Tutorial No. 05

Title: Flexible Content Layout and Responsive Webpage

(Autonomous College Affiliated to University of Mumbai)

Batch: B2   **Roll No.: 1914078**   **Tutorial No.: 5**

Aim: To design flexible content layout and responsive webpages

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Resources needed: Notepad++, Web Browser

Theory:

Responsive Web Design-The goal of a responsive layout is to function well on every single device. Regardless of screen size or resolution, your responsive designs should always be useable.

Focus on usability for every single aspect of your site. This may be easier starting with mobile-first because you're designing for limited features, then moving up to desktop which supports a wider screen size.

Flex Layout Model- CSS3 flexible Box, or flexbox is a new layout model for creating the more flexible user interface design with multiple rows and columns without using the percentage or fixed length values. The CSS3 flex layout model provides a simple and powerful mechanism for handling the distributing of space and alignment of content automatically through stylesheet without interfering the actual markup.

Activity

Add grid layout, flex container and responsive property to the webpages

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Results: (Program printout with output):

Code:
HTML CODE:
```
<!DOCTYPE html>
<html lang="en">
<head>
    <link rel="stylesheet" href="styles.css">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Tutorial- 5 CSS Responsive</title>
</head>
<body>
    <h3 style="text-align: center;">CSS Viewport and Media Queries </h3>
```

```
<div class="header">
  <h1 style="text-align: center;">Tours and Travel Website</h1>
</div>

<div class="row">
  <div class="col-3 menu">
   <ul>
     <li>Home</li>
     <li>Gallery</li>
     <li>Login</li>
     <li>Sign-Up</li>
   </ul>
  </div>

  <div class="col-6">
   <h1>About Us</h1>
     <p>A package tour, package vacation, or package holiday comprises transport and
accommodation advertised and sold together by a vendor known as a tour operator. Other
services may be provided such a rental car, activities or outings during the holiday. Transport
can be via automobile, buses, charter airline, and may also include travel between areas as
part of the holiday. Package holidays are a form of product bundling.Package holidays are
organised by a tour operator and sold to a consumer by a travel agent. Some travel agents are
employees of tour operators, others are independent.</p>
   </div>
   <div class="col-3 right">
     <div class="aside">
       <h2>Group Tours</h2>
       <p>Travel Package for an assembly of travellers with common itenary, travel date
and transportation.</p>
       <h2>Speciality Tours</h2>
       <p>This is a kind of adventure tourism to explore new cultures and societies.</p>
       <h2>Cruises</h2>
       <p>Travel in a Cruise ship and explore magestic cities and ports!</p>
     </div>
   </div>
 </div>

 <div class="footer">
   <p>Resize the browser window to see how the content respond to the resizing.</p>
 </div>

 <h3 style="text-align: center;">CSS Flexbox </h3>
```

```
<h4 style="text-align: left;">Flex-Direction</h4>
<div class="flex-container">
  <div>1</div>
  <div>2</div>
  <div>3</div>
</div>

<h4 style="text-align: left;" style="flex-wrap: wrap;">Flex-Wrap</h4>
<div class="flex-container1">
<div>1</div>
<div>2</div>
<div>3</div>
<div>4</div>
<div>5</div>
<div>6</div>
<div>7</div>
<div>8</div>
<div>9</div>
<div>10</div>
<div>11</div>
<div>12</div>
</div>

<h4 style="text-align: left;">Flex-Order Property</h4>

<div class="flex-container">
 <div style="order: 3">1</div>
 <div style="order: 2">2</div>
 <div style="order: 4">3</div>
 <div style="order: 5">4</div>
 <div style="order: 1">5</div>
</div>

<h4 style="text-align: left;">Flex-Grow Property</h4>
<div class="flex-container1">
 <div style="flex-grow: 1">1</div>
 <div style="flex-grow: 1">2</div>
 <div style="flex-grow: 4">3</div>
 <div style="flex-grow: 8">4</div>
```

```
</div>

<h4 style="text-align: left;">Flex-Shrink Property</h4>
<div class="flex-container1" style="align-items: stretch;">
 <div>1</div>
 <div>2</div>
 <div style="flex-shrink: 0">3</div>
 <div>4</div>
 <div>5</div>
 <div style="flex-shrink: 0">6</div>
 <div>7</div>
 <div>8</div>
 <div>9</div>
 <div>10</div>
</div>


<h4 style="text-align: left;">Flex-Basis Property</h4>
<div class="flex-container1"  style="align-items: stretch;">
 <div>1</div>
 <div>2</div>
 <div style="flex-basis: 200px">3</div>
 <div>4</div>
</div>



<h4 style="text-align: left;">Flex-Align-Self Property</h4>

<div class="flex-container1" style="height: 200px;">
 <div>1</div>
 <div style="align-self: flex-start">2</div>
 <div style="align-self: flex-end">3</div>
 <div>4</div>
</div>

<h3 style="text-align: center;">CSS Grid Container</h3>

<h4 style="text-align: left;">Grid</h4>
<div class="grid-container" style="grid-template-columns: auto auto auto auto;">
 <div>1</div>
 <div>2</div>
```

```
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>

<h4 style="text-align: left;">Grid with Size Variation</h4>
<div class="grid-container" style=" grid-template-columns: 80px 200px auto 40px;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>

<h4 style="text-align: left;">Grid Template Variation</h4>
<div class="grid-container" style=" grid-template-rows: 80px 200px;  grid-template-
columns: auto auto auto;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>

<h4 style="text-align: left;">Grid Justify Content-Space Evenly</h4>
<div class="grid-container" style="justify-content: space-evenly; grid-template-columns:
auto auto auto;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
```

```
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>


<h4 style="text-align: left;">Grid Justify Content-Space Around</h4>
<div class="grid-container" style="justify-content: space-around; grid-template-columns:
auto auto auto;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>


<h4 style="text-align: left;">Grid Justify Content-Space Between</h4>
<div class="grid-container" style="justify-content: space-around; grid-template-columns:
50px 50px 50px;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>


<h4 style="text-align: left;">Grid Justify Content-Start</h4>
<div class="grid-container" style="justify-content: start; grid-template-columns: 50px
50px 50px;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
```

```
  <div>8</div>
</div>



<h4 style="text-align: left;">Grid Justify Content-End</h4>
<div class="grid-container" style="justify-content: end; grid-template-columns: 50px 50px 50px;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>



<h4 style="text-align: left;">Grid-Align Content</h4>
<div class="grid-container" style="height: 400px; align-content: center; grid-template-columns: auto auto auto;">
  <div>1</div>
  <div>2</div>
  <div>3</div>
  <div>4</div>
  <div>5</div>
  <div>6</div>
  <div>7</div>
  <div>8</div>
</div>

<h3 style="text-align: center;">CSS Grid Item</h3>

<h4 style="text-align: left;">Grid Column Property</h4>
<div class="grid-container" style="grid-template-columns: auto auto auto auto;">
  <div class="item1">1</div>
  <div class="item2">2</div>
  <div class="item3">3</div>
  <div class="item4">4</div>
  <div class="item5">5</div>
```

```html
      <div class="item6">6</div>
      <div class="item7">7</div>
      <div class="item8">8</div>
      <div class="item9">9</div>
    </div>

    <h4 style="text-align: left;">Grid Row Property</h4>
    <div class="grid-container" style="grid-template-columns: auto auto auto auto;">
      <div class="item1r">1</div>
      <div>2</div>
      <div class="item3">3</div>
      <div class="item4">4</div>
      <div class="item5">5</div>
      <div class="item6">6</div>
      <div class="item7">7</div>
      <div>8</div>
      <div class="item9">9</div>
    </div>

    <h4 style="text-align: left;">Grid Area Property</h4>
    <div class="grid-container" style="grid-template-columns: auto auto auto auto;">
      <div>1</div>
      <div>2</div>
      <div class="item3">3</div>
      <div class="item4">4</div>
      <div class="item5">5</div>
      <div class="item6">6</div>
      <div class="item7">7</div>
      <div class="item8">8</div>
      <div class="item9">9</div>
      <div class="item10">10</div>
    </div>
  </body>
</html>
```

STYLES.CSS CODE:

```css
* {
  box-sizing: border-box;
}

.row::after {
  content: "";
  clear: both;
  display: table;
}

[class*="col-"] {
  float: left;
  padding: 15px;
}

html {
  font-family: "Lucida Sans", sans-serif;
}

.header {
  background-color:crimson;
  color: #ffffff;
  padding: 15px;
}

.menu ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
}

.menu li {
  padding: 8px;
  margin-bottom: 7px;
  background-color:purple;
  color: #ffffff;
  box-shadow: 0 1px 3px rgba(0,0,0,0.12), 0 1px 2px rgba(0,0,0,0.24);
}

.menu li:hover {
  background-color:purple;
}

.aside {
  background-color: purple;
  padding: 15px;
  color: #ffffff;
  text-align: center;
  font-size: 14px;
```

```css
  box-shadow: 0 1px 3px rgba(0,0,0,0.12), 0 1px 2px rgba(0,0,0,0.24);
}

.footer {
  background-color:orange;
  color: #ffffff;
  text-align: center;
  font-size: 12px;
  padding: 15px;
}

/* For mobile phones: */
[class*="col-"] {
  width: 100%;
}
@media only screen and (min-width: 600px) {
  /* For tablets: */
  .col-s-1 {width: 8.33%;}
  .col-s-2 {width: 16.66%;}
  .col-s-3 {width: 25%;}
  .col-s-4 {width: 33.33%;}
  .col-s-5 {width: 41.66%;}
  .col-s-6 {width: 50%;}
  .col-s-7 {width: 58.33%;}
  .col-s-8 {width: 66.66%;}
  .col-s-9 {width: 75%;}
  .col-s-10 {width: 83.33%;}
  .col-s-11 {width: 91.66%;}
  .col-s-12 {width: 100%;}
}

@media only screen and (min-width: 768px) {
  /* For desktop: */
  .col-1 {width: 8.33%;}
  .col-2 {width: 16.66%;}
  .col-3 {width: 25%;}
  .col-4 {width: 33.33%;}
  .col-5 {width: 41.66%;}
  .col-6 {width: 50%;}
  .col-7 {width: 58.33%;}
  .col-8 {width: 66.66%;}
  .col-9 {width: 75%;}
  .col-10 {width: 83.33%;}
  .col-11 {width: 91.66%;}
  .col-12 {width: 100%;}
}

/*The website gets a background colour of lightblue when orientation is landscape.  */
  @media only screen and (orientation: landscape) {
  body {
```

```
    background-color: lightblue;
   }
  }

  /* If the screen size is 601px or more, set the font-size of <div> to 80px */
@media only screen and (min-width: 601px) {
  div.example {
    font-size: 80px;
  }
}

/* If the screen size is 600px or less, set the font-size of <div> to 30px */
@media only screen and (max-width: 600px) {
  div.example {
    font-size: 30px;
  }
}

.flex-container {
  display: flex;
  flex-direction: column;
  justify-content: center;
  background-color: DodgerBlue;
}

.flex-container1 {
  display: flex;
  background-color: DodgerBlue;
}

.flex-container > div {
  background-color: #f1f1f1;
  width: 100px;
  margin: 10px;
  text-align: center;
  line-height: 75px;
  font-size: 30px;
}

.flex-container1 > div {
  background-color: #f1f1f1;
  width: 100px;
  margin: 10px;
  text-align: center;
  line-height: 75px;
  font-size: 30px;
}

.grid-container {
  display: grid;
```

```
  grid-gap: 10px;
  background-color: #2196F3;
  padding: 10px;
}

.grid-container > div {
  background-color: rgba(255, 255, 255, 0.8);
  text-align: center;
  padding: 20px 0;
  font-size: 30px;
}

.item1 {
  grid-column: 1 / 5;
}

.item1r {
  grid-row: 1 / 4;
}

.item2 {
  grid-column: 2 / span 3;
}

.item8 {
  grid-area: 1 / 2 / 5 / 6;
}
```
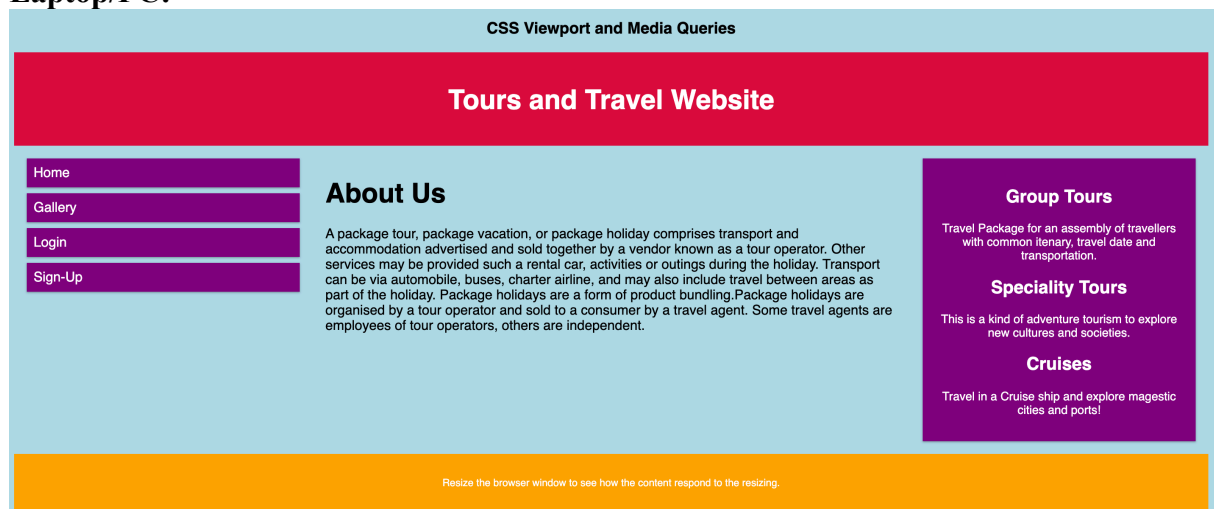
OUTPUT:

1. **CSS RESPONSIVE- VIEWPORTS AND MEDIA QUERIES**

Laptop/PC:

Tablet:

CSS Viewport and Media Queries

Tours and Travel Website

Home

Gallery

Login

Sign-Up

About Us

A package tour, package vacation, or package holiday comprises transport and accommodation advertised and sold together by a vendor known as a tour operator. Other services may be provided such a rental car, activities or outings during the holiday. Transport can be via automobile, buses, charter airline, and may also include travel between areas as part of the holiday. Package holidays are a form of product bundling.Package holidays are organised by a tour operator and sold to a consumer by a travel agent. Some travel agents are employees of tour operators, others are independent.

Group Tours

Travel Package for an assembly of travellers with common itenary, travel date and transportation.

Speciality Tours

This is a kind of adventure tourism to explore new cultures and societies.

Cruises

Travel in a Cruise ship and explore magestic cities and ports!

Resize the browser window to see how the content respond to the resizing.

Mobile phones: (Change in background color as we go from Tablet size to Phone)

CSS Viewport and Media Queries

Tours and Travel Website

Home

Gallery

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About Us

A package tour, package vacation, or package holiday comprises transport and accommodation advertised and sold together by a vendor known as a tour operator. Other services may be provided such a rental car, activities or outings during the holiday. Transport can be via automobile, buses, charter airline, and may also include travel between areas as part of the holiday. Package holidays are a form of product bundling.Package holidays are organised by a tour operator and sold to a consumer by a travel agent. Some travel agents are employees of tour operators, others are independent.

Group Tours

Travel Package for an assembly of travellers with common itenary, travel date and transportation.

Speciality Tours

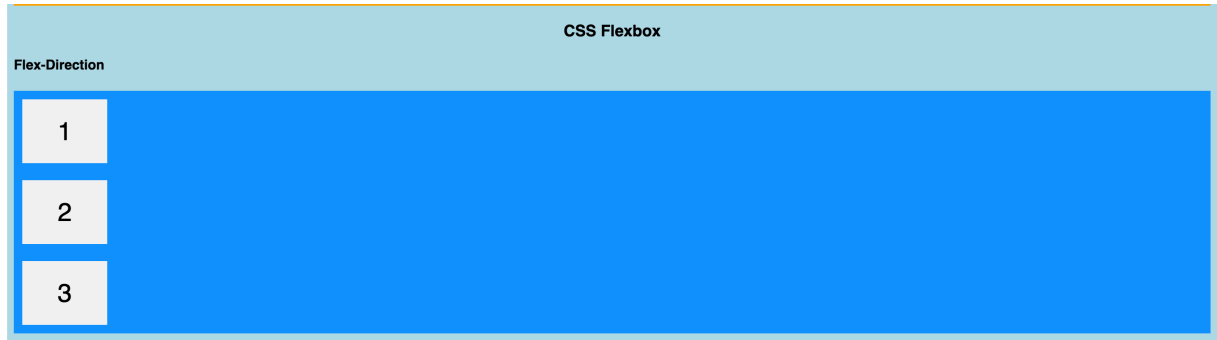This is a kind of adventure tourism to explore new cultures and societies.

Cruises

Travel in a Cruise ship and explore magestic cities and ports!

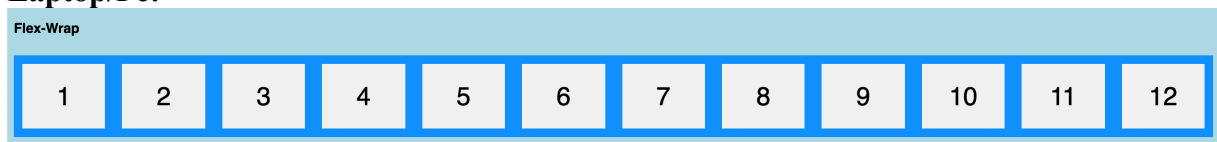Resize the browser window to see how the content respond to the resizing.

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CSS Flexbox:

Flex Direction-

Flex Wrap-

Laptop/Pc:

Mobile:

Flex-Order Property:

Flex-grow, Flex- Shrink and Flex-Basis Property:
Laptop/Pc:

Flex-Grow Property

1	2	3	4

Flex-Shrink Property

1	2	3	4	5	6	7	8	9	10

Flex-Basis Property

1	2	3	4

Mobile Phone:

Flex-Grow Property

1	2	3	4

Flex-Shrink Property

1	2	3	4	5	6	7	8	9	10

Flex-Basis Property

1	2	3	4

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Flex-Align Self Property:

Flex-Align-Self Property

1	2		4
		3	
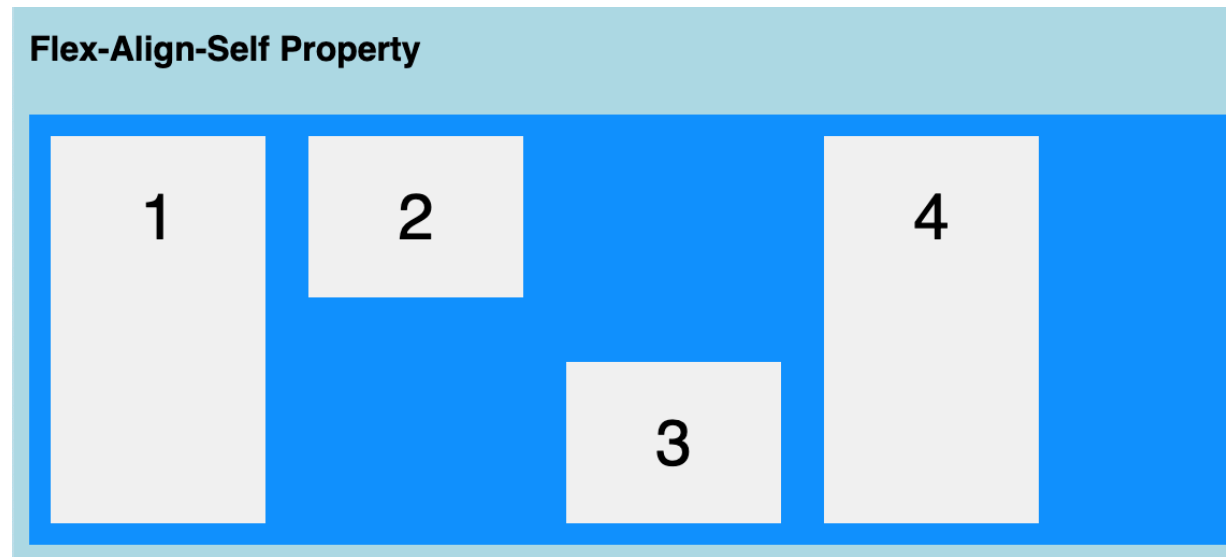
CSS Grid:

Normal Grid:

Grid

1	2	3	4
5	6	7	8

Grid with Size and Template Variation:

Grid with Size Variation

1	2	3	4
5	6	7	8

Grid Template Variation

1	2	3
4	5	6
7	8	

Grid Justify Content-Space evenly, Space around, Space between:

Grid Justify Content-Start ,End:

Grid Align Content:

Grid-Align Content		
1	2	3
4	5	6
7	8	

Grid Item- Column Property:

CSS Grid Item

Grid Column Property

	8	
1		
	2	3
4	5	6	7	9

Grid Item- Row Property:

Grid Row Property

1	2	3	4
	5	6	7
	8	9	

Grid Item- Area Property:

Grid Area Property

1	8
2	
3	
4	
5	6	7	9	10

Outcomes:

CO-2: Create Web pages using HTML 5 and CSS .

Conclusion: (Conclusion to be based on the outcomes achieved):
Through this experiment we learnt to design flexible content layout and responsive Webpages using CSS-3. All the features such as CSS Viewport and Media queries ,CSS Flexbox and CSS grid were implemented and all the attributes given in W3Schools were used in performing the experiment.

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of faculty in-charge with date

References:

Books/ Journals/ Websites:
- "Web technologies: Black Book", Dreamtech Publications
- http://www.w3schools.com
- https://css-tricks.com/snippets/css/complete-guide-grid/

https://css-tricks.com/snippets/css/a-guide-to-flexbox/