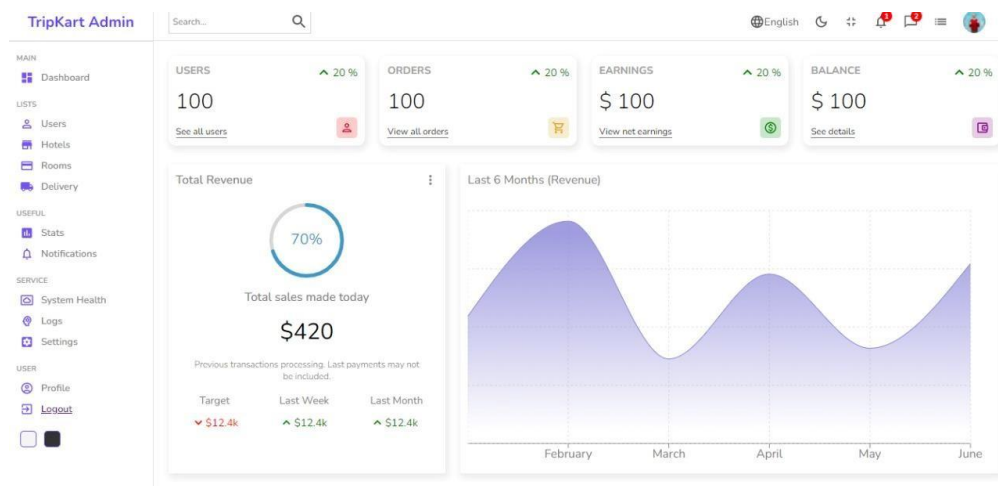


Fig 3.3.8 Admin side UI – Immediately after logging in

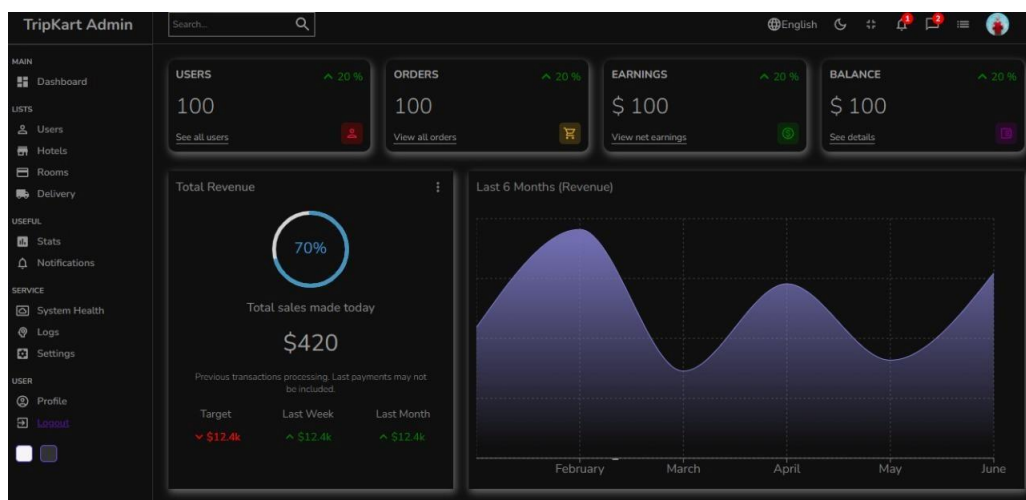


Fig 3.3.9 Admin side UI in Dark mode

3.4 Software & Hardware Details

- Mongo DB
- Express JS
- React
- Node JS
- HTML
- CSS
- VSCode for coding the projec
- Intel dual core
- 512 MB Ram
- Mouse
- Hard disk 80 GB
- Key board Standard
- Visual Studio Code

3.5 Conclusion & Future Work

3.5.1 Conclusion

Thus, we created a website that allows the user to book a hotel according to their preferable date. We also notify the user which hotels are booked so that they can plan their trip accordingly. The filters also help the user to choose their trip location. This project has helped us in getting a clearer understanding of real world application development.

It has provided us a deeper insight into connecting databases with servers.

The entire learning outcome of this project has proved to be immensely beneficial for our future application development.

3.5.2 Future Work

We can implement a live tracker for the user to find out what utilities are near their location. We can also add a chat section for avid travelers so that they can share their interests intraveling and connect. We can integrate a payment gateway with the website. We can also add tours with different time periods so that people can book a tour of any time duration they want.

We can make the graphical user interface friendlier and more functional in the next development. The Online Hotel Booking System aims to provide a user-friendly interface and more functions for real world hotels. But there is still some room for improvements. For example, We can change the settings and functions of some options in the Web pages to make them more professional and artistic. We can also use more pop-up windows so that users can choose the value from them directly. This applies to "arrival date" and "departure date" options. In this way the users can avoid many possible mistakes caused by inappropriate input. In future improvements, the Online Hotel Booking System can offer more services such as car rental, flight ticket purchase, and the vacation package advising. These services have been offered already on some real world online booking systems. More hotels will add these services on their online systems. In this way, people can make all their requests at once no matter they are business trip arrangement, shopping, travel, or vacation.

3.6 Mini Project Contribution

Backend (**Node.js**) and Admin Front End **React**: Vaibhav Gawad

Front end (User side) **React**: Ronit Malhotra

Servers, images, fetching and storing and **MongoDB** configurations: Aaron Fernandes.

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