Assignment Questions 2

Q.1 What's Box Model in CSS ?

Ans -

Box model in CSS is a model that describes how elements on a web page are rendered. It is a container that includes multiple properties like - Content, Padding, Border and Margin.

- **Content:** It represents the actual content of an element, such as text, images, or other media.
- **Padding:** Padding is the space between the content and the element's border. It is used to create space around the content and can be set using the padding property.
- **Border:** The border is a line or area that surrounds the element's content and padding.
- **Margin:** The margin is the space outside the element, surrounding the content, padding, and border.

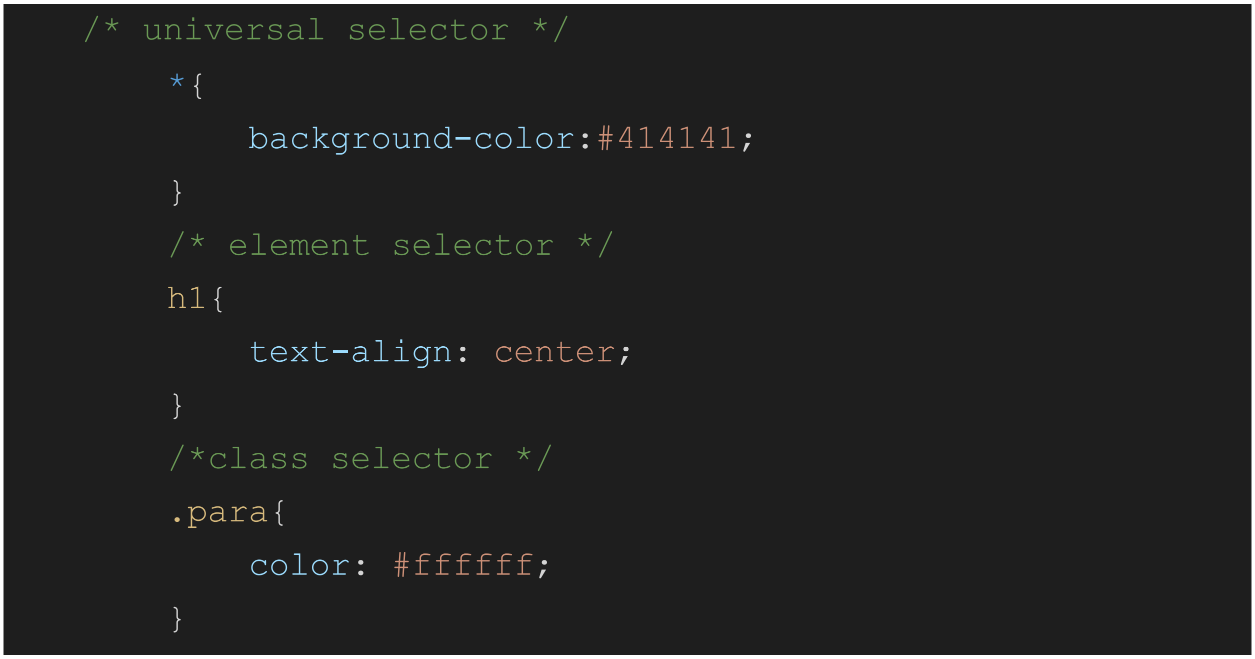
Q.2 What are the Different Types of Selectors in CSS & what are the advantages of them?

Ans -

There are five types of *Selectors* in CSS:-

i) Simple selectors - It is a type of selector that selects elements based on their name, Id, className etc. It includes - universal selector, element selector, class selector, Id selector, selector list.

E.g -



```
    /* universal selector */
        *{
            background-color:#414141;
        }
        /* element selector */
        h1{
            text-align: center;
        }
        /*class selector */
        .para{
            color: #ffffff;
        }
        /* id selector */
        #heading{
            color: #ffffff;
        }
        /* selector list */
        p,h1{
            background-color:#076731;
        }
```

(ii) Combinators selectors - It selects elements based on a specific relationship between them. A CSS selector can contain more than one simple selector. Between the simple selectors, we can include a combinator.

There are four types of combinators-

- ***Descendent selector (space) -*** The descendant selector matches all elements that are descendants of a specified element. E.g- div p { color:red } that means all the paragraphs that are descendents of div turn to red color.
- ***Child (>) -*** It selects all elements that are the children of a specified element. E.g- div>p { color:red } that means all the child paragraphs of div are turned to red color.
- ***Adjacent sibling selector (+) -*** It selects the only one element which is an adjacent sibling to the specified element. e.g- div+p { color:red } that means only one paragraph which is adjacent sibling to div is turned to red.
- ***General sibling selector (~) -*** It selects all elements that are next siblings of a specified element. e.g- div~p { color:red } it means all the paragraphs that are sibling to div are turned to red color.

(iii) Attribute selectors - The attribute selector is used to select elements with a specified attribute.

Different types of attribute selectors:-

- ***[attribute="value"] selector -*** It is used to select elements with a specified attribute and value.
- ***[attribute~="value"] selector -*** It is used to select elements with an attribute value containing a specified word.
- ***[attribute|="value"] selector -*** It is used to select elements with the specified attribute, whose value can be exactly the specified value or the specified value followed by a hyphen (-).

- ***[attribute^="value"] selector -*** It is used to select elements with the specified attribute, whose value starts with the specified value.
- ***[attribute$="value"] selector -*** It is used to select elements whose attribute value ends with a specified value.

(iv) Pseudo-class selectors :-

A pseudo-class selectors can be defined as a keyword which is combined to a selector that defines the special state of the selected elements.
And a pseudo-class starts with a colon **(:)**
There are following example of pseudo-class selectors -

- **:active -** It is used to add style to an active element.
- **:hover -** It adds special effects to an element when the user moves the mouse pointer over the element.
- **:link -** It adds style to the unvisited link.
- **:visited -** It adds style to a visited link.
- **:focus -** It selects the element which is focused by the user currently.
- **:first-child -** It adds special effects to an element, which is the first child of another element.

(v) Pseudo-elements selectors :-

Pseudo-elements selectors are used to style the specific part of an element. It is denoted by double colon notation (::pseudo-element).
There are following example of pseudo-elements selectors -

- **::first-letter -** It selects the first letter of the text.
- **::first-line -** It styles the first line of the text.
- **::before -** It is used to add something before the element's content.
- **::after -** It is used to add something after the element's content.
- **::selection -** It is used to select the area of an element that is selected by the user.

Q.3 What is VW/VH ?

Ans -

In CSS, vw and vh are units of measurement that represent a percentage of the viewport width and viewport height, respectively.
1vw is equal to 1% of the viewport width.
1vh is equal to 1% of the viewport height.

Q.4 What's the difference between Inline, Inline Block and block ?

Ans -

- **Inline -** Inline elements flow within the text content and do not start on a new line.
- **Inline block -** Inline-block elements behave as inline elements but respect dimensions and box model properties and It can take the height and width as we specify.
- **Block -** Block elements start on a new line, take up the full width, and create a new block-level box.

Q.5 How is Border-box different from Content Box?

Ans -

These are the values of the box-sizing property of CSS.
Content-box: By default most of the element has the property box-sizing: content-box;.
For Example:-
<div class="box" style="background-color: orange;"></div>

Here, if we give the height and width to 100px to the .box and we also want to have some padding in the box so we can apply `padding: 20px' and now the width of the box is 120px and height is also 120px.

Border-box: If we apply the box-sizing: 'border-box' so the element will be of that size only which we have given it will not affect by the margin, padding and border. the height and width will remain the same.

Q.6 What's z-index and How does it Function ?

Ans -

Z-index is a term which is used to layer the elements on the webpage. It defines the order of the elements.
The elements which have the higher index value will display on the top.

Q.7 What's Grid & Flex and the difference between them?

Ans -

Grid and Flexbox are two powerful layout systems in CSS that offer different approaches for creating flexible and responsive web layouts.

Flex -
It is used to create one dimensional layouts.
It works along either the horizontal (row) or vertical (column) axis, allowing you to create flexible and dynamic layouts.
Flexbox has better browser support, including older versions, as it has been around for a longer time
Flexbox is well-suited for simpler layouts and creating flexible and dynamic designs.

Grid -
It is used to create two-dimensional layouts.
It works well for designs that require strict control over the placement of elements in both the row and column directions, such as complex forms, magazine-like layouts, or grid-based galleries.
Grid has excellent support but may require vendor prefixes for some properties in older browsers.
Grid is ideal for complex grid-based layouts where elements need to be placed in a specific grid structure.

Q.8 Difference between absolute and relative and sticky and fixed position explained with example.

Ans -

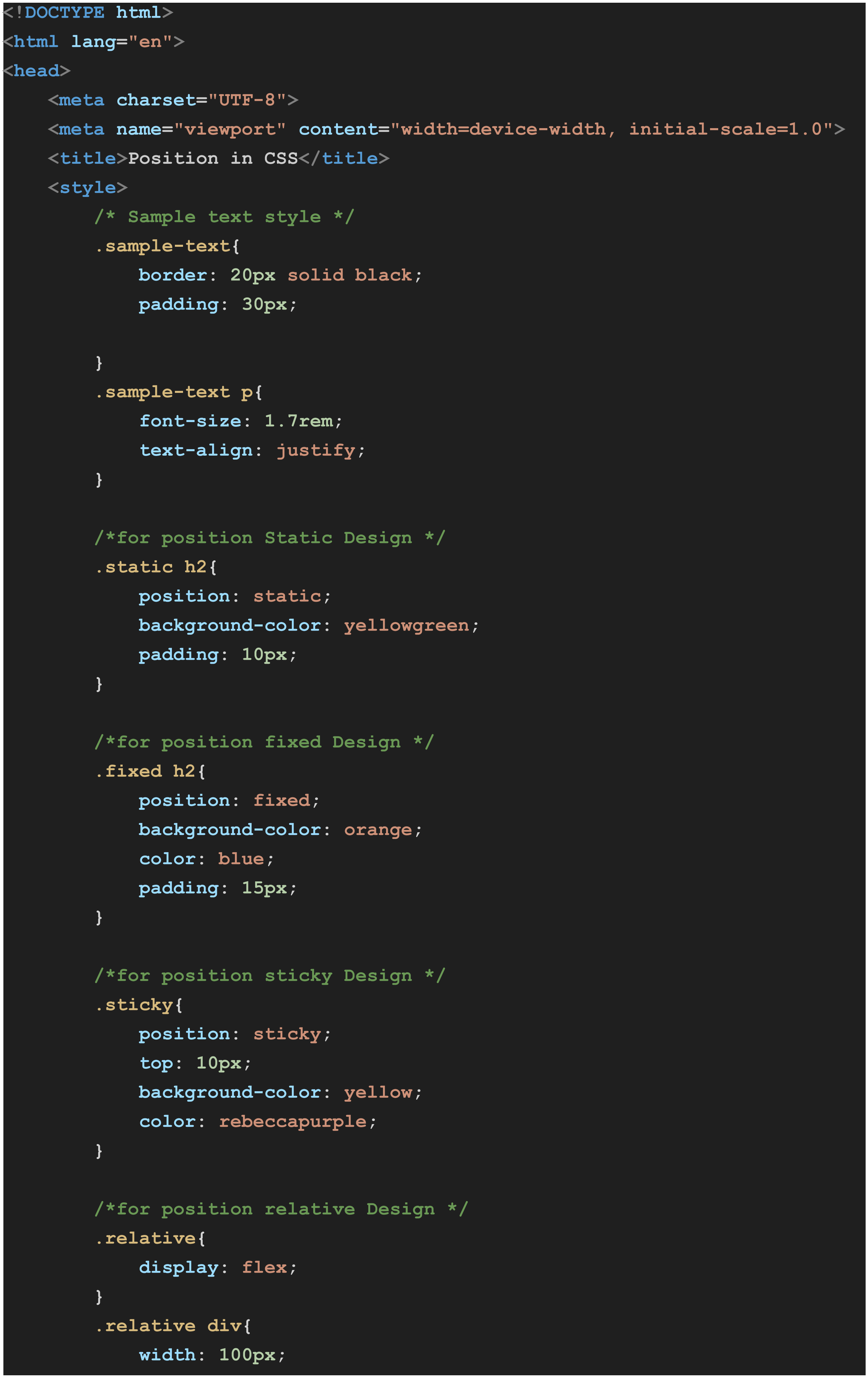
1) Absolute Position:- An element with position: absolute; will cause it to adjust its position with respect to its parent. If no parent is present, then it uses the document body as parent.

2) Relative Position:- Setting the top, right, bottom, and left properties of an element with position: relative; property will cause it to adjust from its normal position. The other objects or elements will not fill the gap.

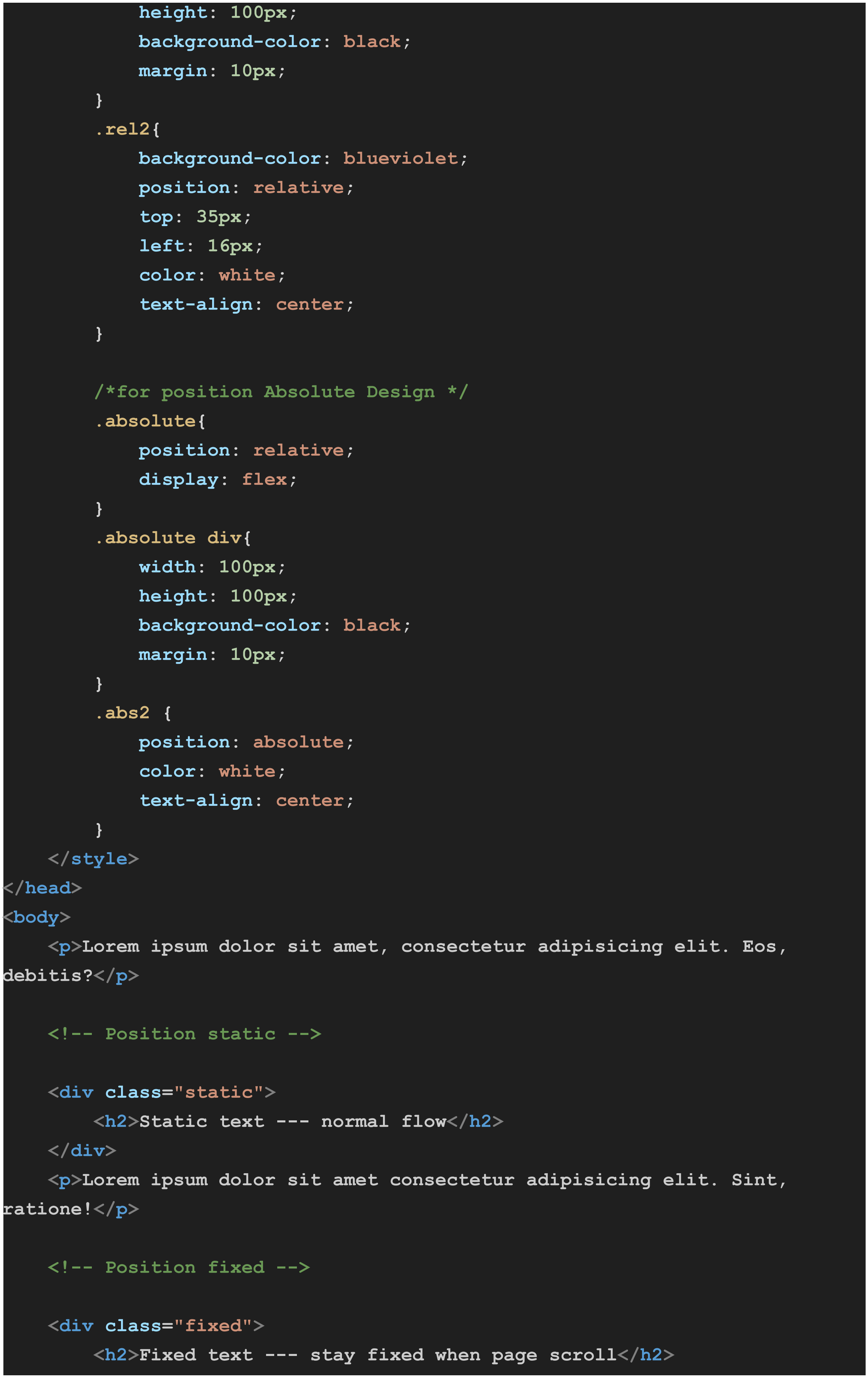
3) Sticky Position:- position: sticky; property works like a relative in its initial phase. but when the element appears it sticks to its parent to whatever property we have given.

4) Fixed Position:- Position: fixed; property applied to an element will cause it to always stay in the same place even if the page is scrolled. To position the element we use top, right, bottom, left properties.

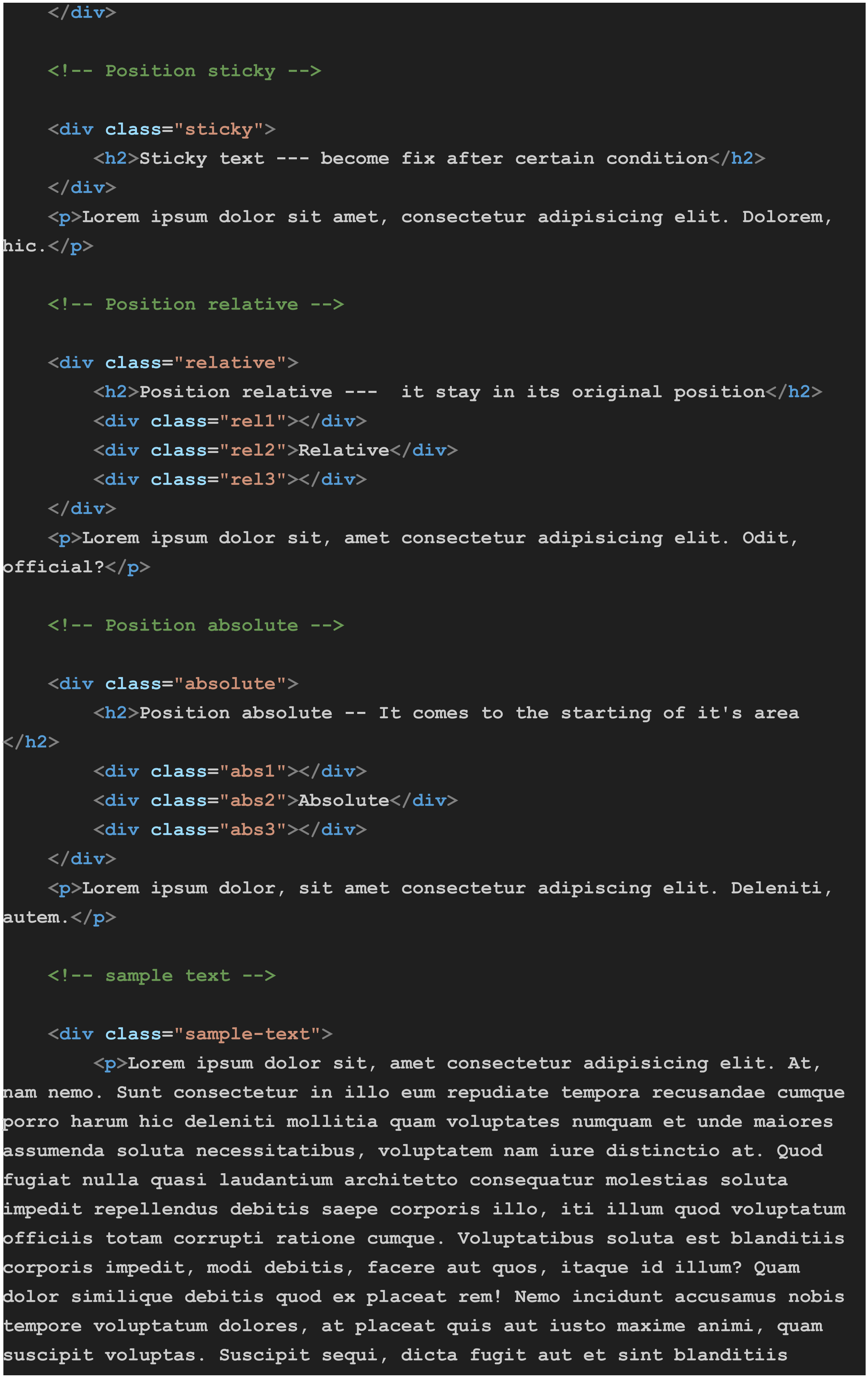
With code example -



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Position in CSS</title>
    <style>
        /* Sample text style */
        .sample-text{
            border: 20px solid black;
            padding: 30px;

        }
        .sample-text p{
            font-size: 1.7rem;
            text-align: justify;
        }

        /*for position Static Design */
        .static h2{
            position: static;
            background-color: yellowgreen;
            padding: 10px;
        }

        /*for position fixed Design */
        .fixed h2{
            position: fixed;
            background-color: orange;
            color: blue;
            padding: 15px;
        }

        /*for position sticky Design */
        .sticky{
            position: sticky;
            top: 10px;
            background-color: yellow;
            color: rebeccapurple;
        }

        /*for position relative Design */
        .relative{
            display: flex;
        }
        .relative div{
            width: 100px;
```



```
            height: 100px;
            background-color: black;
            margin: 10px;
        }
        .rel2{
            background-color: blueviolet;
            position: relative;
            top: 35px;
            left: 16px;
            color: white;
            text-align: center;
        }

        /*for position Absolute Design */
        .absolute{
            position: relative;
            display: flex;
        }
        .absolute div{
            width: 100px;
            height: 100px;
            background-color: black;
            margin: 10px;
        }
        .abs2 {
            position: absolute;
            color: white;
            text-align: center;
        }
    </style>
</head>
<body>
    <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eos,
debitis?</p>

    <!-- Position static -->

    <div class="static">
        <h2>Static text --- normal flow</h2>
    </div>
    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Sint,
ratione!</p>

    <!-- Position fixed -->

    <div class="fixed">
        <h2>Fixed text --- stay fixed when page scroll</h2>
```



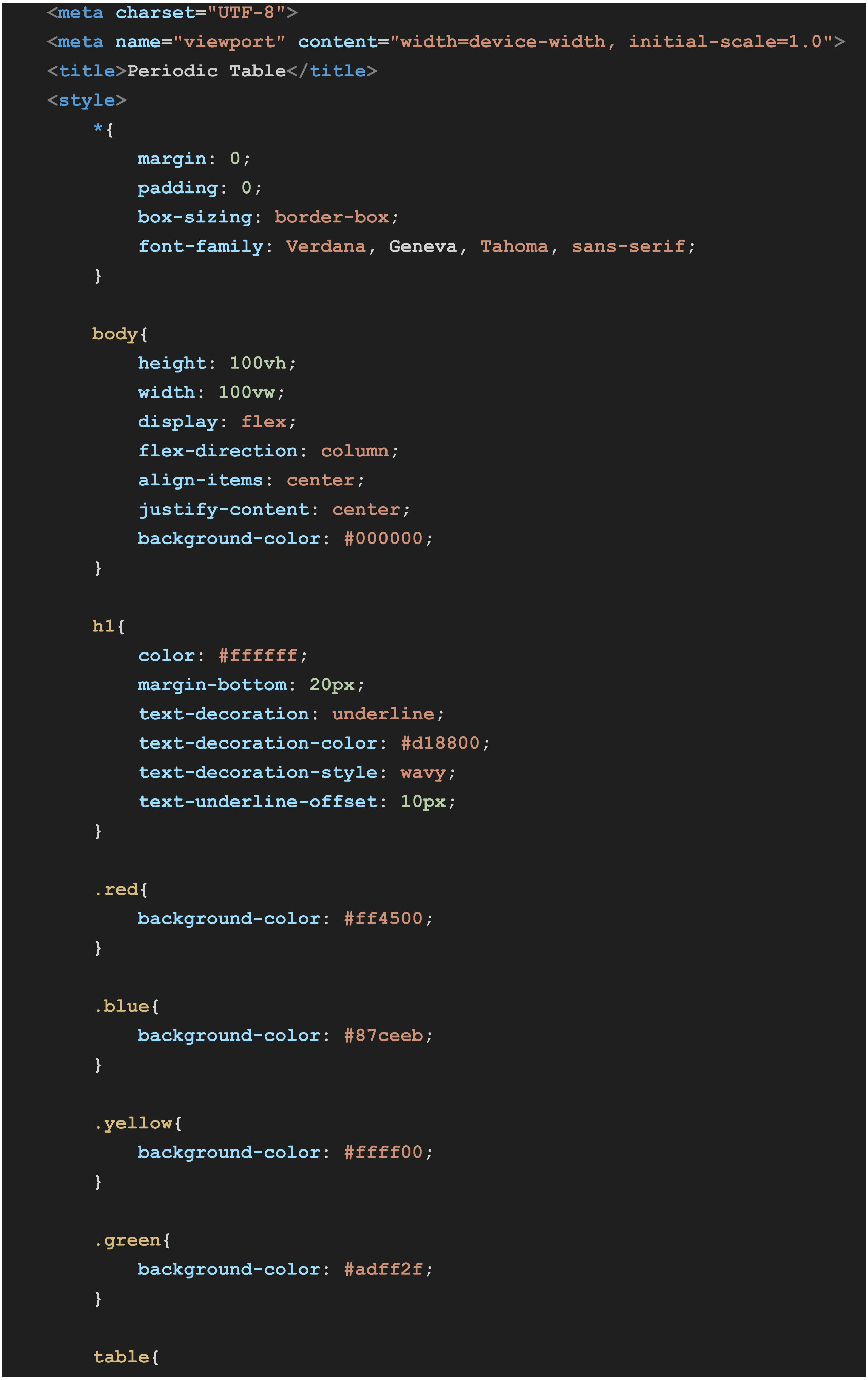
```
    </div>

    <!-- Position sticky -->

    <div class="sticky">
        <h2>Sticky text --- become fix after certain condition</h2>
    </div>
    <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Dolorem,
hic.</p>

    <!-- Position relative -->

    <div class="relative">
        <h2>Position relative ---  it stay in its original position</h2>
        <div class="rel1"></div>
        <div class="rel2">Relative</div>
        <div class="rel3"></div>
    </div>
    <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. Odit,
official?</p>

    <!-- Position absolute -->

    <div class="absolute">
        <h2>Position absolute -- It comes to the starting of it's area
</h2>
        <div class="abs1"></div>
        <div class="abs2">Absolute</div>
        <div class="abs3"></div>
    </div>
    <p>Lorem ipsum dolor, sit amet consectetur adipiscing elit. Deleniti,
autem.</p>

    <!-- sample text -->

    <div class="sample-text">
        <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit. At,
nam nemo. Sunt consectetur in illo eum repudiate tempora recusandae cumque
porro harum hic deleniti mollitia quam voluptates numquam et unde maiores
assumenda soluta necessitatibus, voluptatem nam iure distinctio at. Quod
fugiat nulla quasi laudantium architetto consequatur molestias soluta
impedit repellendus debitis saepe corporis illo, iti illum quod voluptatum
officiis totam corrupti ratione cumque. Voluptatibus soluta est blanditiis
corporis impedit, modi debitis, facere aut quos, itaque id illum? Quam
dolor similique debitis quod ex placeat rem! Nemo incidunt accusamus nobis
tempore voluptatum dolores, at placeat quis aut iusto maxime animi, quam
suscipit voluptas. Suscipit sequi, dicta fugit aut et sint blanditiis
```

```
accusantium, optio amet quis assumenda! Quisquam perspiciatis rerum iste
voluptas eum numquam minus, repellendus rem doloremque? Sint est aspernatur
voluptatibus consequatur alias quas dicta quaerat mollitia, obcaecati
dolore soluta ad quis ipsa at corrupti architecto. Mollitia culpa
aspernatur dolore modi explicado est iure at, anime sequi suscipit,
expedita voluptate totam unde porro? Quia non nobis sapiente obcaecati
distinctio, dicta quisquam vero id asperiores voluptate consectetur
voluptatum repellendus, aperiam deserunt harum consequuntur beatae fugiat
perspiciatis incidunt temporibus magnum, rem totam neque? Magnam veritatis
facilis dolorum minima pariatur temporibus nesciunt tempora officiis
sapiente, nihil voluptate corporis, architecto ex excepturi natus magni
maxime itaque perspiciatis laborum necessitatibus beatae non exercitationem
eaque. Ullam beatae voluptatibus est facilis tenetur, cumque laudantium
ipsam, unde modi odit fugit veritatis incidunt et enim dolor reprehenderit
id minus quod architecto exercitationes possimus accusamus. Esse architecto
maiores sapiente, nobis eligendi voluptas maxime labore neque in dolores
hic nisi placeat suscipit reiciendis rem delectus, eos quae nostrum,
voluptate eius eaque! Ipsa ipsam fugit officiis explicabo laudantium modi
iusto beatae, a ab asperiores esse quia numquam laboriosam distinctio
magnum. Accusamus eaque nesciunt quisquam excepturi, illo modi consequatur
blanditiis ex eum. Ut beatae quaerat inventore labore ex? Voluptatum, sunt.
Sequi numquam neque magni similique minus unde pariatur illum commodi
molestias ratione nobis, mollitia odio distinctio cupiditate libero a
quidem tenetur, blanditiis vel nesciunt facere accusantium veritatis.
Necessitatibus reiciendis, cum ab earum, nulla excepturi, accusantium quia
voluptatem magnam deleniti quod nisi aut reprehenderit enim temporibus iste
velit quas blanditiis. Tempora, voluptatum quae laudantium et sint
reiciendis hic aliquam adipisci libero voluptates magnam mollitia quos
tenetur porroeligendi, molestiae dolor beatae veritatis, quo consectetur
aperiam eveniet eius voluptas ab. Neque, porro ducimus veniam aliquam
aliquid nihil vel possimus quam voluptate cum dolores nisi ipsam sunt
dignissimos provident error esse eius, incidunt eveniet, iure a eos
sapiente pariatur numquam! Maiores suscipit nam quae nesciunt ullam
reprehenderit cumque dolor, molestias eveniet id voluptates vel quod.</p>
    </div>
</body>
</html>
```

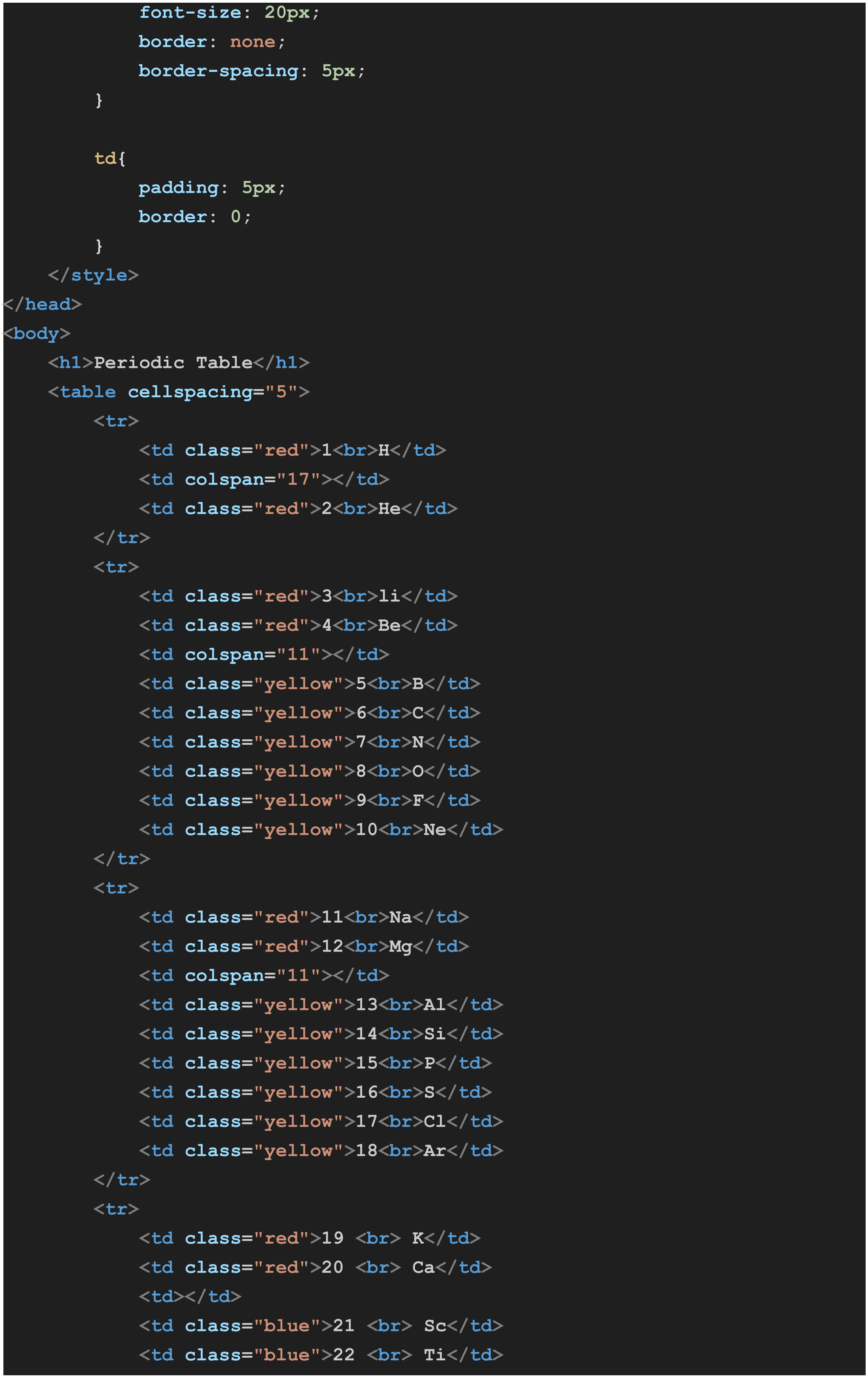
Q.9 Build Periodic Table as shown in the below image.

Ans -

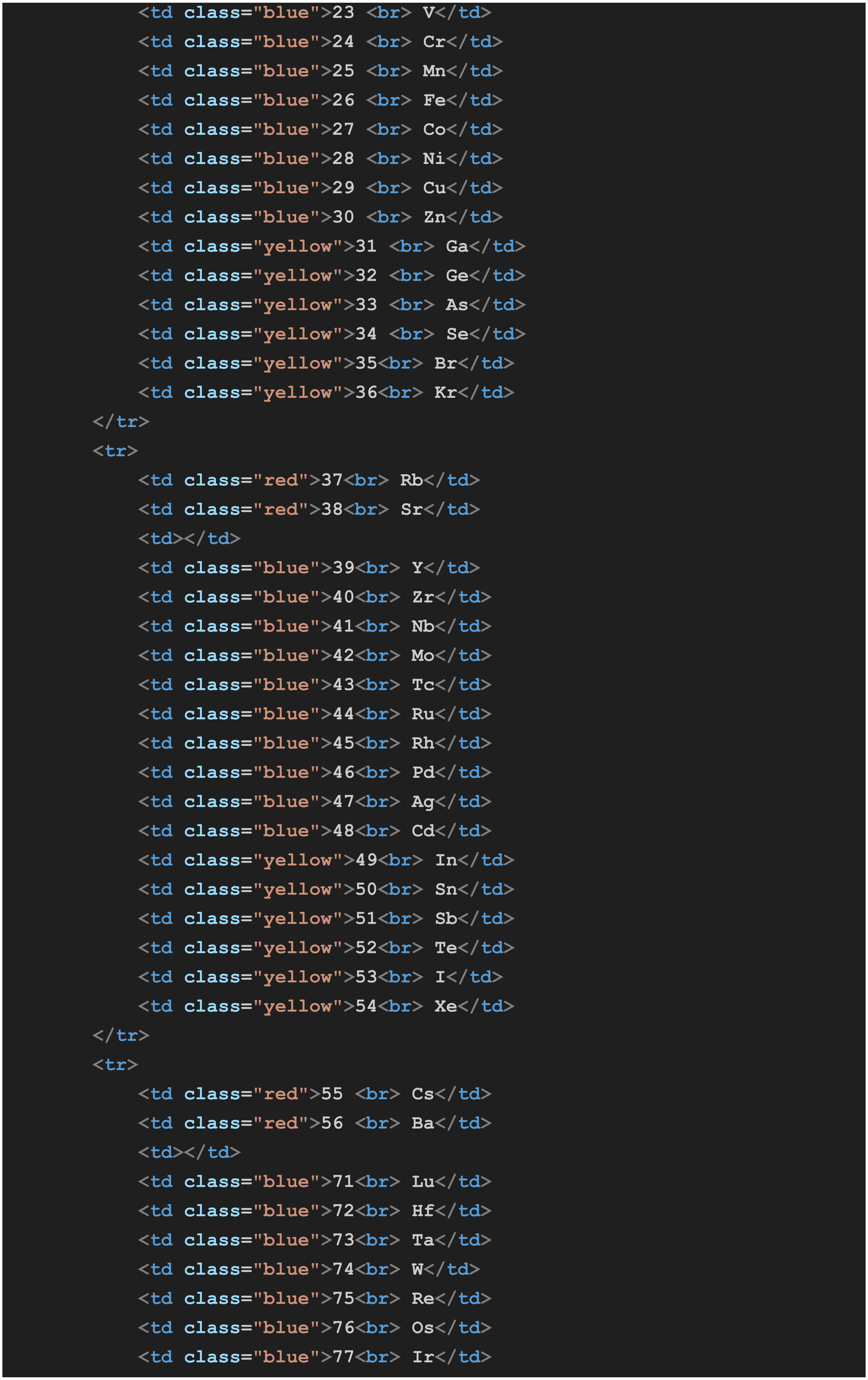
```
<!DOCTYPE html>
<html lang="en">
<head>
```



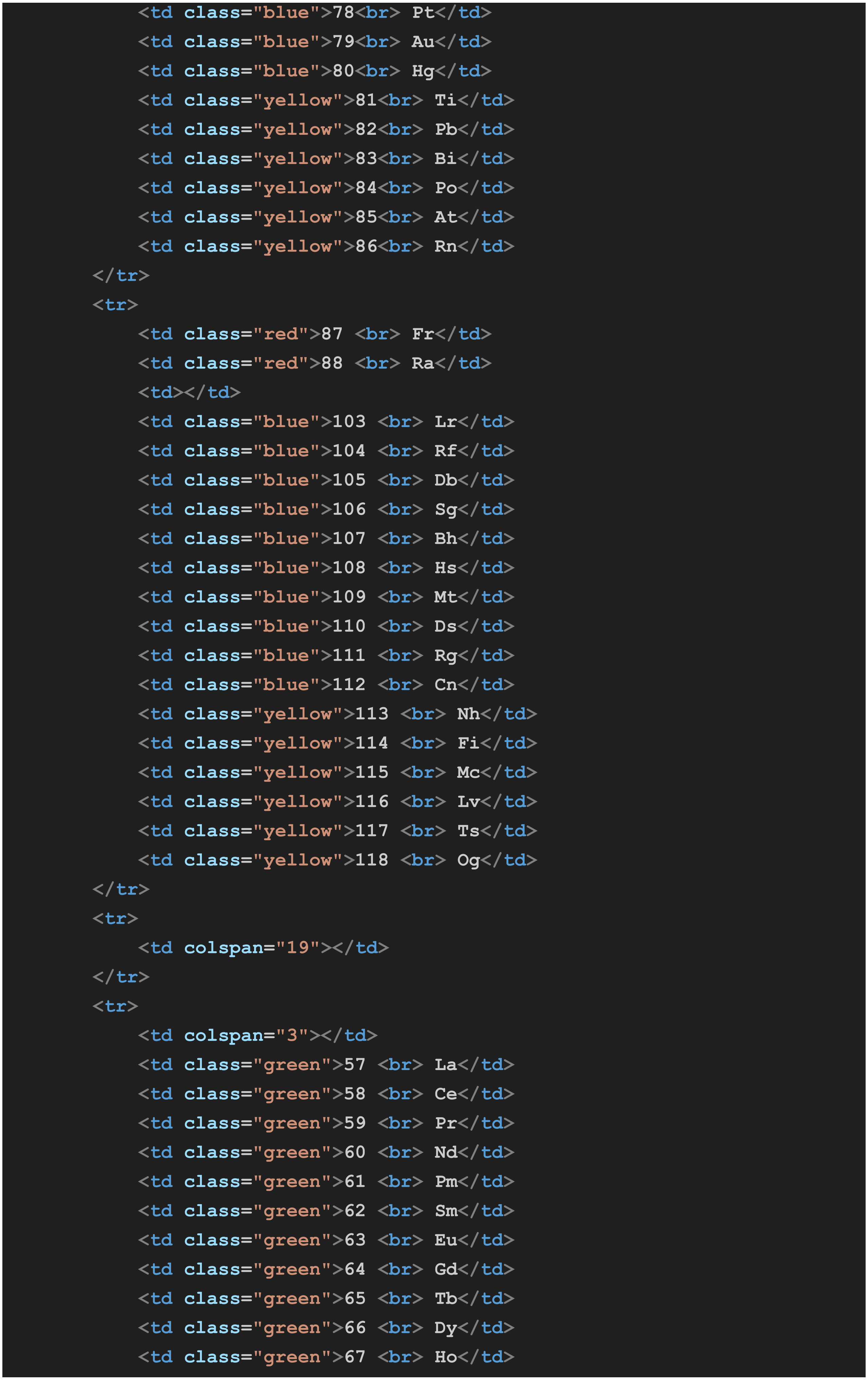
```
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Periodic Table</title>
    <style>
        *{
            margin: 0;
            padding: 0;
            box-sizing: border-box;
            font-family: Verdana, Geneva, Tahoma, sans-serif;
        }

        body{
            height: 100vh;
            width: 100vw;
            display: flex;
            flex-direction: column;
            align-items: center;
            justify-content: center;
            background-color: #000000;
        }

        h1{
            color: #ffffff;
            margin-bottom: 20px;
            text-decoration: underline;
            text-decoration-color: #d18800;
            text-decoration-style: wavy;
            text-underline-offset: 10px;
        }

        .red{
            background-color: #ff4500;
        }

        .blue{
            background-color: #87ceeb;
        }

        .yellow{
            background-color: #ffff00;
        }

        .green{
            background-color: #adff2f;
        }

        table{
```



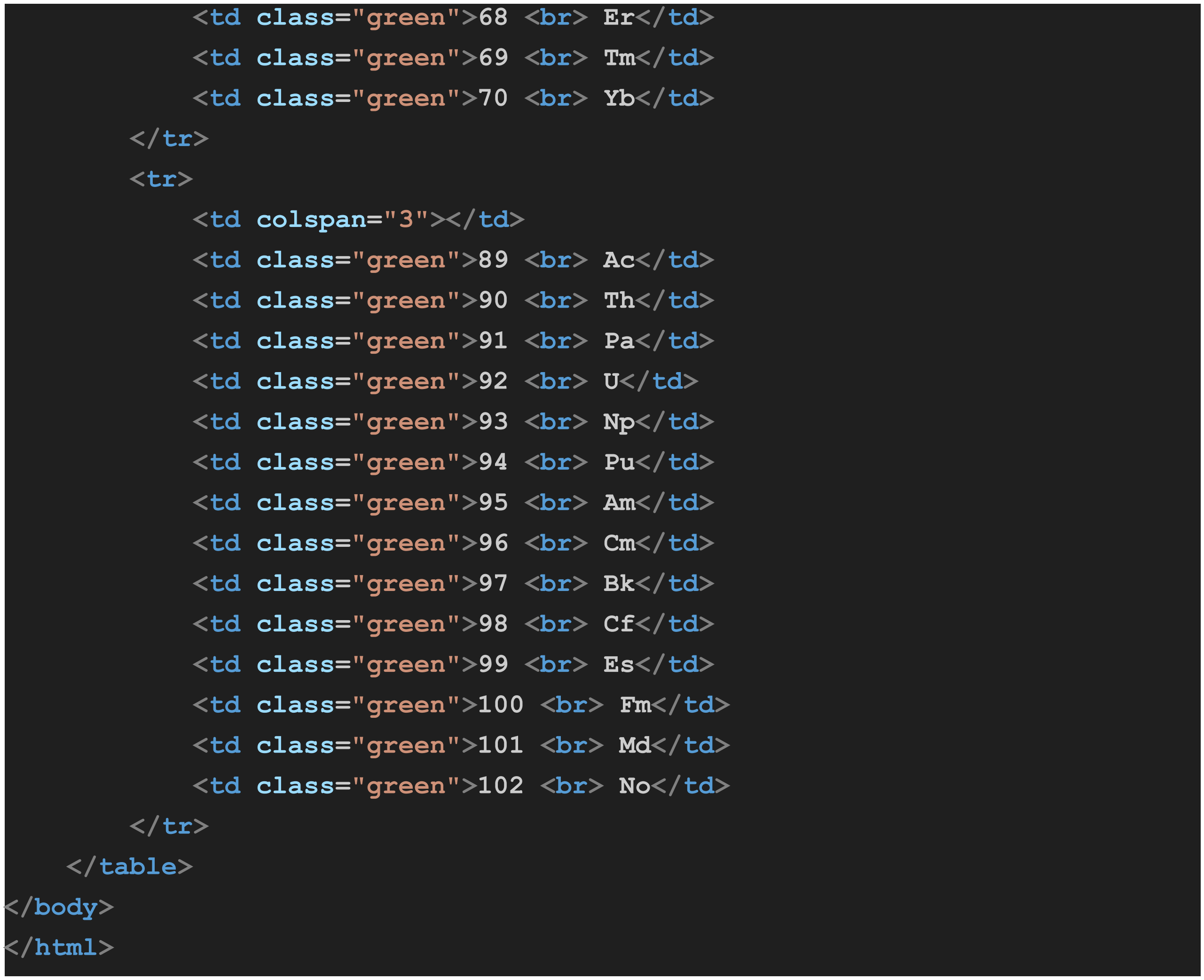
```
            font-size: 20px;
            border: none;
            border-spacing: 5px;
        }

        td{
            padding: 5px;
            border: 0;
        }
    </style>
</head>
<body>
    <h1>Periodic Table</h1>
    <table cellspacing="5">
        <tr>
            <td class="red">1<br>H</td>
            <td colspan="17"></td>
            <td class="red">2<br>He</td>
        </tr>
        <tr>
            <td class="red">3<br>li</td>
            <td class="red">4<br>Be</td>
            <td colspan="11"></td>
            <td class="yellow">5<br>B</td>
            <td class="yellow">6<br>C</td>
            <td class="yellow">7<br>N</td>
            <td class="yellow">8<br>O</td>
            <td class="yellow">9<br>F</td>
            <td class="yellow">10<br>Ne</td>
        </tr>
        <tr>
            <td class="red">11<br>Na</td>
            <td class="red">12<br>Mg</td>
            <td colspan="11"></td>
            <td class="yellow">13<br>Al</td>
            <td class="yellow">14<br>Si</td>
            <td class="yellow">15<br>P</td>
            <td class="yellow">16<br>S</td>
            <td class="yellow">17<br>Cl</td>
            <td class="yellow">18<br>Ar</td>
        </tr>
        <tr>
            <td class="red">19 <br> K</td>
            <td class="red">20 <br> Ca</td>
            <td></td>
            <td class="blue">21 <br> Sc</td>
            <td class="blue">22 <br> Ti</td>
```



```
            <td class="blue">23 <br> V</td>
            <td class="blue">24 <br> Cr</td>
            <td class="blue">25 <br> Mn</td>
            <td class="blue">26 <br> Fe</td>
            <td class="blue">27 <br> Co</td>
            <td class="blue">28 <br> Ni</td>
            <td class="blue">29 <br> Cu</td>
            <td class="blue">30 <br> Zn</td>
            <td class="yellow">31 <br> Ga</td>
            <td class="yellow">32 <br> Ge</td>
            <td class="yellow">33 <br> As</td>
            <td class="yellow">34 <br> Se</td>
            <td class="yellow">35<br> Br</td>
            <td class="yellow">36<br> Kr</td>
        </tr>
        <tr>
            <td class="red">37<br> Rb</td>
            <td class="red">38<br> Sr</td>
            <td></td>
            <td class="blue">39<br> Y</td>
            <td class="blue">40<br> Zr</td>
            <td class="blue">41<br> Nb</td>
            <td class="blue">42<br> Mo</td>
            <td class="blue">43<br> Tc</td>
            <td class="blue">44<br> Ru</td>
            <td class="blue">45<br> Rh</td>
            <td class="blue">46<br> Pd</td>
            <td class="blue">47<br> Ag</td>
            <td class="blue">48<br> Cd</td>
            <td class="yellow">49<br> In</td>
            <td class="yellow">50<br> Sn</td>
            <td class="yellow">51<br> Sb</td>
            <td class="yellow">52<br> Te</td>
            <td class="yellow">53<br> I</td>
            <td class="yellow">54<br> Xe</td>
        </tr>
        <tr>
            <td class="red">55 <br> Cs</td>
            <td class="red">56 <br> Ba</td>
            <td></td>
            <td class="blue">71<br> Lu</td>
            <td class="blue">72<br> Hf</td>
            <td class="blue">73<br> Ta</td>
            <td class="blue">74<br> W</td>
            <td class="blue">75<br> Re</td>
            <td class="blue">76<br> Os</td>
            <td class="blue">77<br> Ir</td>
```



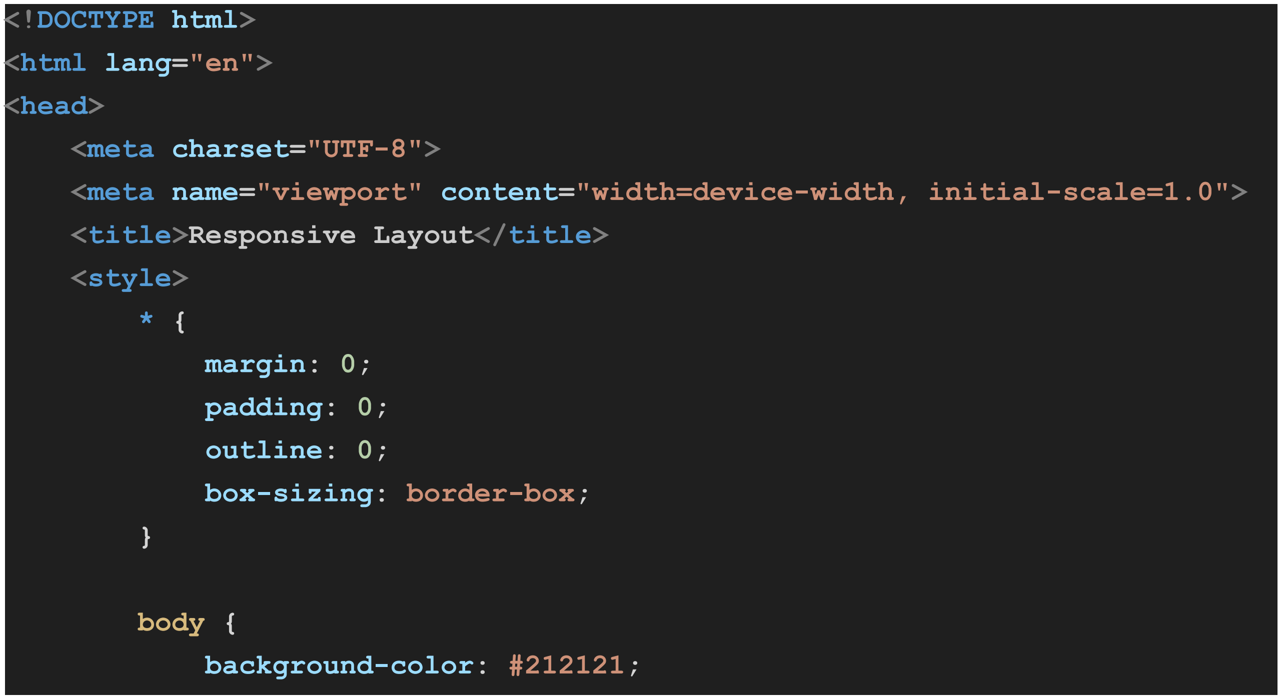
```
        <td class="blue">78<br> Pt</td>
        <td class="blue">79<br> Au</td>
        <td class="blue">80<br> Hg</td>
        <td class="yellow">81<br> Ti</td>
        <td class="yellow">82<br> Pb</td>
        <td class="yellow">83<br> Bi</td>
        <td class="yellow">84<br> Po</td>
        <td class="yellow">85<br> At</td>
        <td class="yellow">86<br> Rn</td>
    </tr>
    <tr>
        <td class="red">87 <br> Fr</td>
        <td class="red">88 <br> Ra</td>
        <td></td>
        <td class="blue">103 <br> Lr</td>
        <td class="blue">104 <br> Rf</td>
        <td class="blue">105 <br> Db</td>
        <td class="blue">106 <br> Sg</td>
        <td class="blue">107 <br> Bh</td>
        <td class="blue">108 <br> Hs</td>
        <td class="blue">109 <br> Mt</td>
        <td class="blue">110 <br> Ds</td>
        <td class="blue">111 <br> Rg</td>
        <td class="blue">112 <br> Cn</td>
        <td class="yellow">113 <br> Nh</td>
        <td class="yellow">114 <br> Fi</td>
        <td class="yellow">115 <br> Mc</td>
        <td class="yellow">116 <br> Lv</td>
        <td class="yellow">117 <br> Ts</td>
        <td class="yellow">118 <br> Og</td>
    </tr>
    <tr>
        <td colspan="19"></td>
    </tr>
    <tr>
        <td colspan="3"></td>
        <td class="green">57 <br> La</td>
        <td class="green">58 <br> Ce</td>
        <td class="green">59 <br> Pr</td>
        <td class="green">60 <br> Nd</td>
        <td class="green">61 <br> Pm</td>
        <td class="green">62 <br> Sm</td>
        <td class="green">63 <br> Eu</td>
        <td class="green">64 <br> Gd</td>
        <td class="green">65 <br> Tb</td>
        <td class="green">66 <br> Dy</td>
        <td class="green">67 <br> Ho</td>
```



```
            <td class="green">68 <br> Er</td>
            <td class="green">69 <br> Tm</td>
            <td class="green">70 <br> Yb</td>
        </tr>
        <tr>
            <td colspan="3"></td>
            <td class="green">89 <br> Ac</td>
            <td class="green">90 <br> Th</td>
            <td class="green">91 <br> Pa</td>
            <td class="green">92 <br> U</td>
            <td class="green">93 <br> Np</td>
            <td class="green">94 <br> Pu</td>
            <td class="green">95 <br> Am</td>
            <td class="green">96 <br> Cm</td>
            <td class="green">97 <br> Bk</td>
            <td class="green">98 <br> Cf</td>
            <td class="green">99 <br> Es</td>
            <td class="green">100 <br> Fm</td>
            <td class="green">101 <br> Md</td>
            <td class="green">102 <br> No</td>
        </tr>
    </table>
</body>
</html>
```

Q.10 Build Responsive Layout both desktop and mobile and Tablet, see below image for reference ?

Ans -



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Responsive Layout</title>
    <style>
        * {
            margin: 0;
            padding: 0;
            outline: 0;
            box-sizing: border-box;
        }

        body {
            background-color: #212121;
        }

        .container {
            padding: 20px;
        }

        .navbar {
            display: flex;
            align-items: center;
            gap: 20px;
        }

        .navbar .box1 {
            height: 10vh;
            width: 30%;
            background-color: #00b7ff;
        }

        .navbar .box2 {
            height: 10vh;
            width: 70%;
            background-color: #c1c1c1;
        }

        .main {
            margin: 20px 0;
            height: 40vh;
            width: 100%;
            background-color: #808080;
        }

        .cards {
            display: flex;
            align-items: center;
            justify-content: space-between;
            gap: 20px;
        }

        .cards .card {
            height: 30vh;
            width: 33.33vw;
            background-color: #87ceeb;
        }

        .footer {
            height: 30vh;
            width: 100%;
            background-color: #c1c1c1;
            margin-top: 20px;
        }

        @media screen and (max-width: 500px) {
            .cards {
                flex-direction: column;
            }

            .cards .card {
                height: 20vh;
                width: 100%;
            }
        }
    </style>
</head>

<body>
    <div class="container">
        <div class="navbar">
            <div class="box1"></div>
            <div class="box2"></div>
        </div>

        <div class="main">
        </div>

        <div class="cards">
            <div class="card"></div>
            <div class="card"></div>
            <div class="card"></div>
        </div>

        <div class="footer">
        </div>
    </div>
</body>

</html>
```