Question1. Describe the main differences between the CSS flexbox layout model and CSS grid layout model. When would you choose to use one over the other?

Answer -- The CSS Flexible Box Layout is a one-dimensional layout system that uses only either rows or columns to place HTML elements on the web page. As the name suggests, it's a flexible design system that automatically adjusts the size and position of elements on different screen sizes.

For example -- CSS Flex can automatically shrink and wrap horizontal (row) items as the browser viewport width gets smaller.

Important Flexbox Properties:

- **Flex-direction** — The direction in which the flex items are laid out (horizontal or vertical). It also indicates if the items are reversed.

- **Flex-wrap** — Whether the items are single-line (possibly horizontal overflow) or multi-line (stacked on smaller screens).

- **Flex-flow** — A shorthand property comprising flex-direction and flexwrap properties. The first value sets flex-direction, and the second value sets the flex-wrap behavior.

- **order** — An integer value that specifies the order or placement of items in the container. For instance, an item with an order value of 1 appears before an item with an order value of 2. This property is also supported in grid containers.

- **gap** — The guttor or gap between the elements. This property is also supported in grid containers.

Question2. Explain the role of the following key Properties in the flexbox layout model.
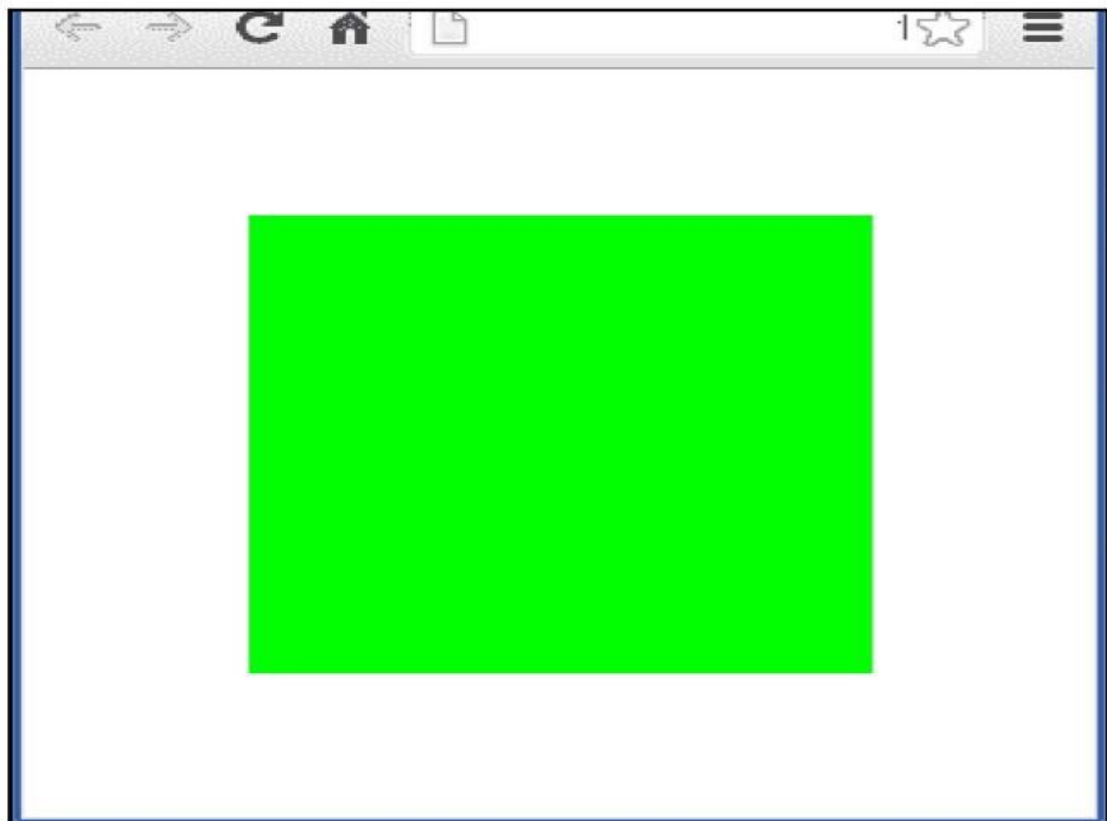(1) justify-content.
(2) align -item.
(3) gap.
(4) flex-direction.

(5) flex-wrap.

Answer----

(1)   Justify-content: The justify-content property is used to align flex items along the main axis. It controls the distribution of space between and around the flex items. Depending on the value assigned, it can align items to the start, end, center, space between, space around or space evenly between the container.

(2)   Align -item: The align-item properties controls the alignment of all items on the cross axis.

(3)   Gap: The gap property defines the size of the gap between the rows and between the columns in flexbox, grid or multi-column layout.

(4)   Flex-direction: The direction in which the flex items are laid out within the flex container.

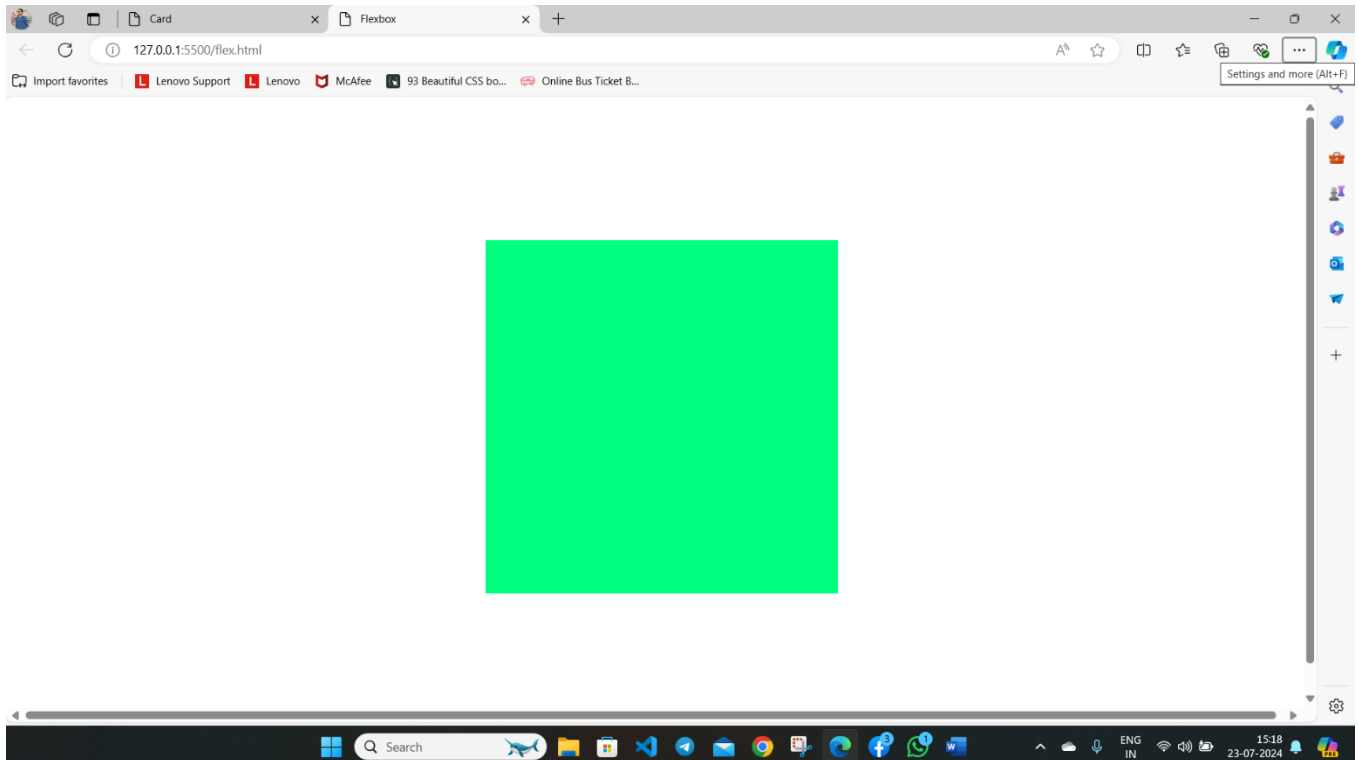**(5)   flex-wrap:** Specifies whether the flex items should wrap to multiple lines or not.

Question3. Write the code to center a div using CSS flexbox?
Reference image given below.

Answer----

Output

Code

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Flexbox</title>
    <!------------------------------Using Internal CSS------------------------------>
    <style>
        body{
            height: 100vh;
            width: 100%;
            display: flex;
            justify-content: center;
            align-items: center;
        }

        div{
            height: 400px;
            width: 400px;
            background-color: springgreen;
        }
    </style>
</head>
```
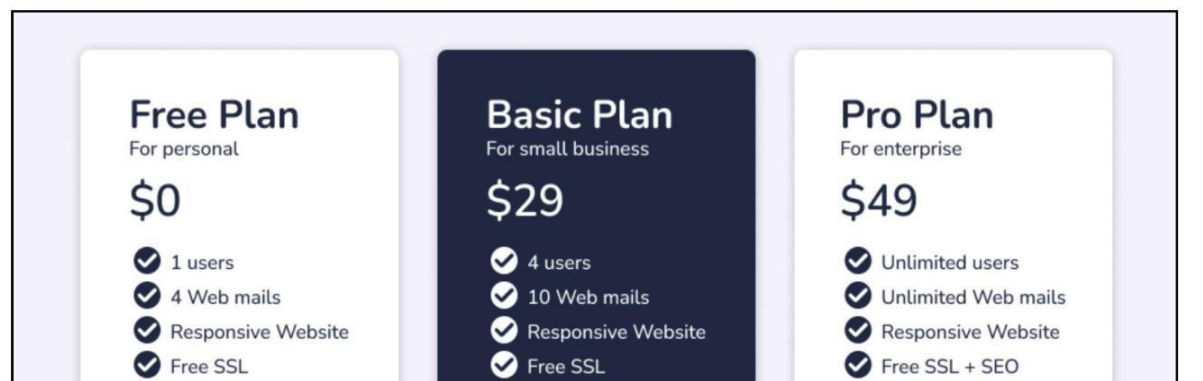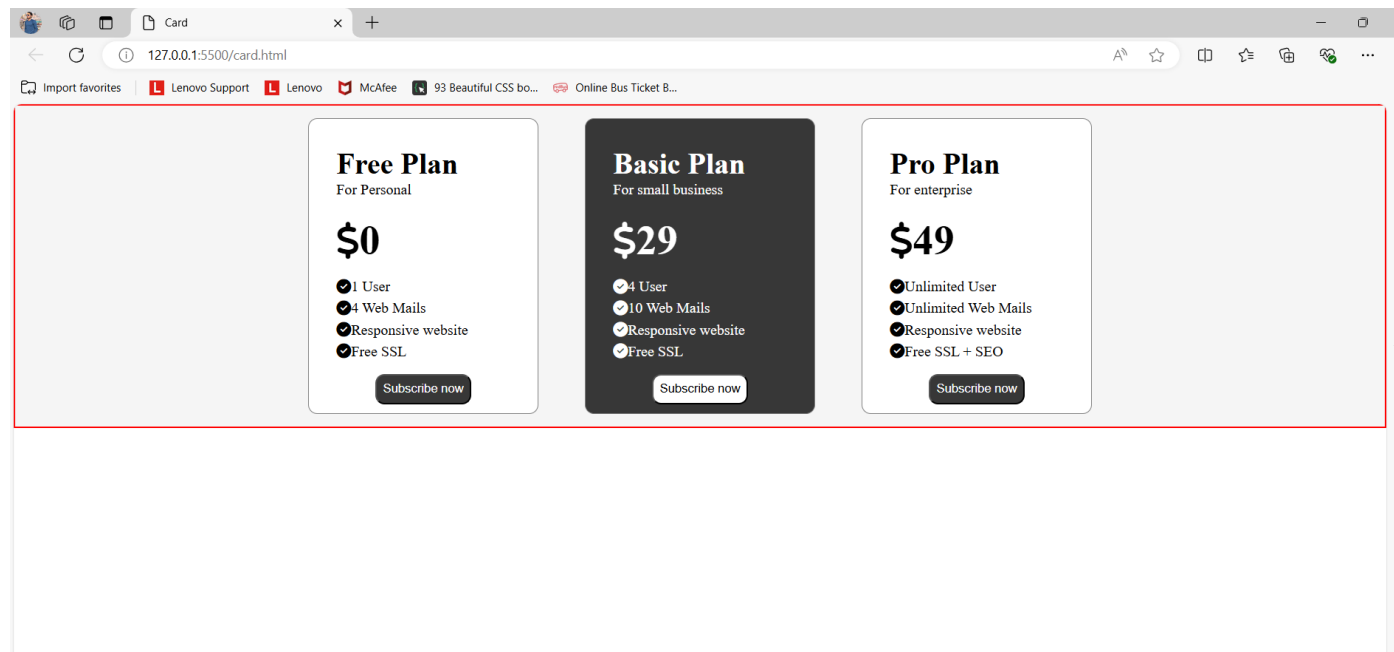
```
<body>
    <div></div>
</body>
</html>
```

Question4. A client of yours wants to add a pricing section on their website to showcase their newly introduced premium plan.
Reference image given below.

Answer--

Output

Code(HTML)

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Card</title>
    <link rel="stylesheet" href="card.css">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.6.0/css/all.min.css" integrity="sha512-
Kc323vGBEqzTmouAECnVceyQqyqdsSiqLQISBL29aUW4U/M7pSPA/gEUZQqv1cwx4OnYxTxve5UMg5GT6L4JJg=
=" crossorigin="anonymous" referrerpolicy="no-referrer" />
</head>
<body>
    <div class="container">
        <div class="card" id="card1">
            <div class="head1">
                <h1>Free Plan</h1>
                <span>For Personal</span>
            </div>
            <div class="doller">
                <i class="fa-solid fa-dollar-sign"></i>
                <h1>0</h1>
            </div>
            <div class="details">
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>1 User</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>4 Web Mails</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>Responsive website</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>Free SSL</p>
                </div>
            </div>
            <div class="btn" id="btn1">
                <button>Subscribe now</button>
            </div>
```

```html
            </div>
        <div class="card" id="card2">
            <div class="head1">
                <h1>Basic Plan</h1>
                <span>For small business</span>
            </div>
            <div class="doller">
                <i class="fa-solid fa-dollar-sign"></i>
                <h1>29</h1>
            </div>
            <div class="details">
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>4 User</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>10 Web Mails</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>Responsive website</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>Free SSL</p>
                </div>
                </div>
                <div class="btn" id="btn2">
                    <button>Subscribe now</button>
                </div>
        </div>
        <div class="card" id="card1">
            <div class="head1">
                <h1>Pro Plan</h1>
                <span>For enterprise</span>
            </div>
            <div class="doller">
                <i class="fa-solid fa-dollar-sign"></i>
                <h1>49</h1>
            </div>
            <div class="details">
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
                    <p>Unlimited User</p>
                </div>
                <div class="first">
                    <i class="fa-solid fa-circle-check"></i>
```

```html
            <p>Unlimited Web Mails</p>
        </div>
        <div class="first">
            <i class="fa-solid fa-circle-check"></i>
            <p>Responsive website</p>
        </div>
        <div class="first">
            <i class="fa-solid fa-circle-check"></i>
            <p>Free SSL + SEO</p>
        </div>
    </div>
    <div class="btn" id="btn1">
        <button>Subscribe now</button>
    </div>
    </div>
    </div>
</body>
</html>
```

Code(CSS)

```css
*{
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}
.container{
    height: 350px;
    width: 100%;
    border: 2px solid red;
    display: flex;
    justify-content: center;
    gap: 50px;
    align-items: center;
    background-color: whitesmoke;
}
.card{
    height: 320px;
    width: 250px;
    border-radius: 10px;
}
#card1{
    border: 1px solid gray;
    background-color: white;
}
```
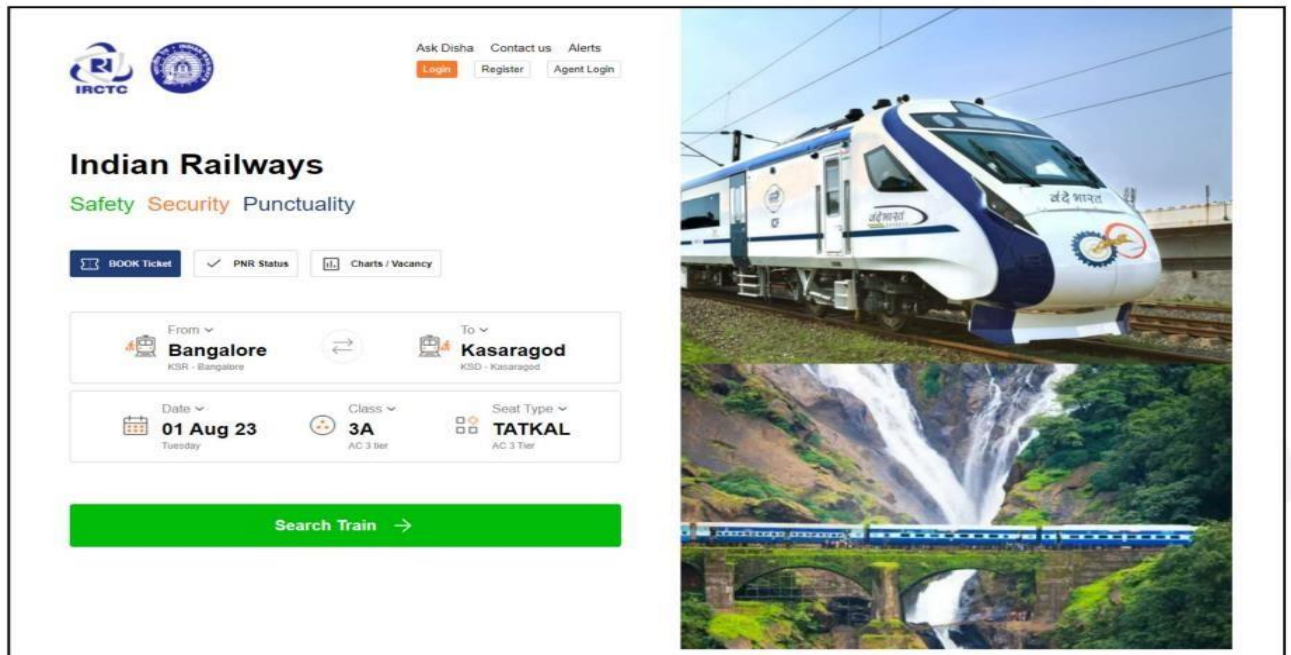
```css
.head1{
    margin-left: 30px;
    margin-top: 30px;
}
.doller{
    display: flex;
    margin: 20px 0 0 30px;
    align-items: center;
}
.doller>h1{
    font-size: 45px;
}
.doller>i{
    font-size: 40px;
}
.first{
    display: flex;
    align-items: center;
    padding-top: 5px;
}
.details{
    margin: 10px 0 0 30px;
}
#card2{
    border: 1px solid gray;
    background-color: #373737;
    color: white;
}
.btn{
    display: flex;
    justify-content: center;
    align-items: center;
    padding: 5px;
    margin-top: 10px;
}
.btn>button{
    padding: 7px;
    border-radius: 10px;
}
#btn1>button{
    background-color: #373737;
    color: white;
}
#btn2>button{
    background-color: white;
}
```
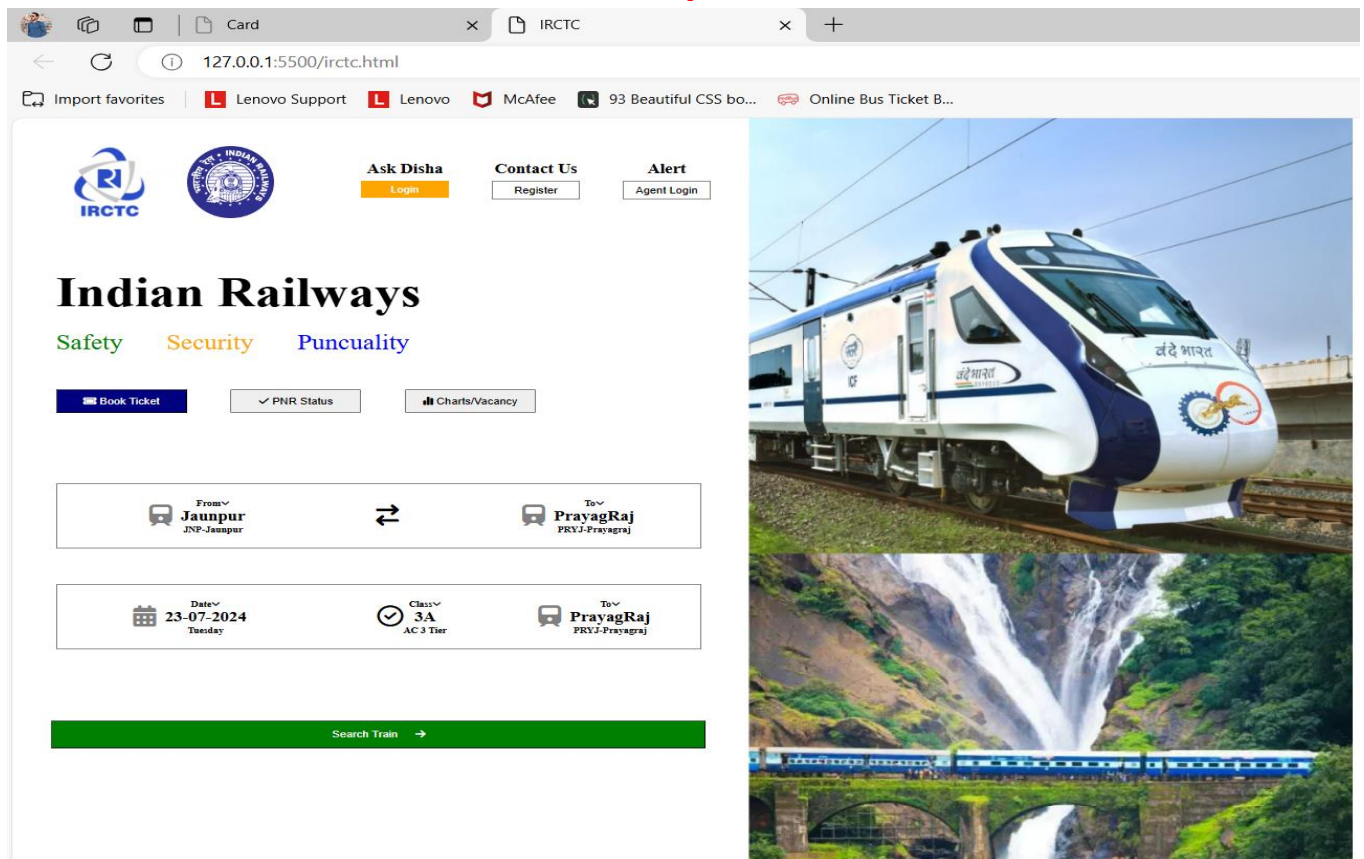
Question5. Build a clone of the IRCTC Ticket booking page?
Reference image given below.

Answer—

Output

Code(HTML)

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>IRCTC</title>
    <link rel="stylesheet" href="irctc.css" />
    <link
      rel="stylesheet"
      href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.6.0/css/all.min.css"
      integrity="sha512-
Kc323vGBEqzTmouAECnVceyQqyqdsSiqLQISBL29aUW4U/M7pSPA/gEUZQqv1cwx4OnYxTxve5UMg5GT6L4JJg=
="
      crossorigin="anonymous"
      referrerpolicy="no-referrer"
    />
  </head>
  <body>
    <div class="container">
      <div class="left_side">
        <!--------------------------------------Navbar------------------------------->
        <div class="nav">
          <div class="logo">
            <img
              src="Assets/IRCTC-Emblema-650x366.png"
              alt="logo"
              class="img1"
            />
            <img src="Assets/Indian_rain_logo.png" alt="logo" class="img2" />
          </div>
          <div class="heading">
            <div id="login_btn" class="btn">
              <h1>Ask Disha</h1>
              <button>Login</button>
            </div>
            <div id="register_btn" class="btn">
              <h1>Contact Us</h1>
              <button>Register</button>
            </div>
            <div id="agent_btn" class="btn">
              <h1>Alert</h1>
              <button>Agent Login</button>
            </div>
          </div>
        </div>
      </div>
```

```html
        <!-------------------------------Navbar end---------------------------
------->
        <!-------------------------------main_section----------------------------
----------->
    <div class="ssp_section">
      <div class="header">
        <h1>Indian Railways</h1>
        <div class="para">
          <p id="para1">Safety</p>
          <p id="para2">Security</p>
          <p id="para3">Puncuality</p>
        </div>
        <div class="btn2">
          <button class="special_btn">
            <i class="fa-solid fa-ticket"></i>
            Book Ticket
          </button>
          <button>
            <i class="fa-solid fa-check"></i>
            PNR Status
          </button>
          <button>
            <i class="fa-solid fa-chart-simple"></i>
            Charts/Vacancy
          </button>
        </div>
        <div class="detail">
          <div class="distance">
            <div class="from">
              <i class="fa-solid fa-train"></i>
              <div class="text">
                <h3 class="spcl">
                  From<i class="fa-solid fa-angle-down"></i>
                </h3>
                <h1>Jaunpur</h1>
                <h3 class="spcl">JNP-Jaunpur</h3>
              </div>
              <div class="arrow">
                <i class="fa-solid fa-arrow-right-arrow-left"></i>
              </div>
            </div>
            <div class="from">
              <i class="fa-solid fa-train"></i>
              <div class="text">
                <h3 class="spcl">
                  To<i class="fa-solid fa-angle-down"></i>
                </h3>
                <h1>PrayagRaj</h1>
```

```html
                    <h3 class="spcl">PRYJ-Prayagraj</h3>
                  </div>
                </div>
              </div>
              <div class="distance">
                <div class="from">
                  <i class="fa-solid fa-calendar-days"></i>
                  <div class="text">
                    <h3 class="spcl">
                      Date<i class="fa-solid fa-angle-down"></i>
                    </h3>
                    <h1>23-07-2024</h1>
                    <h3 class="spcl">Tuesday</h3>
                  </div>
                  <div class="arrow">
                    <i class="fa-sharp fa-regular fa-circle-check"></i>
                    <div class="Ac_detail">
                      <h3 class="spcl">Class<i class="fa-solid fa-angle-down"></i></h3>
                      <h1>3A</h1>
                      <h3 class="spcl">AC 3 Tier</h3>
                    </div>
                  </div>
                </div>
                <div class="from">
                  <i class="fa-solid fa-train"></i>
                  <div class="text">
                    <h3 class="spcl">
                      To<i class="fa-solid fa-angle-down"></i>
                    </h3>
                    <h1>PrayagRaj</h1>
                    <h3 class="spcl">PRYJ-Prayagraj</h3>
                  </div>
                </div>
              </div>
            </div>
          </div>
        </div>
        <div class="search_btn">
        <button>Search Train<i class="fa-solid fa-arrow-right"></i></button>
    </div>
      </div>
      <div class="right_section">
        <img src="Assets/Rectangle 11.png" alt="logo" />
      </div>
    </div>
  </body>
</html>
```

Code(CSS)

```css
*{
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}
.container{
    height: 100vh;
    display: flex;

}
.nav{
    display: flex;
    padding: 20px;
    margin-top: 20px;
}
.logo{
    display: flex;
}
.logo > .img1{
    width: 180px;
}
.logo > .img2{
    width: 100px;
}
.heading{
    display: flex;
    padding: 20px;
    margin-left: 30px;
    text-align: center;
}
.btn{
    padding-left: 50px;
}
.btn > button{
    width: 100px;
    margin-top: 5px;
    background-color: white;
    border: 1px solid gray;
    padding: 5px;
    cursor: pointer;
}
.btn>h1{
    font-size: 20px;
}
#login_btn > button{
    background-color: orange;
```

```css
    border: none;
    color: white;
}
.ssp_section{
    padding: 50px;
}
.header{
    font-size: 30px;
}
.para{
    display: flex;
    margin-top: 20px;
    gap: 50px;
}
#para1{
    color: green;
}
#para2{
    color: orange;
}
#para3{
    color: blue;
}
.btn2{
    margin-top: 50px;
    display: flex;
    gap: 50px;
}
.btn2>button{
    padding: 8px;
    width: 150px;
}
.btn2>button{
    cursor: pointer;
}
.special_btn{
    background-color: navy;
    color: white;
}
.detail{
   width: 100%;
   margin-top: 100px;
}
.distance{
    border: 1px solid gray;
    margin-top: 50px;
    padding: 20px;
    display: flex;
```

```css
    justify-content: space-around;
}
.distance>.from{
    display: flex;
    margin-left: 30px;
}
.distance>.from>i{
    margin-top: 10px;
    color: gray;
}
.distance>.from>.text{
    font-size: 10px;
    text-align: center;
    margin-left: 10px;
}
.distance>.from>.tex>.spcl{
    color: gray;
}
.Ac_detail{
    font-size: 10px;
    text-align: center;

}
.arrow{
    display: flex;
    justify-content: center;
    align-items: center;
    margin-left: 150px;
}
.search_btn{
    display: flex;
    justify-content: center;
}
.search_btn>button{
    width: 750px;
    height: 40px;
    background-color: green;
    color: white;
    outline: none;
    cursor: pointer;
    margin-top: 50px;
}
.search_btn>button>i{
    margin-left: 20px;
}
```