A PROJECT REPORT ON
"TRAVEL ADVISOR WEB APPLICATION"

Submitted

in partial fulfillment of the requirements

for the Degree of

MASTER OF COMPUTER APPLICATIONS

by

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Under the Supervision of

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SCHOOL OF COMPUTING

GRAPHIC ERA HILL UNIVERSITY

DEHRADUN

(2022-2023)

CERTIFICATE

I hereby declare that the work which is being presented in the project entitled, “Travel Advisor Web Application” has been carried out by **MANISH SINGH** for the partial fulfillment of the requirements for the award of the MCA, submitted in the School of Computing, **GRAPHIC ERA HILL UNIVERSITY** is an authentic record of our own **Ms. Anupriya, Assistant Professo**r. I further declare that the matter embodied in this project has not been submitted by us for the award of any other degree.

PROJECT INCHARGE
Ms. Anupriya
(Assistant Professor)

ACKNOWLEDGMENT

I take the opportunity to express my gratitude to all of them who in some or other way helped me to accomplish this challenging project in “Travel Advisor Web Application”.

I owe a great many thanks to Graphic Era Hill University and my project guide Ms. Anupriya who has been a constant support and guidance throughout the making of my project and for monitoring my project with attention and care. She has taken the pains to evaluate the project and make necessary corrections in the report as needed. I am really thankful for her kind and supportive nature. Her inspiring nature has always made my work easy.

ABSTRACT

The Travel Advisor Web Application helps newly visited people in a new city find the best Restaurant, hotels, and attractions around their location.

The Travel Advisor Web Application uses Google Maps and Geolocation maps API to search the exact location of users.

Fetching restaurants, hotels, and attractions data and filtering it based on the location, people reviews, and ratings use the specialized Travel Advisor API Documentation rapid APIs. This API helps to query real-time Flights prices, Hotels booking, Restaurants, Attracting locations, etc… to create a traveling site like tripadvisor.com.

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CHAPTER 1

1.1 INTRODUCTION

The Travel Advisor Web Application helps newly visited people in a new city find the best Restaurant, hotels, and attractions around their location.

The Travel Advisor Web Application uses Google Maps and Geolocation maps API to search the exact location of users.

Fetching restaurants, hotels, and attractions data and filtering it based on the location, people reviews, and ratings use the specialized Travel Advisor API Documentation rapid APIs. This API helps to query real-time Flights prices, Hotels booking, Restaurants, Attracting locations, etc… to create a traveling site like tripadvisor.com.

Travel Advisor Web Application provides the details of Restaurants like rating of the restaurants, price, ranking, certificates of restaurants, top food of the restaurant, location details, and phone number and also provides the Restaurant's official website link.

1.2 Features of Travel Advisor web Application

The Travel Advisor Web Application features help to find the best Restaurants, hotels, and attractions.

It provides the details of the Restaurants, hotels, and attractions according to the user's choice.

Users can choose the Restaurants, hotels, and attractions through rating vise.

1.3 Components of the Travel Advisor web Application

There are four main components in the Travel Advisor web Application.

1. **Header**
   Inside the header section, there is the Name of the Web Application.
2. **List**

   Inside the List section, there are the Details of the restaurants, hotels, and attractions. It also contains the type of rating.

   The list section shows the photos and details of the restaurants, hotels, and attractions. it changes according to the user rating.
3. **Maps**

   Map components show the user real-time location in google Maps. It uses the Google map Geolocation API.
4. **PlaceDetails**

PlaceDetails fetch all the details of the restaurants, hotels, and attractions and show in the list section.

1.4 Introduction to JavaScript

JavaScript is a cross-platform, object-oriented scripting language used to make webpages interactive (e.g., having complex animations, clickable buttons, popup menus, etc.). There are also more advanced server side versions of JavaScript such as Node.js, which allow you to add more functionality to a website than downloading files (such as realtime collaboration between multiple computers). Inside a host environment (for example, a web browser), JavaScript can be connected to the objects of its environment to provide programmatic control over them.

JavaScript contains a standard library of objects, such as Array, Date, and Math, and a core set of language elements such as operators, control structures, and statements. Core JavaScript can be extended for a variety of purposes by supplementing it with additional objects; for example:

- Client-side JavaScript extends the core language by supplying objects to control a browser and its Document Object Model (DOM). For example, client-side extensions allow an application to place elements on an HTML form and respond to user events such as mouse clicks, form input, and page navigation.
- Server-side JavaScript extends the core language by supplying objects relevant to running JavaScript on a server. For example, server-side extensions allow an application to communicate with a database, provide continuity of information from one invocation to another of the application, or perform file manipulations on a server.

This means that in the browser, JavaScript can change the way the webpage (DOM) looks. And, likewise, Node.js JavaScript on the server can respond to custom requests sent by code executed in the browser.

1.5 Introduction to ReactJS

React.js is a front-end JavaScript framework developed by Facebook. To build composable user interfaces predictably and efficiently using declarative code, we use React. It's an open-source and component-based framework responsible for creating the application's view layer.

- ReactJs follows the Model View Controller (MVC) architecture, and the view layer is accountable for handling mobile and web apps.
- React is famous for building single-page applications and mobile apps.

Why do people choose to program with React?

There are various reasons why you should choose ReactJS as a primary tool for website UI development. Here, we highlight the most notable ones and explain why these specifics are so important:

- **Fast** - Feel quick and responsive through the Apps made in React can handle complex updates.
- **Modular** - Allow you to write many smaller, reusable files instead of writing large, dense files of code. The modularity of React is an attractive solution for JavaScript's visibility issues.
- **Scalable** - React performs best in the case of large programs that display a lot of data changes.
- **Flexible** - React approaches differently by breaking them into components while building user interfaces. This is incredibly important in large applications.
- **Popular** - ReactJS gives better performance than other JavaScript languages due to t's implementation of a virtual DOM.
- **Easy to learn** - Since it requires minimal understanding of HTML and JavaScript, the learning curve is low.
- **Server-side rendering and SEO friendly** - ReactJS websites are famous for their server-side rendering feature. It makes apps faster and much better for search engine ranking in comparison to products with client-side rendering. React even produces more opportunities for website SEO and can occupy higher positions on the search result's page.
- **Reusable UI components** - React improves development and debugging processes.

- **Community** - The number of tools and extensions available for ReactJS developers is tremendous. Along with impressive out-of-box functionalities, more opportunities emerge once you discover how giant the React galaxy is. React has a vibrant community and is supported by Facebook. Hence, it's a reliable tool for website development.

ReactJS Features:

1. JSX - JavaScript Syntax Extension

JSX is a preferable choice for many web developers. It isn't necessary to use JSX in React development, but there is a massive difference between writing react.js documents in JSX and JavaScript. JSX is a syntax extension to JavaScript. By using that, we can write HTML structures in the same file that contains JavaScript code.

2. Unidirectional Data Flow and Flux

React.js is designed so that it will only support data that is flowing downstream, in one direction. If the data has to flow in another direction, you will need additional features.

3. Virtual Document Object Model (VDOM)

React contains a lightweight representation of real DOM in the memory called Virtual DOM. Manipulating real DOM is much slower compared to VDOM as nothing gets drawn on the screen. When any object's state changes, VDOM modifies only that object in real DOM instead of updating whole objects.

That makes things move fast, particularly compared with other front-end technologies that have to update each object even if only a single object changes in the web application.

4. Extensions

React supports various extensions for application architecture. It supports server-side rendering, Flux, and Redux extensively in web app development. React Native is a popular framework developed from React for creating cross-compatible mobile apps.

5. Debugging

Testing React apps is easy due to large community support. Even Facebook provides a small browser extension that makes React debugging easier and faster.

ReactJS Components

Components are the heart and soul of React. Components (like JavaScript functions) let you split the UI into independent, reusable pieces and think about each piece in isolation.

Components are building blocks of any React application. Every component has its structures, APIs, and methods.

In React, there are two types of components, namely stateless functional and stateful class.

- **Functional Components -** These components have no state of their own and contain only a render method. They are simply Javascript functions that may or may not receive data as parameters.

- **Class Components -** These components are more complex than functional components. They can manage their state and to return JSX on the screen have a separate render method. You can pass data from one class to other class components.

1.6 Introduction to Google Map API

The Maps JavaScript API lets you customize maps with your own content and imagery for display on web pages and mobile devices. The Maps JavaScript API features four basic map types (roadmap, satellite, hybrid, and terrain) which you can modify using layers and styles, controls and events, and various services and libraries.

Google Maps API is a set of application programming interfaces that lets us talk to its services. It will allow us to build simple apps to very sophisticated location-based apps for Web, iOS, and Android.

API Key

Getting an API Key from Google Cloud Platform is the first step before using any of the Google Maps API Services.

- Create An API Key
- Enable Billing
- Protect Your API Key & Libraries
- Enable Desired Libraries

Maps API

Using Maps API, you can:
Show Google Maps on the browser, iOS, or Android devices.
Place or pin a Marker on the map when you want to indicate a specific geographic coordinate (latitude and longitude).

Geocoding API

- Geocoding is a process of converting a street address to geographic coordinates (latitude & longitude).
- Reverse Geocoding is the opposite, it coverts geographic coordinates to an actual human-readable address.
- When you choose your own location from an app, such as a food delivery app, the app will have to convert the user coordinates that are coming from the device GPS to an actual human-readable address.

Places API

Nearby Search Request allows us to get different places based on:

- location: could be either the user's current location or any other location that you want to get nearby places from.
- Type: could be restaurants, bars, etc
- radius: determines how far you want to get the places from.

The response object will have most of the information about places such as name, address and coordinates.

1.7 Introduction to Travel Advisor API

This API helps to query realtime Flights prices, Hotels booking, Restaurants, Attracting locations, etc… to create a travelling site like tripadvisor.com

It shows multiple types of ratings of places, Hotels, and Restaurants of any location you might search on. Ratings consist of Awards & Honors received Star ratings, Reviews, etc. There are also links available one goes to their Google Maps page and another one to their personal business websites.

CHAPTER 2.

EXISTING SYSTEM AND PROBLEM ANALYSIS

2.1 Existing System

In the present time, there is no system that helps to find customized choice restaurants, hotels, and attractions around the user's location according to the user's choice.

This Travel Advisor Web Application helps users to find the best restaurants, hotels, and attractions according to their choice.

2.2 Problem analysis

Problem analysis is the phase under which the current problem is being analyzed and then the solution is provided for different use cases and functionalities being added to the system. Problem Analysis includes the process of collecting problems and discussing them to get a solution and alternative if not possible.

2.3 Software engineering model used

Kanban

Kanban is a very popular framework for development in the agile software development methodology. It provides a transparent way of visualizing the tasks and work capacity of a team. It mainly uses physical and digital boards to allow the team members to visualize the current state of the project they are working on.

Kanban originated in Toyota in the 1940s. Kanban’s meaning in Japanese is “billboards.” The Kanban board has columns and story cards. The columns are nothing, but workflow states and cards are nothing but a demonstration of the actual task a team member is performing.

When to use Kanban?

- Here are the reasons for using Kanban development method:
- Kanban can be used in any domain, and it can be used very effectively in software development. Kanban project management helps in improving the efficiency of the team.
- It is a pull-based system. Tasks are being pulled as soon as an individual is free.
- Kanban should be used when you want to release your work at any time. It requires git branching, but it is doable.
- Kanban should be used when you want to change the priorities on the fly. For that, all you need to do is to put this story on the top of the to-do queue.
- It should be used when you want to visualize your work, and you want to see the progress of your tasks visually.

CHAPTER 3.

FEASIBILITY STUDY

3.1 Feasibility Analysis

Feasibility analysis gives results related to feasibility of the product being generated. It is an important phase to study product design and implementation to real life scenarios. Feasibility study is carried out to select the best product that meets performance and general requirements of a user and application or software. The main aim of the feasibility study is to determine whether it would be financially, and technically feasible to design and develop the final product.

3.2 Hardware Requirements

	Windows requirements	**Mac requirements**	**Linux requirements**
Operating system	Windows 10	macOS High Sierra 10.13 or later	64-bit Ubuntu 14.04+, Debian 8+, openSUSE 13.3+, or Fedora Linux 24+
Processor	Intel Pentium 4 or later	Intel	Intel Pentium 4 or later
Memory	2 GB minimum, 4 GB recommended		
Screen resolution	1280x1024 or larger		
Application window size	1024x680 or larger		
Internet connection	Required		

3.3 Software requirement analysis

Web Browsers

Usually, the websites designed with reference to a browser can vary its functionality when run on a different browser. It is very much important to test your web pages to make sure they function and look, as expected.

You can test them on most popular browsers such as Chrome, Firefox, Opera, Safari and edge.

Node.Js

Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux.
Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent.

Visual Studio Code Editor

Visual Studio Code is a streamlined code editor with support for development operations like debugging, task running, and version control. It aims to provide just the tools a developer needs for a quick code-build-debug cycle and leaves more complex workflows to fuller featured IDEs, such as Visual Studio IDE.

CHAPTER 4

4.1 IMPLEMENTATION

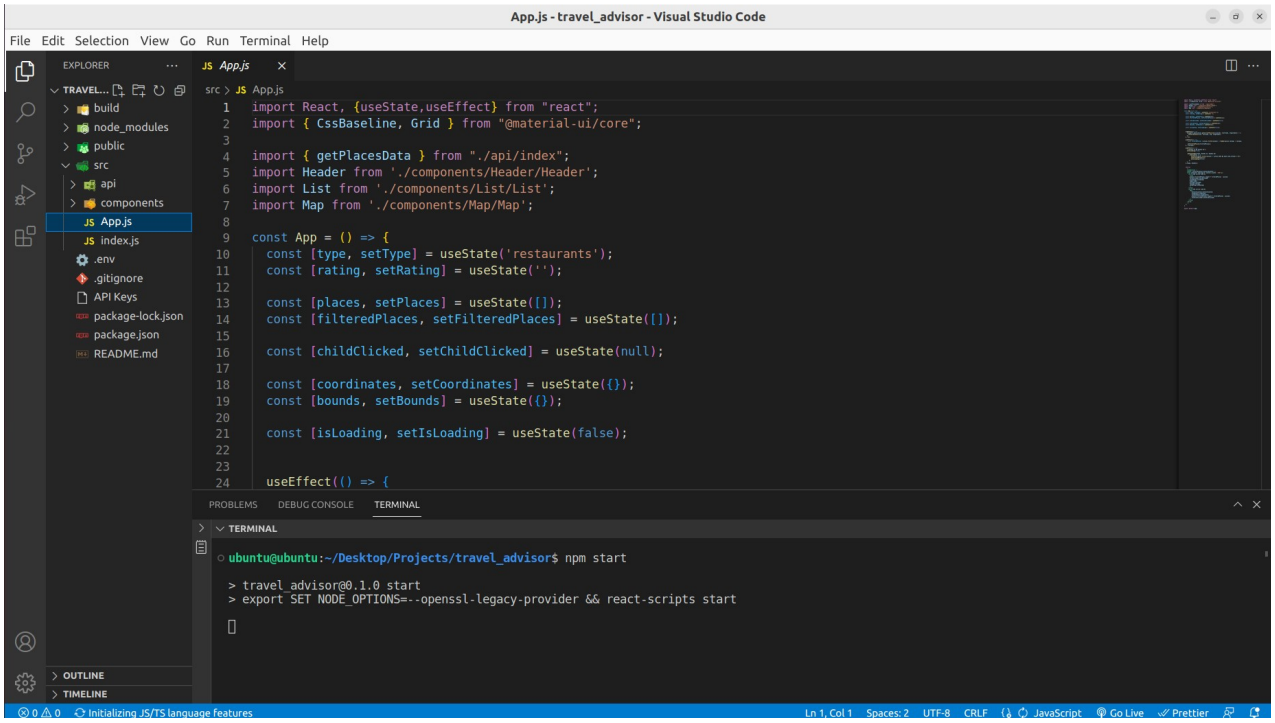
- **Front- End Implementation**

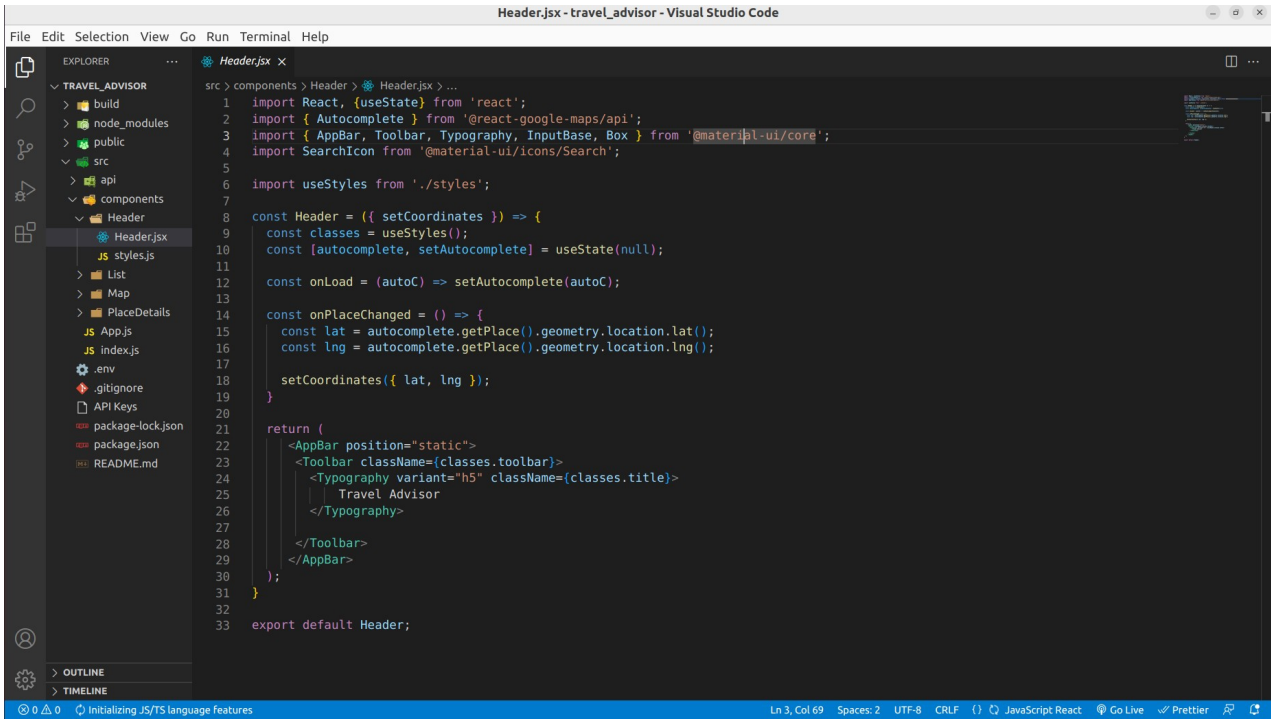
For Front- End Implementation ReactJs is used. It is an open-source JavaScript library for building user interfaces used for building front-end development with ReactJS. It is a component-based library that lets you build high-quality user interfaces for web apps. This also allows you to place your HTML code inside JavaScript and it works with virtual DOM.

- **Back-end Implementation**

For the Back-end Implementation Google Map API used. The Maps JavaScript API lets you customize maps with your own content and imagery for display on web pages and mobile devices. The Maps JavaScript API features four basic map types (roadmap, satellite, hybrid, and terrain) which you can modify using layers and styles, controls and events, and various services and libraries.

SNAPSHOTS OF Travel Advisor Web Application Source Code





List.jsx - travel_advisor - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

TRAVEL_ADVISOR
- build
- node_modules
- public
- src
  - api
  - components
    - Header
      - Header.jsx
      - styles.js
    - List
      - List.jsx
      - styles.js
    - Map
    - PlaceDetails
  - App.js
  - index.js
- .env
- .gitignore
- API Keys
- package-lock.json
- package.json
- README.md

OUTLINE

TIMELINE

List.jsx

src > components > List > List.jsx > ...

```jsx
import React, {useState, useEffect, createRef } from 'react';
import { CircularProgress, Grid, Typography, InputLabel, MenuItem, FormControl, Select } from '@material-ui/core';

import PlaceDetails from '../PlaceDetails/PlaceDetails';

import useStyles from './styles';


const List = ({ places, childClicked, isLoading, type, setType, rating, setRating }) => {
  const classes = useStyles();
  const [elRefs, setElRefs] = useState([]);

  useEffect(() =>{
    const refs = Array(places?.length).fill().map((_, i) => elRefs[i] || createRef());

    setElRefs(refs);
  },[places]);

  return (
    <div className={classes.container}>
          <Typography variant="h4">Restaurants, Hotels & Attractions around you</Typography>
          {isLoading ? (
          <div className={classes.loading}>
            <CircularProgress size="5rem" />
          </div>
          ) : (
            <>
          <FormControl className={classes.formControl}>
            <InputLabel>Type</InputLabel>
            <Select value={type} onChange={(e) => setType(e.target.value)}>
              <MenuItem value="restaurants">Restaurants</MenuItem>
              <MenuItem value="hotels">Hotels</MenuItem>
              <MenuItem value="attractions">Attractions</MenuItem>
            </Select>
          </FormControl>
          <FormControl className={classes.formControl}>
            <InputLabel>Rating</InputLabel>
```

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Map.jsx - travel_advisor - Visual Studio Code

File Edit Selection View Go Run Terminal Help

EXPLORER

TRAVEL...
- build
- node_modules
- public
- src
  - api
  - components
    - Header
      - Header.jsx
      - styles.js
    - List
      - List.jsx
      - styles.js
    - Map
      - Map.jsx
      - mapStyles.js
      - styles.js
    - PlaceDetails
  - App.js
  - index.js
- .env
- .gitignore
- API Keys
- package-lock.json
- package.json
- README.md

OUTLINE

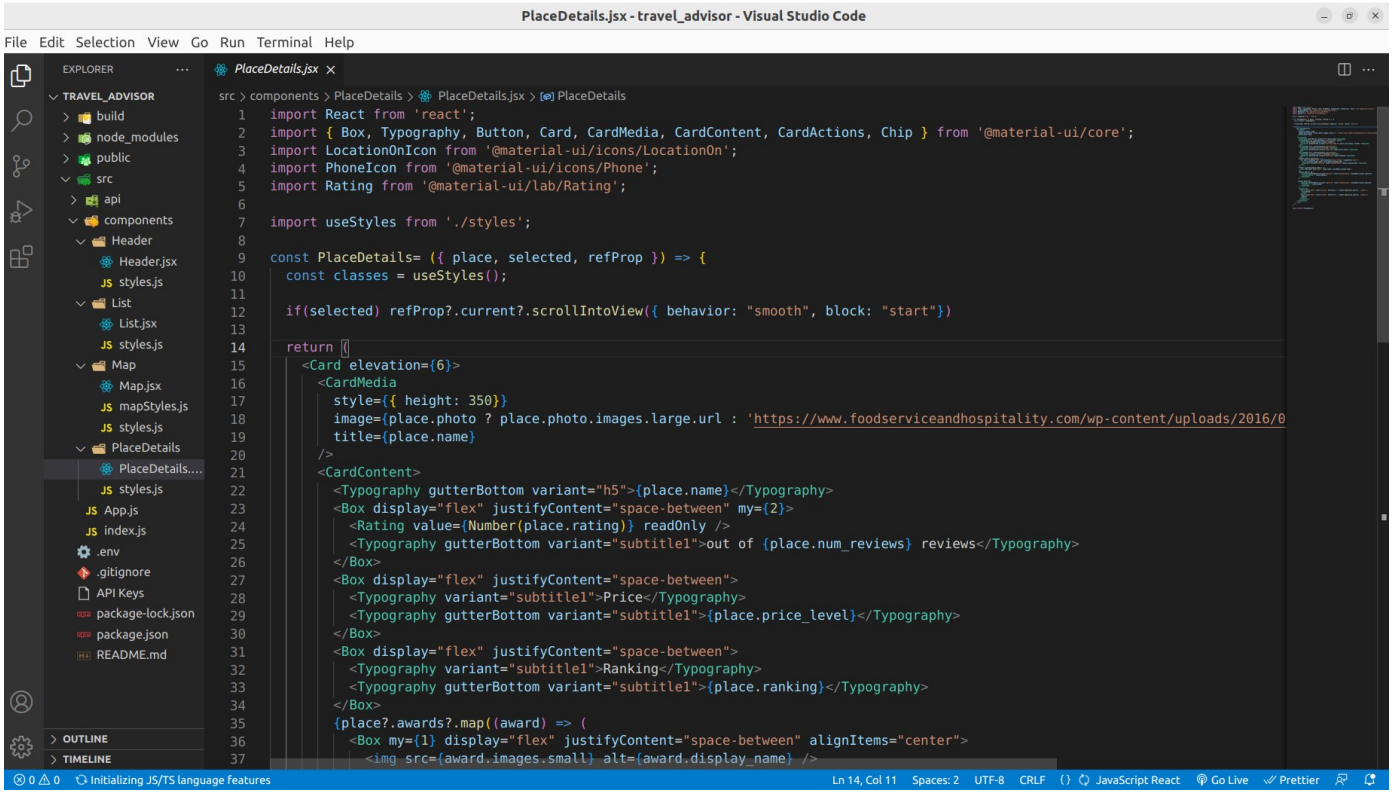
TIMELINE

Map.jsx

src > components > Map > Map.jsx > ...

```jsx
import React from 'react';
import GoogleMapReact from 'google-map-react';
import { Paper, Typography, useMediaQuery } from '@material-ui/core';
import LocationOnOutlinedIcon from '@material-ui/icons/LocationOnOutlined';
import Rating from '@material-ui/lab/Rating';

import useStyles from './styles';

import mapStyles from './mapStyles';

const Map= ({setCoordinates, setBounds, coordinates, places, setChildClicked}) => {
  const classes = useStyles();
  const isDesktop = useMediaQuery('(min-width: 600px)');

  return (
    <div className={classes.mapContainer}>
    <GoogleMapReact bootstrapURLKeys={{key: process.env.REACT_APP_GOOGLE_MAPS_API_KEY}}
     defaultCenter={coordinates}
     center={coordinates}
     defaultZoom={14}
     margin={[50, 50, 50, 50]}
     options={{disableDefaultUI: true, zoomControl: true, styles: mapStyles }}
     onChange={(e)=>{
       setCoordinates({ lat:e.center.lat, lng: e.center.lng});
       setBounds({ne: e.marginBounds.ne, sw: e.marginBounds.sw});
     }}
     onChildClick={(child) => setChildClicked(child)}
    >
     {places?.map((place, i) =>(
       <div
         className={classes.markerContainer}
         lat={Number(place.latitude)}
         lng={Number(place.longitude)}
         key={i}
       >
         {
           !isDesktop ? (
```

0 0 Initializing JS/TS language features — Ln 1, Col 1 Spaces: 2 UTF-8 CRLF JavaScript React Go Live Prettier


PlaceDetails.jsx - travel_advisor - Visual Studio Code
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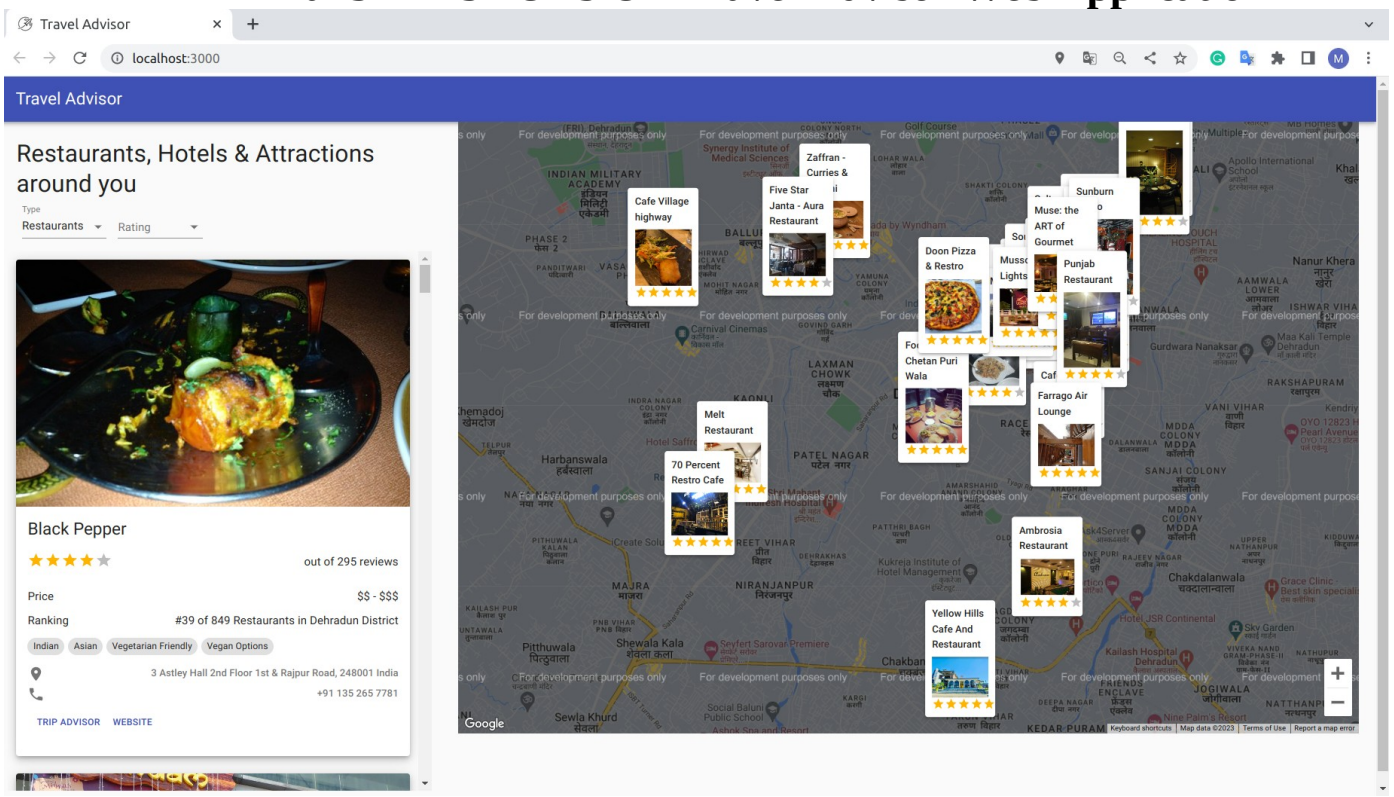
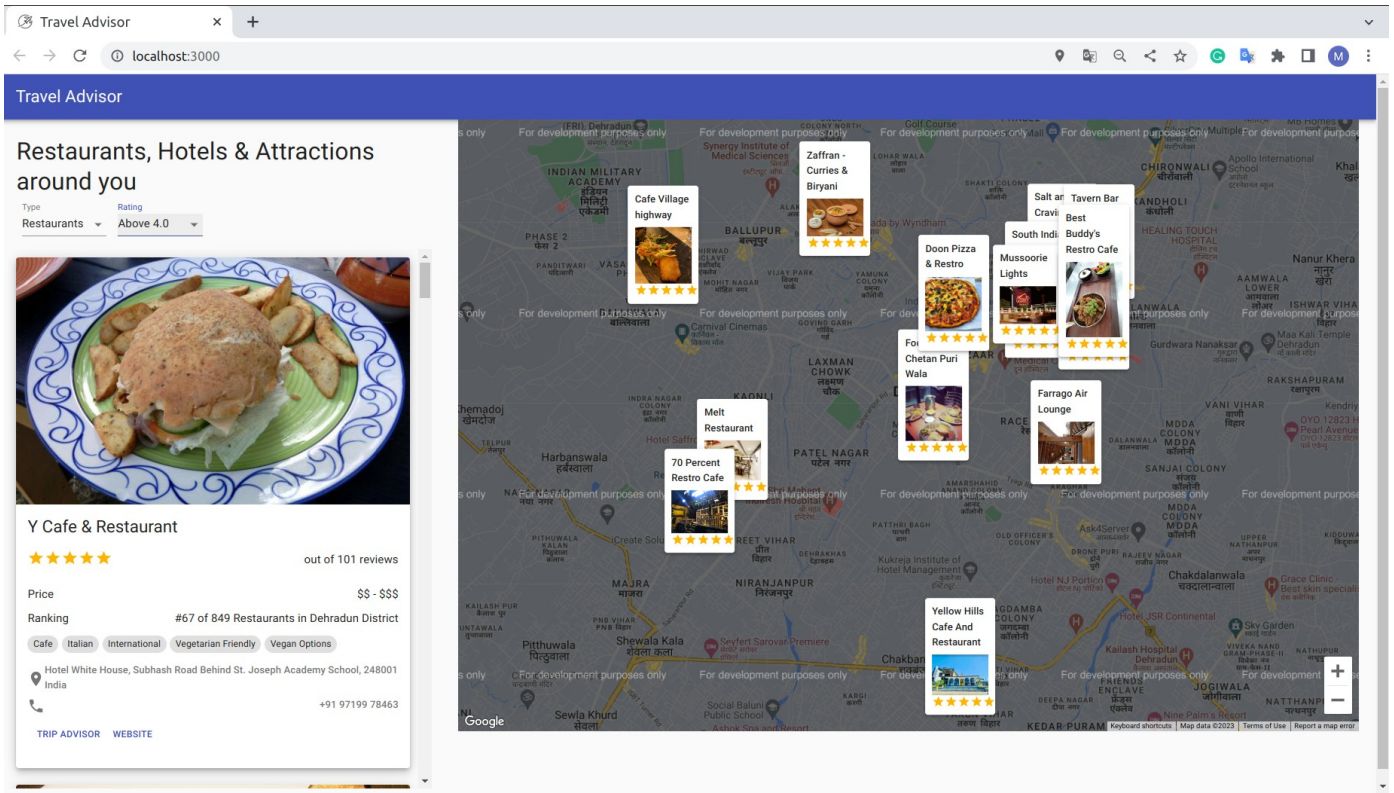
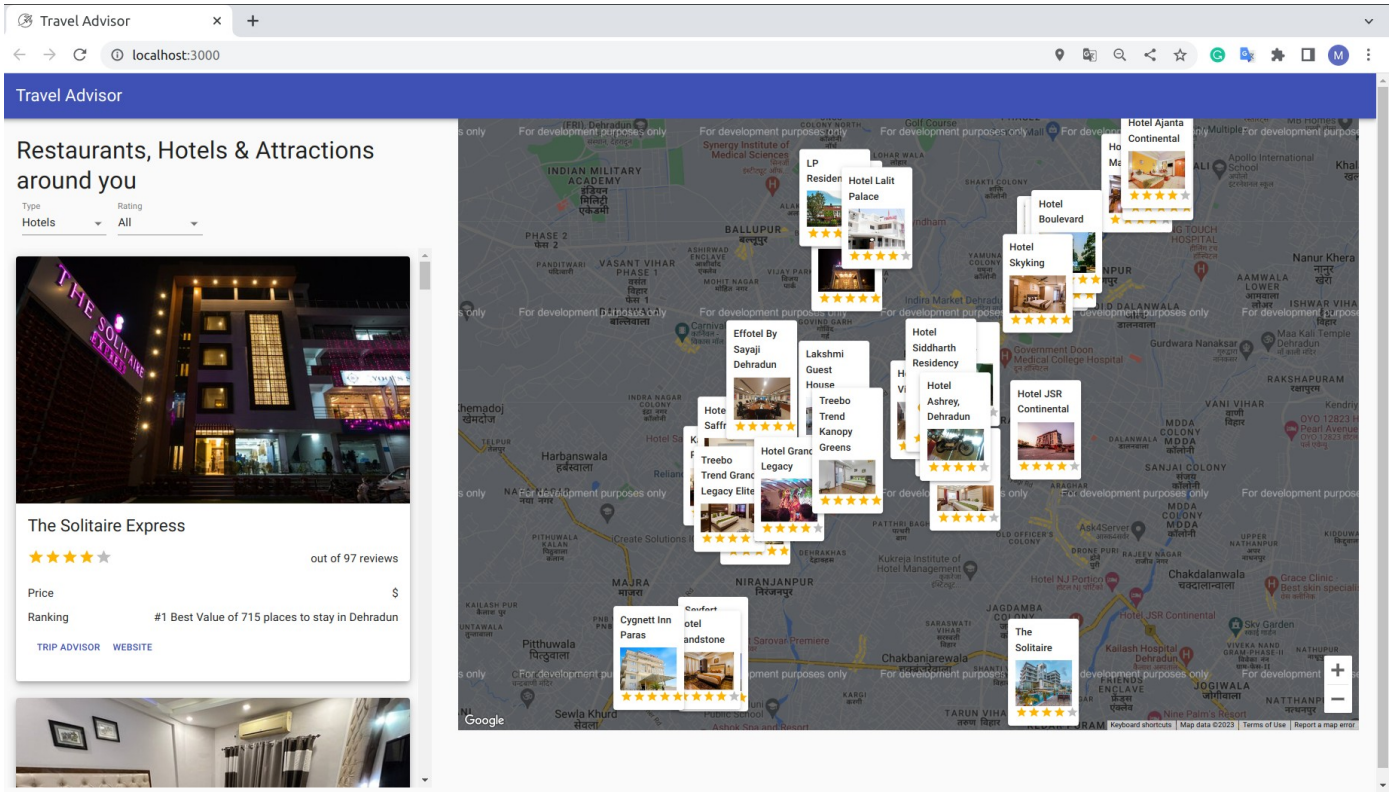
PlaceDetails.jsx
src > components > PlaceDetails > PlaceDetails.jsx > PlaceDetails
import React from 'react';
import { Box, Typography, Button, Card, CardMedia, CardContent, CardActions, Chip } from '@material-ui/core';
import LocationOnIcon from '@material-ui/icons/LocationOn';
import PhoneIcon from '@material-ui/icons/Phone';
import Rating from '@material-ui/lab/Rating';
import useStyles from './styles';
const PlaceDetails= ({ place, selected, refProp }) => {
const classes = useStyles();
if(selected) refProp?.current?.scrollIntoView({ behavior: "smooth", block: "start"})
return (
<Card elevation={6}>
<CardMedia
style={{ height: 350}}
image={place.photo ? place.photo.images.large.url : 'https://www.foodserviceandhospitality.com/wp-content/uploads/2016/0
title={place.name}
/>
<CardContent>
<Typography gutterBottom variant="h5">{place.name}</Typography>
<Box display="flex" justifyContent="space-between" my={2}>
<Rating value={Number(place.rating)} readOnly />
<Typography gutterBottom variant="subtitle1">out of {place.num_reviews} reviews</Typography>
</Box>
<Box display="flex" justifyContent="space-between">
<Typography variant="subtitle1">Price</Typography>
<Typography gutterBottom variant="subtitle1">{place.price_level}</Typography>
</Box>
<Box display="flex" justifyContent="space-between">
<Typography variant="subtitle1">Ranking</Typography>
<Typography gutterBottom variant="subtitle1">{place.ranking}</Typography>
</Box>
{place?.awards?.map((award) => (
<Box my={1} display="flex" justifyContent="space-between" alignItems="center">

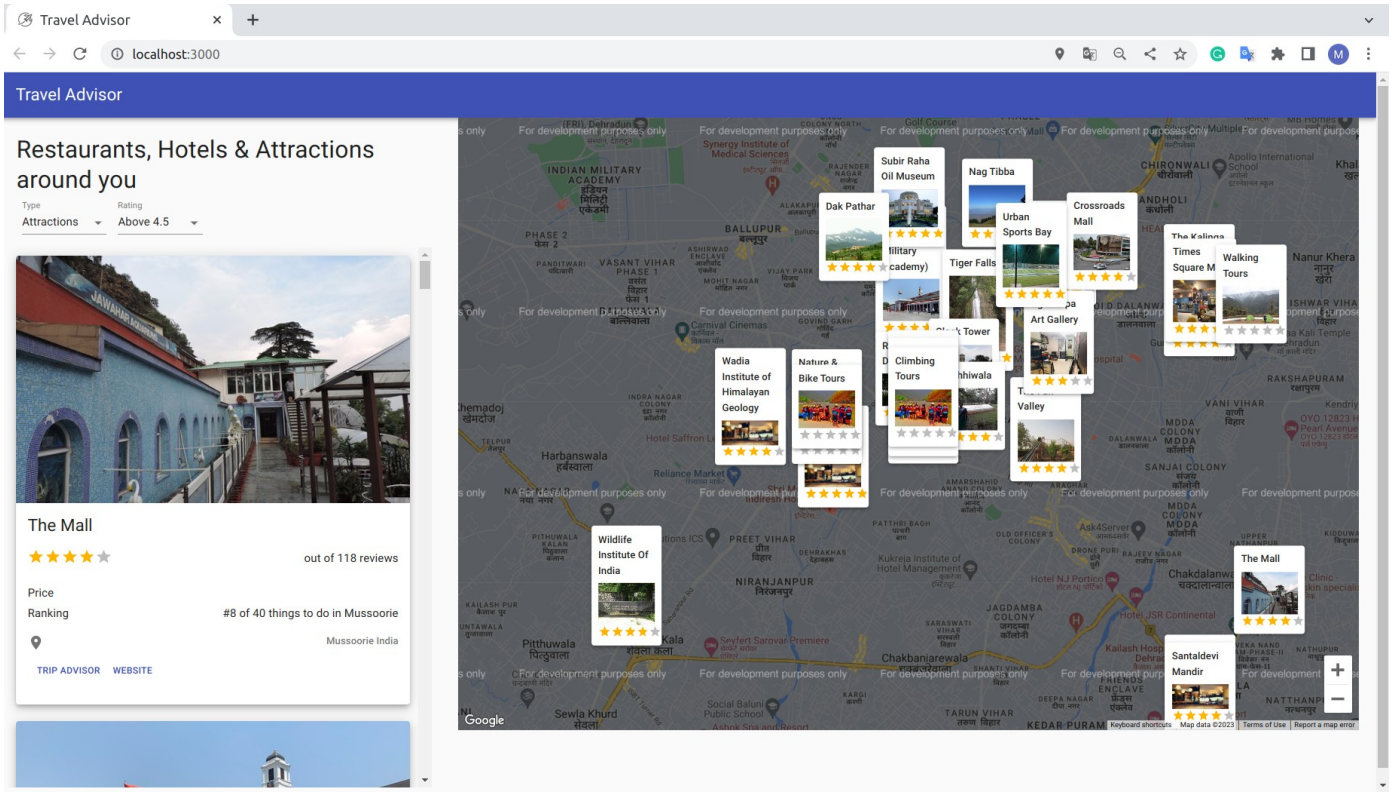
Initializing JS/TS language features
Ln 14, Col 11
Spaces: 2
UTF-8
CRLF
JavaScript React
Go Live
Prettier

Final SNAPSHOTS OF Travel Advisor Web Application






Travel Advisor
localhost:3000
Travel Advisor
Restaurants, Hotels & Attractions around you
Type
Hotels
Rating
All
The Solitaire Express
out of 97 reviews
Price
$
Ranking
#1 Best Value of 715 places to stay in Dehradun
TRIP ADVISOR
WEBSITE
Google


Travel Advisor
localhost:3000
Travel Advisor
Restaurants, Hotels & Attractions around you
Type
Attractions
Rating
Above 4.5
The Mall
out of 118 reviews
Price
Ranking
#8 of 40 things to do in Mussoorie
Mussoorie India
TRIP ADVISOR
WEBSITE
Google

CHAPTER 5.

CONCLUSION AND FUTURE WORK

5.1 CONCLUSION

This Travel Advisor Web Application helps people to find the find the best Restaurant, hotels, and attractions around their location. It provides the details of Restaurants like rating of the restaurants, price, ranking, certificates of restaurants, top food of the restaurant, location details, and phone number and also provides the Restaurant's official website link.

5.2 FUTURE LOOK

In the near future I would like to add search option in the Travel Advisor Web Application So user can enter the location of any place where they want to find the best restaurant, hotels and attraction.

REFERENCES

Website Links

https://www.w3schools.com/

https://stackoverflow.com/

https://www.youtube.com/

https://www.geeksforgeeks.org/