Experiment No. 03

Title: Create flexible content layout using CSS3.

Batch:B1   **Roll No.:16010420133**   **Experiment No.: 3**

Aim: To apply basic CSS and flexible content layout using CSS3 to your website..

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Resources needed: need to fill by students

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Theory:

Cascading Style Sheets (**CSS**) is a style sheet language used for describing the presentation of a document written in a markup language.HTML was NEVER intended to contain tags for formatting a web page.HTML was created to **describe the content** of a web page. CSS is designed primarily to enable the separation of document content from document presentation, including aspects such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple HTML pages to share formatting by specifying the relevant CSS in a separate .css file, and reduce complexity and repetition in the structural content. The file should not contain any html tags. The style sheet file must be saved with a .css extension.
CSS has various levels and profiles like CSS1, CSS2, CSS3, CSS4.
There are three ways of inserting a style sheet:
   · External style sheet
   · Internal style sheet
   · Inline style

External Style Sheet
Each page must include a reference to the external style sheet file inside the <link> element. The <link> element goes inside the <head> section of html page. An external style sheet is ideal when the style is applied to many pages.

Internal Style Sheet
An internal style sheet may be used if one single page has a unique style.Internal styles are defined within the <style> element, inside the<head> section of an HTML page

Inline Styles
An inline style may be used to apply a unique style for a single element.To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

CSS Rule-Set
A CSS rule-set consists of a selector and a declaration block:
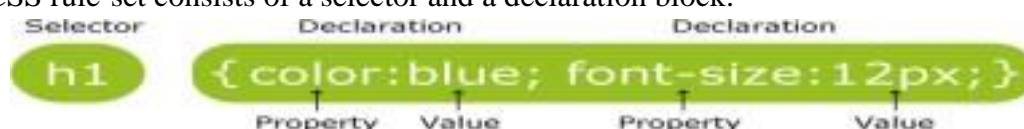
Eg:-

```
p {
 text-align: center;
 color: red;
}
```
    Here p stands for paragraph element.

CSS Colors and Backgrounds

Colors can be applied by using colors and background-color. Colors are displayed combining RED, GREEN, and BLUE light.The CSS background properties are used to define the background effects for elements.

CSS Margin and Padding Properties.

The CSS margin properties are used to generate space around elements. Margin is the space outside something whereas padding is the space inside something. The margin properties set the size of the white space OUTSIDE the border.The CSS padding properties are used to generate space around content.The padding properties set the size of the white space between the element content and the element border.

CSS Dimension Properties

The CSS dimension properties allow you to control the height and width of an element.

Navigation Bars

Having easy-to-use navigation is important for any web site.With CSS you can transform boring HTML menus into good-looking navigation bars.
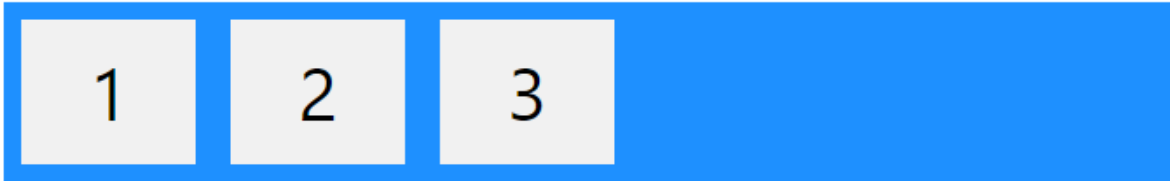
CSS Flexbox Layout

The Flexible Box Layout Module makes it easier to design flexible responsive layout structure without using float or positioning.

The flexbox properties are supported in all modern browsers.

29.0	11.0	22.0	10	48

Flexbox Elements

To start using the Flexbox model, you need to first define a flex container.

The element above represents a flex container (the blue area) with three flex items.

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
.flex-container {
  display: flex;
  background-color: DodgerBlue;
}

.flex-container > div {
  background-color: #f1f1f1;
  margin: 10px;
  padding: 20px;
  font-size: 30px;
}
</style>
</head>
<body>

<div class="flex-container">
  <div>1</div>
  <div>2</div>
  <div>3</div>
</div>

<p>A Flexible Layout must have a parent element with the <em>display</em> property set
to <em>flex</em>.</p>

<p>Direct child elements(s) of the flexible container automatically becomes flexible
items.</p>

</body>
</html>
```

Output

A Flexible Layout must have a parent element with the *display* property set to *flex*.

Direct child elements(s) of the flexible container automatically becomes flexible items.

The CSS Flexbox Container Properties

The following table lists all the CSS Flexbox Container properties:

Property	Description
align-content	Modifies the behavior of the flex-wrap property. It is similar to align-items, but instead of aligning flex items, it aligns flex lines
align-items	Vertically aligns the flex items when the items do not use all available space on the cross-axis
display	Specifies the type of box used for an HTML element
flex-direction	Specifies the direction of the flexible items inside a flex container
flex-flow	A shorthand property for flex-direction and flex-wrap
flex-wrap	Specifies whether the flex items should wrap or not, if there is not enough room for them on one flex line
justify-content	Horizontally aligns the flex items when the items do not use all available space on the main-axis

The CSS Flexbox Items Properties

The following table lists all the CSS Flexbox Items properties:

Property	Description
align-self	Specifies the alignment for a flex item (overrides the flex container's align-items property)
flex	A shorthand property for the flex-grow, flex-shrink, and the flex-basis properties
flex-basis	Specifies the initial length of a flex item
flex-grow	Specifies how much a flex item will grow relative to the rest of the flex items inside the same container
flex-shrink	Specifies how much a flex item will shrink relative to the rest of the flex items inside the same container
order	Specifies the order of the flex items inside the same container

Responsive Flexbox

Laptop and Desktops:

| 1 | 2 | 3 |

Mobile phones and Tablets:

| 1 |
| 2 |
| 3 |

For example, if you want to create a two-column layout for most screen sizes, and a one-column layout for small screen sizes (such as phones and tablets), you can change the flex-direction from row to column at a specific breakpoint (800px in the example below.

```css
.flex-container {
  display: flex;
  flex-direction: row;
}

/* Responsive layout - makes a one column layout instead of a two-column layout */
@media (max-width: 800px) {
  .flex-container {
    flex-direction: column;
  }
}
```

CSS Grid Layout Module

Header		
Menu	Main	Right
	Footer	
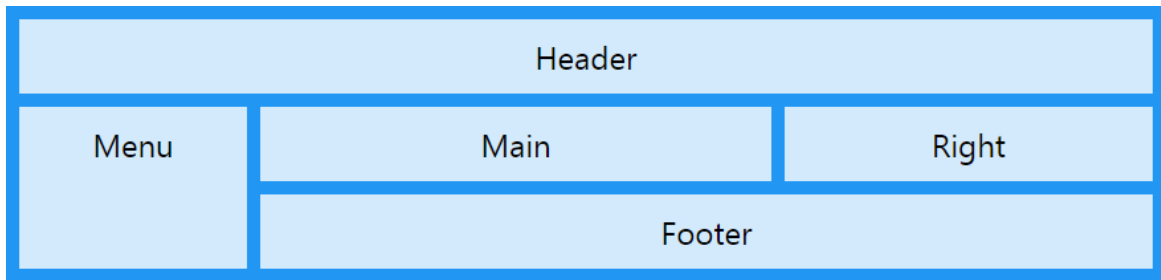
The CSS Grid Layout Module offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning.

All CSS Grid Properties

Property	Description
column-gap	Specifies the gap between the columns
gap	A shorthand property for the *row-gap* and the *column-gap* properties
grid	A shorthand property for the *grid-template-rows, grid-template-columns, grid-template-areas, grid-auto-rows, grid-auto-columns,* and the *grid-auto-flow* properties
grid-area	Either specifies a name for the grid item, or this property is a shorthand property for the *grid-row-start, grid-column-start, grid-row-end,* and *grid-column-end* properties
grid-auto-columns	Specifies a default column size
grid-auto-flow	Specifies how auto-placed items are inserted in the grid
grid-auto-rows	Specifies a default row size
grid-column	A shorthand property for the *grid-column-start* and the *grid-column-end* properties

grid-column-gap	Specifies the size of the gap between columns
grid-column-start	Specifies where to start the grid item
grid-gap	A shorthand property for the *grid-row-gap* and *grid-column-gap* properties
grid-row	A shorthand property for the *grid-row-start* and the *grid-row-end* properties
grid-row-end	Specifies where to end the grid item
grid-row-gap	Specifies the size of the gap between rows
grid-row-start	Specifies where to start the grid item
grid-template	A shorthand property for the *grid-template-rows*, *grid-template-columns* and *grid-areas* properties
grid-template-areas	Specifies how to display columns and rows, using named grid items
grid-template-columns	Specifies the size of the columns, and how many columns in a grid layout
grid-template-rows	Specifies the size of the rows in a grid layout
row-gap	Specifies the gap between the grid rows

Grid Container

To make an HTML element behave as a grid container, you have to set the display property to grid or inline-grid.

Grid containers consist of grid items, placed inside columns and rows.

A grid container contains grid items.

By default, a container has one grid item for each column, in each row, but you can style the grid items so that they will span multiple columns and/or rows.

Activity:
Design a website pages using CSS properties like Colors and Background-color,Lengths and percentages,Margin and padding,Borders,Navigation bars, flexbox layot, flexbox container and item properties, responsive flexbox ,CSS Grid ,Grid Container ,A grid container contains grid items.

Results: Display the designed web pages along with the code

```
<section id="bihar">
    <div class="title">
        <h1><strong>Bihar</strong></h1>
    </div>
    <article class="flex-columns">
        <div class="row">
          <div class="column">
            <div class="column-1">
                <img src="/images/Bihar/golghar.jpg" alt="">
            </div>
          </div>
        </div>
        <div class="column">
```

```
                <div class="column-2 bg-dark">
                    <h2>Golghar</h2>
                    <p class="meta">
                      <i class="fas fa-map-marker-alt"></i> Located In
<strong>Ashok Rajath, Patna</strong>
                    </p>
                    <p>Built back in 1786 under the commands of the erstwhile
Governor General of India, Warren Hastings, Golghar was aimed at serving as a
gigantic granary to store grains that can be utilized at the time of potential
famine.  However, the said purpose was never met and at present Golghar serves as
one of the famous historical monuments in Bihar. Resembling a beehive, this
building features no pillars, but a spiral staircase having 145 steps that take you
to the topmost part of the dome.</p>
                    <!-- <a href="post.html" class="btn btn-dark">
                      <i class="fas fa-chevron"></i>
                      Read More
                    </a> -->
                </div>
            </div>
          </div>
        </article>
        <article class="flex-columns flex-reverse">
          <div class="row">
            <div class="column">
              <div class="column-1">
                    <img src="/images/Bihar/SHERSHAR.jpg" alt="">
              </div>
            </div>
            <div class="column">
              <div class="column-2 bg-light">
                    <h2>Sher Shah Suri Tomb</h2>
                    <p class="meta">
                      <i class="fas fa-map-marker-alt"></i> Located In <strong>J P
Nagar, Laxkariganj, Sasaram</strong>
                    </p>
                    <p>Also known fondly as the 'Second Taj Mahal of India', the
Sher Shah Suri Tomb has its name among the most prominent historical monuments in
Bihar. Sheltering the mausoleum of Emperor Sher Shah Suri, this magnificent
monument is surrounded by a serene artificial lake on its three sides and is
connected to the mainland on one side. Made of red sandstone, this three-storied
mausoleum flaunts a spectacular Indo-Islamic style architectural design.</p>
                    <!-- <a href="post.html" class="btn btn-light">
                      <i class="fas fa-chevron"></i>
                      Read More
                    </a> -->
              </div>
            </div>
          </div>
        </article>
        <article class="flex-columns">
          <div class="row">
            <div class="column">
              <div class="column-1">
```

```
                    <img src="/images/Bihar/nalanda.jpg" alt="">
                  </div>
                </div>
                <div class="column">
                  <div class="column-2 bg-dark">
                    <h2>Nalanda Mahahvihara</h2>
                    <p class="meta">
                      <i class="fas fa-map-marker-alt"></i> Located In
<strong>Nalanda University Site Rd, Bargaon</strong>
                    </p>
                    <p>The Nalanda Mahavihara served as the top scholastic
institution of Buddhist learning for a period of 800 years. The university
flourished under the patronage of the Gupta dynasty and Emperor Harshavardhan and
started to decline in the 9th century when the Pala dynasty established 4 other
institutions of Buddhist education. The institution was totally ransacked by
Bakhtiyar Khilji in the 12th century. During its peak operational years, the
university sheltered 10,000 students from countries like China, Korea, and
Tibet.</p>
                    <!-- <a href="post.html" class="btn btn-dark">
                      <i class="fas fa-chevron"></i>
                      Read More
                    </a> -->
                  </div>
                </div>
              </div>
            </article>
            <article class="flex-columns flex-reverse">
              <div class="row">
                <div class="column">
                  <div class="column-1">
                    <img src="/images/Bihar/barabr.jpg" alt="">
                  </div>
                </div>
                <div class="column">
                  <div class="column-2 bg-light">
                    <h2>Barabar Caves</h2>
                    <p class="meta">
                      <i class="fas fa-map-marker-alt"></i> Located In
<strong>Barabar Hill Road, Barabar, Sultanpur</strong>
                    </p>
                    <p>Constructed during the Mauryan dynasty, these caves flaunt
the ancient Indian architectural style. One of the most surprising facts about the
Barabar Caves is that, if you shout inside the cave, the echo will last for several
seconds. Consisting of a total of 4 caves, the Barabar Caves features highly
polished interiors, which make them even more appealing. Believed to be found back
in 322 BCE to 185 BCE, this beautiful structure exhibits the brilliance of Indian
Rock Cut style of architecture.</p>
                    <!-- <a href="post.html" class="btn btn-light">
                      <i class="fas fa-chevron"></i>
                      Read More
                    </a> -->
                  </div>
                </div>
```

```html
          </div>
        </article>
        <article class="flex-columns">
          <div class="row">
            <div class="column">
              <div class="column-1">
                <img src="/images/Bihar/choti.jpg" alt="">
              </div>
            </div>
            <div class="column">
              <div class="column-2 bg-dark">
                <h2>Chhoti Dargah</h2>
                <p class="meta">
                  <i class="fas fa-map-marker-alt"></i> Located In
<strong>Maner</strong>
                </p>
                <p>Lying 80 kilometers away from Patna, the 3-storied tomb of
Chhoti Dargah is known popularly as one of the brilliantly architectured historical
monuments in Bihar. Also referred to as 'Maner Sharif', this dargah happens to be
the mausoleum of the renowned Sufi saint, Makhdoom Shah Daulat.</p>
                <!-- <a href="post.html" class="btn btn-dark">
                  <i class="fas fa-chevron"></i>
                  Read More
                </a> -->
              </div>
            </div>
          </div>
        </article>
    </section>


----------------------------------------------------------------------
*{
  font-family:'Times New Roman';
}
* {
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}
/* Overall */
html,body {
    font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
    line-height: 1.7em;
}
body {
    background: #f9f7f2;
    color: #00203fff;
    padding-top: 70px;
  }
  ul {
    list-style: none;
  }
```

```css
a {
  color: #fdde44ff;
  text-decoration: none;
}

h1, h2 {
  font-weight: 300;
  line-height: 1.2;
}

p {
  margin: 10px;
}
/* Navbar */
.navbar {
  display: flex;
  align-items: center;
  justify-content: space-between;
  background-color: rgb(54,8,2);
  color: #fdde44ff;
  width: 100%;
  height: 70px;
  position: fixed;
  top: 0px;
  padding: 0 50px;
  transition: 0.5s;
  overflow: auto;
}

.navbar ul {
  display: flex;
}
.navbar ul li {
  margin: 0px 5px;
  padding: 5px;
}
.navbar li a {
  padding: 20px 30px;
}
.navbar li a:hover{
  background-color: #28334AFF;
}
.navbar li a.current {
  border-bottom: #fdde44ff solid 2px;
}
.navbar li a.current:hover .down {
  transform: rotate(-135deg);
  -webkit-transform: rotate(-135deg);
}
.navbar li a.current:hover{
  background-color: #00203fff;
}
```

```css
/* Dropdown */
.arrow {
  border: solid #fdde44ff;
  border-width: 0 3px 3px 0;
  display: inline-block;
  padding: 3px;
}
.down {
  transform: rotate(45deg);
  -webkit-transform: rotate(45deg);
}
/* .dropdown {
  position: relative;
  display: inline-block;
} */
.dropdown {
  float: left;
  overflow: hidden;
}
/* .dropdown-content {
  float: left;
  display: none;
  position:fixed;
  min-width: 160px;
  z-index: 1;
} */
.dropdown-content {
  display: none;
  position: fixed;
  background-color: rgb(5, 79, 58);
  width: 100%;
  left: 0;
  z-index: 1;
}

.columns {
  float: left;
  width: 14.25%;
  padding: 10px;
  background-color: #ccc;
  height: 250px;
}

.dropdown-content a {
  color: #fdde44ff;
  padding: 10px 10px;
  text-decoration: none;
  display: block;
  background-color: rgb(5, 79, 58);
}
.dropdown:hover .dropdown-content {
  display: block;
}
}
```

```css
.dropdown:hover .down {
  transform: rotate(-135deg);
  -webkit-transform: rotate(-135deg);
}
/* State Name */
.title {
    padding: 50px;
}
.title h1 {
    font-size: 34px;
    text-align: center;
}
/* State Monument */
.flex-columns.flex-reverse .row {
  flex-direction: row-reverse;
}

.flex-columns .row {
  display: flex;
  flex-direction: row;
  flex-wrap: wrap;
  width: 100%;
}

.flex-columns .column {
  display: flex;
  flex-direction: column;
  flex-basis: 100%;
  flex: 1;
}

.flex-columns .column .column-1,
.flex-columns .column .column-2 {
  height: 100%;
}

.flex-columns img {
  width: 100%;
  height: 100%;
  object-fit: cover;
}

.flex-columns .column-2 {
  display: flex;
  flex-direction: column;
  align-items: flex-start;
  justify-content: center;
  padding: 30px;
}

.flex-columns h2 {
  font-size: 40px;
  font-weight: 100;
```

```css
  }

  .flex-columns h4 {
    margin-bottom: 10px;
  }

  .flex-columns p {
    margin: 20px 0;
  }

  .bg-dark {
      background-color: #00203fff;
      color: #b89535;
  }
  .bg-light {
      background-color: #f9f7f2;
      color: #00203fff;
  }
  .meta {
  margin-bottom: 30px;
}
/* .bg-dark a {
    padding: 5px 10px 5px 10px;
    border: #fdde44ff solid 2px ;
    border-radius: 15px;
  }
  .bg-dark a:hover {
      background-color: #fdde44ff;
      color: #00203fff;
    }
    .bg-light a {
        padding: 5px 10px 5px 10px;
        background-color: #fdde44ff;
        color: #00203fff;
        border-radius: 15px;
    }
    .bg-light a:hover {
        background-color: #00203fff;
        color: #fdde44ff;
      } */

  /* Footer */
  .footer {
    text-align: center;
    height: 200px;
    background-color: #00203fff;
  }


.footer a {
  color: #b89535;
}
```

```
.footer a:hover {
  color: #00203fff;
}
.footer p {
  color: #b89535;
  padding: 0px 20px 40px 20px;

}

.footer .social > * {
  margin-right: 30px;
}
```

Bihar

Golghar

📍 Located In **Ashok Rajath, Patna**

Built back in 1786 under the commands of the erstwhile Governor General of India, Warren Hastings, Golghar was aimed at serving as a gigantic granary to store grains that can be utilized at the time of potential famine. However, the said purpose was never met and at present Golghar serves as one of the famous historical monuments in Bihar. Resembling a beehive, this building features no pillars, but a spiral staircase having 145 steps that take you to the topmost part of the dome.

Sher Shah Suri Tomb

📍 Located In **J P Nagar, Laxkariganj, Sasaram**

Also known fondly as the 'Second Taj Mahal of India', the Sher Shah Suri Tomb has its name among the most prominent historical monuments in Bihar. Sheltering the mausoleum of Emperor Sher Shah Suri, this magnificent monument is surrounded by a serene artificial lake on its three sides and is connected to the mainland on one side. Made of red sandstone, this three-storied mausoleum flaunts a spectacular Indo-Islamic style architectural design.

Nalanda Mahahvihara

📍 Located In **Nalanda University Site Rd, Bargaon**

The Nalanda Mahavihara served as the top scholastic institution of Buddhist learning for a period of 800 years. The university flourished under the patronage of the Gupta dynasty and Emperor Harshavardhan and started to decline in the 9th century when the Pala dynasty established 4 other institutions of Buddhist education. The institution was totally ransacked by Bakhtiyar Khilji in the 12th century. During its peak operational years, the university sheltered 10,000 students from countries like China, Korea, and Tibet.

Barabar Caves

📍 Located In **Barabar Hill Road, Barabar, Sultanpur**

Constructed during the Mauryan dynasty, these caves flaunt the ancient Indian architectural style. One of the most surprising facts about the Barabar Caves is that, if you shout inside the cave, the echo will last for several seconds. Consisting of a total of 4 caves, the Barabar Caves features highly polished interiors, which make them even more appealing. Believed to be found back in 322 BCE to 185 BCE, this beautiful structure exhibits the brilliance of Indian Rock Cut style of architecture.

Outcomes:

Questions:

1. Describe how the application of cascading style sheet effects web page?
• Dynamic Website Templates can be created and handled by uses of CSS in the HTML framework and it basically helps while adding and editing web pages and elements to the web server and sites. By adding CSS extension to the concerned HTML pages and incorporating the same with the server-side templates, it makes easier to handle the dynamically allocated elements. So, using these templates the handling of dynamic elements can be more organized and properly implemented by CSS frameworks. These elements can also be used to style the pages in a dynamic pattern while using the CSS templates.
• With the help of CSS Flash files, flash elements can be directly placed and handled on the website. There is a presence of inbuilt frameworks and styling sheets in CSS which can be used and to handle the situation. The animations can be directly created, and effects can be updated using the frameworks. The required flash files can be processed and implemented to create movies and animation in the web pages with the help of properties.

2. What are the merits and demerits of external, internal and inline styling?
• External CSS:
Advantages:
The main advantage of external styling is that, when it is linked to by every page, it ensures all pages are uniform in look and style creating a cohesive website. It also allows you to focus on the other aspects of web design when creating the other pages as you don't need to worry about the styling as that is already done thanks to the external file. Additionally, it keeps your other pages code nice and tidy as all the styling, which can often entail a lot of code, is separated onto a completely different file.
Disadvantages:
The main disadvantage of external CSS is that it does not allow for more specific controlling of certain elements so, if you were to only use external styling, every single version of the same element would look exactly the same. To combat this you could use internal styling, in-line styling or both in addition to external. Additionally, the CSS file must be referenced by every page of the site, if it is not, none of the formatting it sets out will be applied.
• Internal CSS
Advantages:
Internal styling, similarly to external, ensures all elements within that page are kept uniform in look and style. The difference is internal styling's main disadvantage, namely that it is only for that specific page and no other. If you wanted the same styling across all your pages you would need to have the same styling code written at the top of each page of your site which would make the code look messy and, if you were creating a big site, could become quite time consuming.
Disadvantages:
However, internal CSS can be used in conjunction with external to allow for more control over that specific page whilst maintaining the same styling as the external CSS for any elements not changed internally.
• In-Line CSS:
Advantages:
In-line styling further enhances both internal's positives and negatives. It can, when used in conjunction with external or internal styling, allow for much more precise and specific styling of certain elements as in-line styling will only edit the one element in it's same line of code and no others.
Disadvantages:
However, you were to attempt to style your pages with only in-line styling it would be incredibly time consuming, make your code very messy and hard to read and it would be difficult to keep any form of consistency.

Conclusion: (Conclusion to be based on the outcomes achieved)

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

Signature of faculty in-charge with date

References:

Books/ Journals/ Websites:
- "HTML5: Black Book", Dreamtech Publication.
- "Web Technologies: Black Book", Dreamtech Publication.
- http://www.w3schools.com