



CSS Flex

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Software Development Engineer @ Amazon

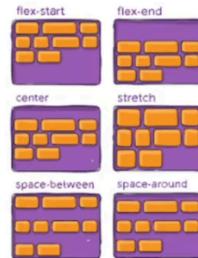
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Your Notes

CSS Flex

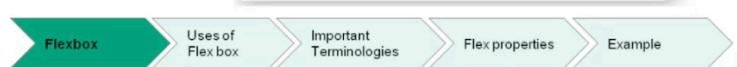
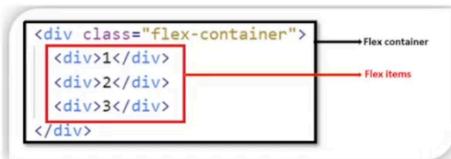
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CSS Flex



Flexbox **skill academy**

- Flexbox is a one-dimensional layout model, where flex means flexible length on flexible items.
- The flexbox layout must have a **parent element(container)** with the **display** property "**flex**". So that the child elements of the container automatically become **flex items**.
- Flexbox provides an easy way to arrange items within a container.



forcefully changed the alignment of the block level elements into inline elements by using **display : flex** property.

```

1 .container{
2   background-color: #f0f0f0;
3   padding:15px;
4   display: flex;
5 }
6
7 .item{
8   background-color: black;
9   color:white;
10  padding:10px 15px;
11  margin: 10px;
12  height:100px;
13  width:100px;
14 }

```

Flexbox

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- Flexbox **aligns and distributes space** among the items in the container even when the size of the items is unknown or dynamic.
- Flexbox expands/shrinks to fill available space/prevent overflow and distributes space among the items.
- Flexbox is used for creating small-scale layouts.
- Flexbox aligns the items vertically and horizontally using rows and columns.



Flexbox Uses

Flexbox Uses

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- The flexbox makes the website/web app behave in a similar manner even when they are viewed on different devices that have different screen sizes.
- To create responsive and mobile-friendly websites/web apps flexbox can be used.



Important Terminologies

Important Terminologies

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- The two main components of flexbox are flex container and flex item.
 - Flex container:** Property of parent element that is declared with display property flex.
 - Flex item:** Properties of child elements. There may be one or many flex items.

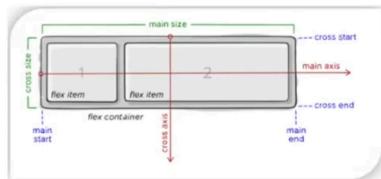
```
.flex-container {
  display: flex;
}
```



Important Terminologies

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- Flex layout is based on **flex-flow directions**, which are used in displaying the flex items. Flexbox has two axes.
 - Main axis:** The primary axis along with the flex items are laid out.
 - Cross axis:** The axis perpendicular to the main axis is called cross axis.



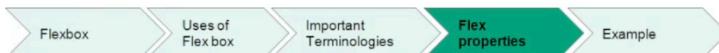
Flex Properties

Flex properties

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Property	Value and Description	
display	flex	Enables flex context to all direct child of the container.

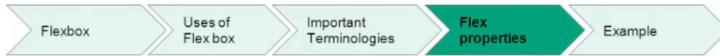
display: flex;



Flex properties - Direction

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Property	Value and Description
flex-direction	Specifies the direction of flex items in the main axis. <ul style="list-style-type: none"> • row • row-reverse • column • column-reverse

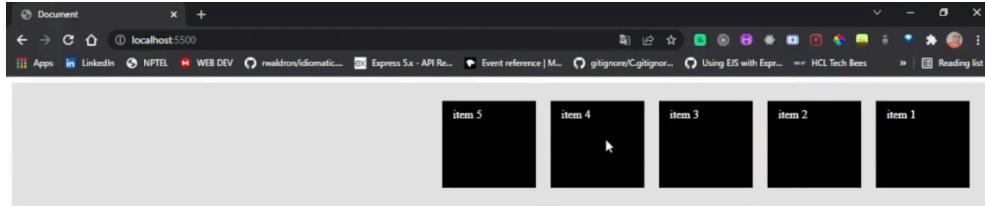


flex-direction : column;

```
style.css
1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   flex-direction: column;
6 }
7
8 .item{
9   background-color: black;
10  color:#fff;
11  padding:10px 15px;
12  margin:10px;
13  height:100px;
14  width:100px;
15 }
16 }
```

flex-direction : reverse;

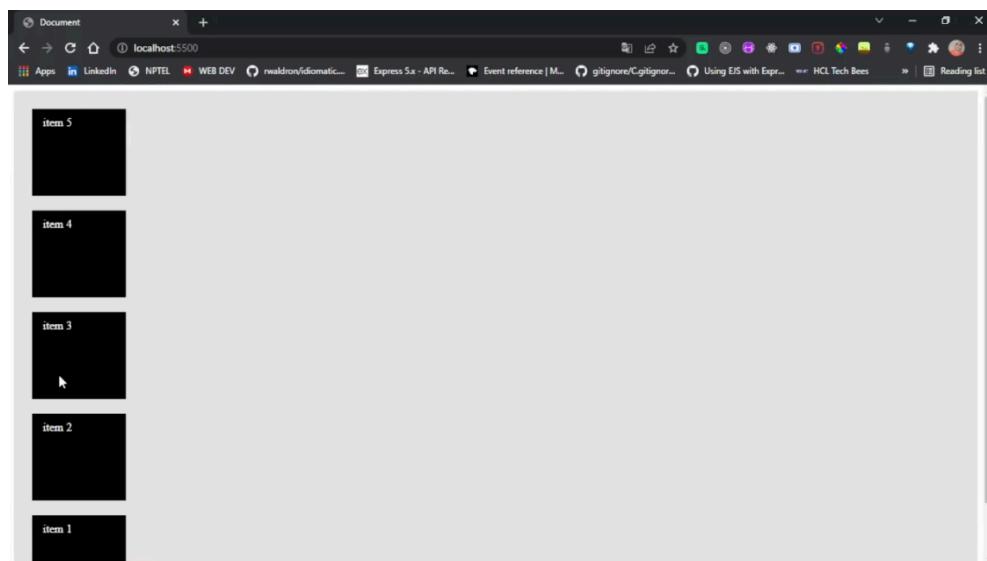
```
style.css
1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   flex-direction: row-reverse;
6 }
7
8 .item{
9   background-color: black;
10  color:#fff;
11  padding:10px 15px;
12  margin:10px;
13  height:100px;
14  width:100px;
15 }
16 }
```

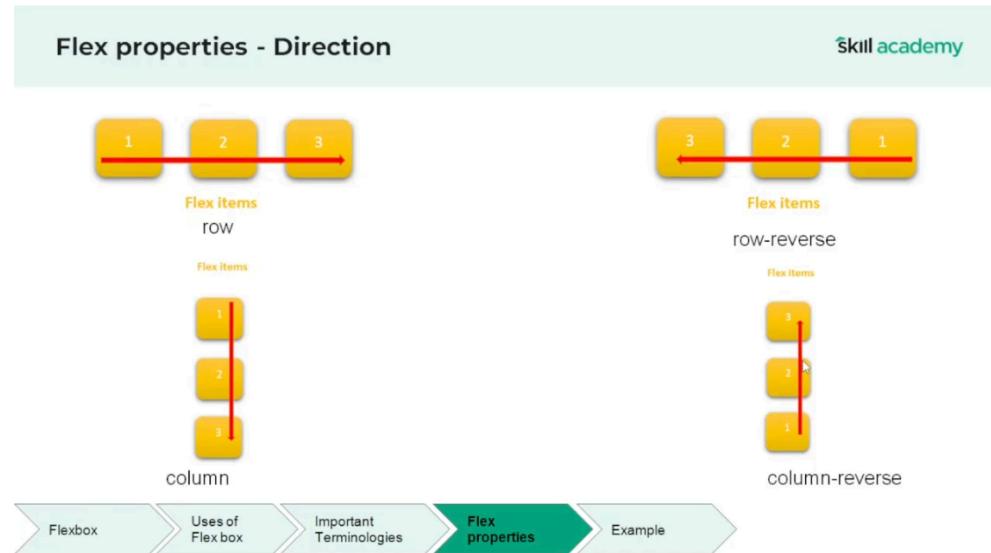


flex-direction : column;

```
style.css
.container {
    background-color: #rgb(238, 227, 227);
    padding: 15px;
    display: flex;
    flex-direction: column-reverse;
}

.item {
    background-color: black;
    color: white;
    padding: 10px 15px;
    margin: 10px;
    height: 100px;
    width: 100px;
}
```





flex-wrap property

flex-wrap : nowrap;

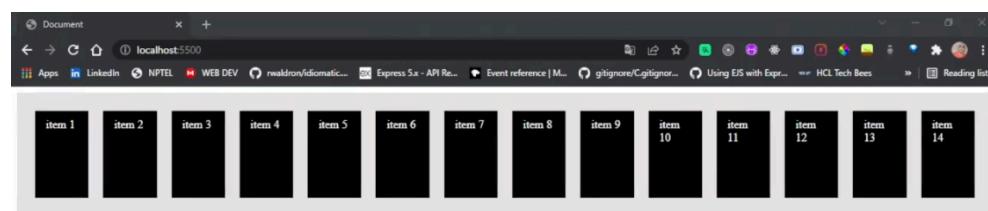
index.html

```
<div>
  <div>item 1</div>
  <div>item 2</div>
  <div>item 3</div>
  <div>item 4</div>
  <div>item 5</div>
  <div>item 6</div>
  <div>item 7</div>
</div>
```

style.css

```
.container {
  background-color: #rgb(230, 227, 227);
  padding:15px;
  display: flex;
  /* flex-direction: column-reverse; */
  flex-wrap: nowrap;
}

.items{
  background-color: black;
  color: #fff;
  padding:10px 15px;
  margin: 10px;
  height:100px;
  width:100px;
}
```



flex-wrap : wrap;



```

Document x +
localhost:5500
File Edit Selection View Go Run ... style.css - Visual Studio Code
style.css > style.css
1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   /* flex-direction: column-reverse; */
6   flex-wrap: wrap;
7
8 }
9
10 .item{
11   background-color: black;
12   color:#fff;
13   padding:10px 15px;
14   margin: 10px;
15   height:100px;
16   width:100px;
17 }

```

item 1 item 2 item 3 item 4 item 5
item 9 item 10 item 11 item 12 item 13 item 14



```

Document x +
localhost:5500
File Edit Selection View Go Run ... style.css - Visual Studio Code
style.css > style.css
1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   /* flex-direction: column-reverse; */
6   flex-wrap: wrap;
7
8 }
9
10 .item{
11   background-color: black;
12   color:#fff;
13   padding:10px 15px;
14   margin: 10px;
15   height:100px;
16   width:100px;
17 }

```

item 1 item 2 item 3 item 4 item 5 item 6 item 7 item 8
item 9 item 10 item 11 item 12 item 13 item 14

`flex-wrap : wrap-reverse;`

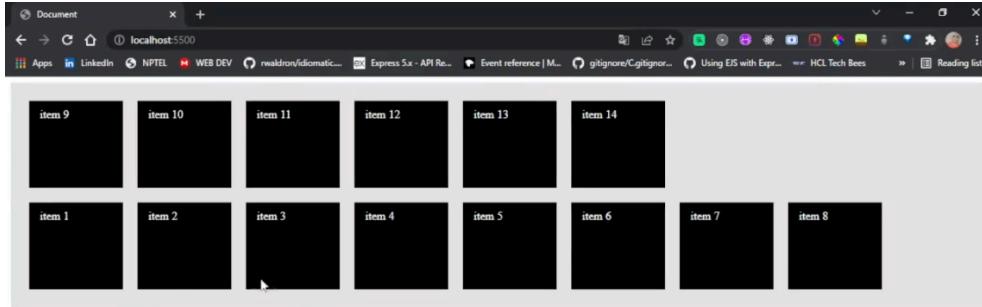


```

Document x +
localhost:5500
File Edit Selection View Go Run ... style.css - Visual Studio Code
style.css > style.css
1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   /* flex-direction: column-reverse; */
6   flex-wrap: wrap-reverse;
7
8 }
9
10 .item{
11   background-color: black;
12   color:#fff;
13   padding:10px 15px;
14   margin: 10px;
15   height:100px;
16   width:100px;
17 }

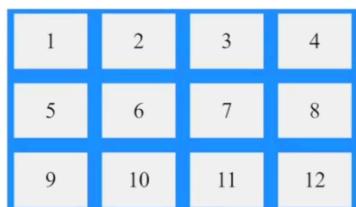
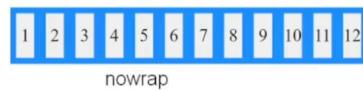
```

item 1 item 2 item 3 item 4 item 5
item 9 item 10 item 11 item 12 item 13 item 14



Flex properties - Wrap

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flex-flow property

Flex properties - Flow

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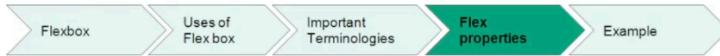
Property	Value and Description
flex-flow	Shorthand property for flex-direction and flex-wrap.



Flex properties - Flow

Skill academy

Property	Value and Description
flex-flow	Shorthand property for flex-direction and flex-wrap.



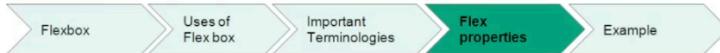
flex- property Justify-content

Flex properties - Justify

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Property	Value and Description
justify-content	To align flex items on the main axis.

- flex-start
- flex-end
- center
- space-between
- space-around
- space-evenly



justify-content : flex-start; default property

The screenshot shows a browser window displaying a flex container with five items labeled item 1 through item 5. To the right of the browser is a code editor window titled "style.css" showing the following CSS code:

```

.container {
    background-color: #rgb(230, 227, 227);
    padding:15px;
    display: flex;
    /* flex-direction: column-reverse; */
    /* flex-wrap: wrap-reverse; */
    flex-flow: row wrap-reverse;
    justify-content: flex-start;
}

.item{
    background-color: black;
    color:#fff;
    padding:10px 15px;
    margin:10px;
    height:100px;
    width:100px;
}

```

justify-content : flex-end;

The screenshot shows a code editor with two tabs: `index.html` and `style.css`. The `style.css` tab contains the following CSS:

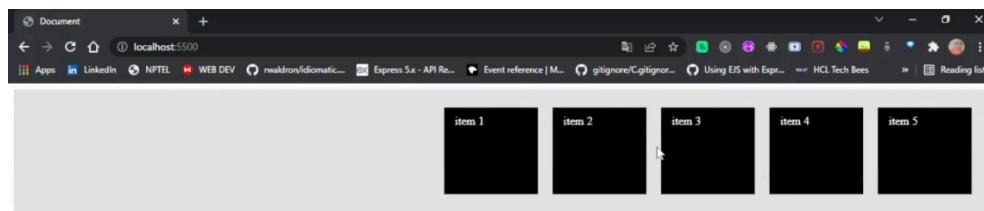
```

.container {
    background-color: #rgb(230, 227, 227);
    padding:15px;
    display: flex;
    /* flex-direction: column-reverse; */
    /* flex-wrap: wrap-reverse; */
    flex-flow: row wrap-reverse;
    justify-content: flex-end;
}

.item {
    background-color: black;
    color:#fff;
    padding:10px 15px;
    margin:10px;
    height:100px;
    width:100px;
}

```

The browser preview shows five items labeled "item 1" through "item 5" arranged horizontally at the bottom right of the container.



`justify-content : center;`

The screenshot shows a code editor with two tabs: `index.html` and `style.css`. The `style.css` tab contains the following CSS:

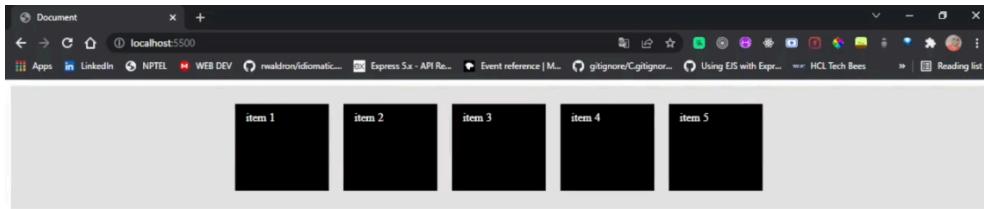
```

.container {
    background-color: #rgb(230, 227, 227);
    padding:15px;
    display: flex;
    /* flex-direction: column-reverse; */
    /* flex-wrap: wrap-reverse; */
    flex-flow: row wrap-reverse;
    justify-content:center;
}

.item {
    background-color: black;
    color:#fff;
    padding:10px 15px;
    margin:10px;
    height:100px;
    width:100px;
}

```

The browser preview shows the items centered horizontally within the container.



justify-content : space-between;

A screenshot of a browser window showing the same layout as above, but with the styling applied via a separate 'style.css' file. The code in 'style.css' includes 'flex-direction: column-reverse;', 'flex-wrap: wrap-reverse;', and 'justify-content: space-between;'. The browser also shows the 'Visual Studio Code' interface on the right, with the 'style.css' file open.

```

1 .container{
2   background-color: #rgb(230, 227, 227);
3   padding:15px;
4   display: flex;
5   /* flex-direction: column-reverse; */
6   /* flex-wrap: wrap-reverse; */
7   flex-flow: row wrap-reverse;
8   justify-content:space-between;
9 }
10
11
12
13 .item{
14   background-color: #black;
15   color:#fff;
16   padding:10px 15px;
17   margin: 10px;
18   height:100px;
19   width:100px;
20 }

```



justify-content : space-around; equal no space between first and last element.

A screenshot of a browser window displaying five black rectangular items labeled "item 1" through "item 5". The items are evenly spaced along a horizontal axis. The browser's developer tools are open, showing the CSS file "style.css" with the following code:

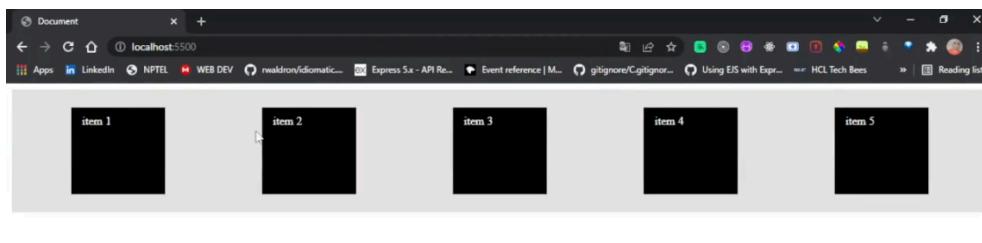
```

.container {
    background-color: #rgb(230, 227, 227);
    padding: 15px;
    display: flex;
    /* flex-direction: column-reverse; */
    /* flex-wrap: wrap-reverse; */
    flex-flow: row wrap-reverse;
    justify-content: space-around;
}

.item {
    background-color: #fff;
    color: #000;
    padding: 10px;
    margin: 10px;
    height: 100px;
    width: 100px;
}

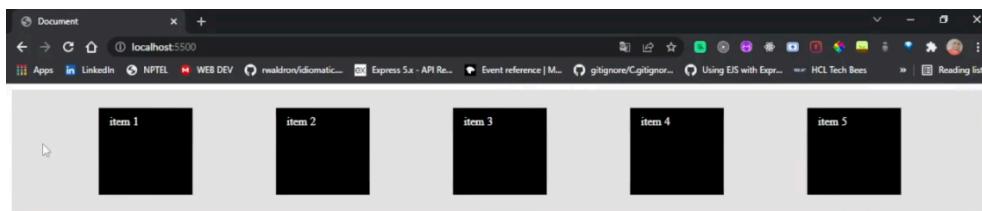
```

The "justify-content: space-around;" property is highlighted in the code editor.



`justify-content : space-evenly;`

here starting and ending of the space-width is equal to the space-width between the flex-items



Flex Properties - Align (it show the alignment of flex-items)

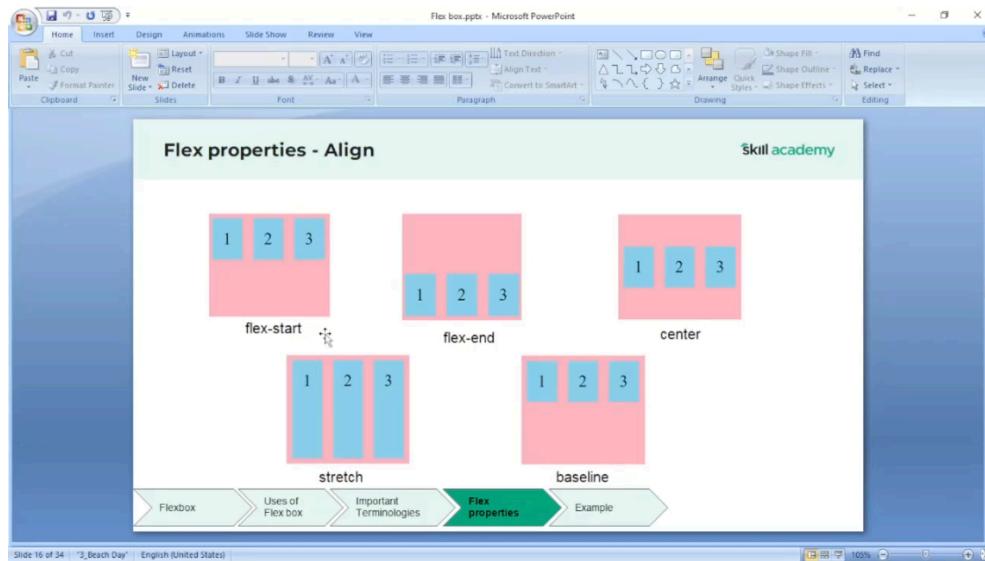
`align-items : center;`

`align-items : flex-start;`

`align-items : flex-end;`

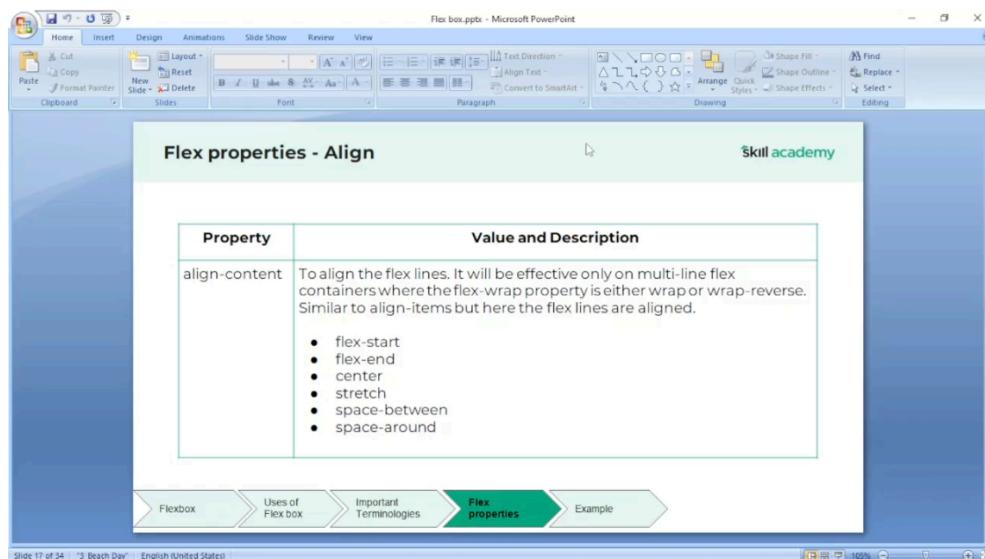
`align-items : stretch`

`align-items : baseline;`



Flex Properties - Align

`align-content : flex-start;`



Flex properties - Align

flex-start flex-end

Flexbox Uses of Flex box Important Terminologies **Flex properties** Example

Flex properties - Align

center stretch

Flexbox Uses of Flex box Important Terminologies **Flex properties** Example

Flex properties - Align

space-between space-around

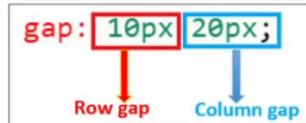
Flexbox Uses of Flex box Important Terminologies **Flex properties** Example

Flex Properties - Gap

Flex properties - Gap

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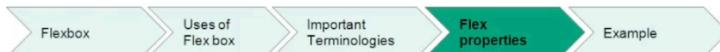
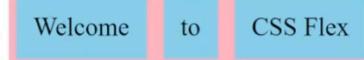
Property	Value and Description
gap	To control space between flex items.

**Flex Properties - Order****Flex properties - Order**

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Property	Value and Description
order	<ul style="list-style-type: none"> Value must be a number. Default value is 0. Specifies the order of flex items.

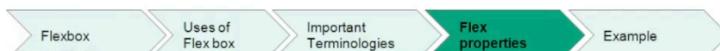
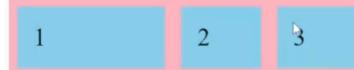
```
<div style="order: 2"> to</div>
<div style="order: 3">CSS Flex</div>
<div style="order: 1">Welcome</div>
```

**Flex Properties - Flex Grow****Flex properties - Flex Grow**

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Property	Value and Description
flex-grow	<ul style="list-style-type: none"> Value must be a number. Default value is 0. To make the flex item grow with respect to given value.

```
<div style="flex-grow: 3">1</div>
<div style="flex-grow: 1">2</div>
<div style="flex-grow: 1">3</div>
```

**Flex Properties - Flex Shrink**

Flex properties - Flex Shrink

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Property	Value and Description
flex-shrink	<ul style="list-style-type: none"> Value must be a number. Default value is 1. If the value is given as 0, it won't let the flex item shrink. To make the flex item shrink with respect to given value.

```
<div style="flex-shrink: 8">1</div>
<div style="flex-grow: 1">2</div>
<div style="flex-grow: 1">3</div>
```

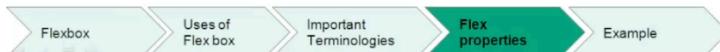


Flex properties - Flex basis

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Property	Value and Description
flex-shrink	<ul style="list-style-type: none"> Length (px, %, rem, etc...) The value will be assigned as the default size of the flex item and the remaining space will be distributed.

```
<div style="flex-basis: 200px">1</div>
<div>2</div>
<div>3</div>
```



Flex Shorthand

Flex properties - Flex Shorthand

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Property	Value and Description
flex	Shorthand property for flex-grow, flex-shrink, flex-basis.

```
<div>1</div>
<div style="flex: 0 8 0px">2</div>
<div>3</div>
```



Self-Align Property

Flex properties - Self Align

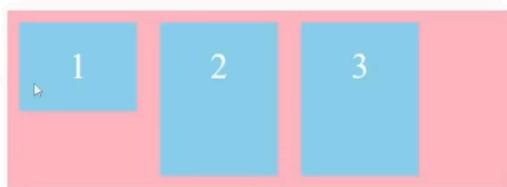
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Property	Value and Description
align-self	Specifies the alignment for selected flex items inside the container. <ul style="list-style-type: none"> flex-start flex-end center baseline stretch

**Flex properties - Self align : flex-start**

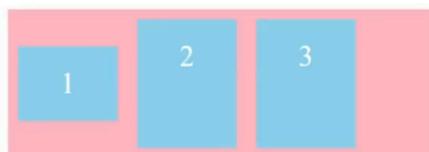
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```
<div style="align-self: flex-start">1</div>
<div>2</div>
<div>3</div>
```

**Flex properties - Self align : center**

Skill academy

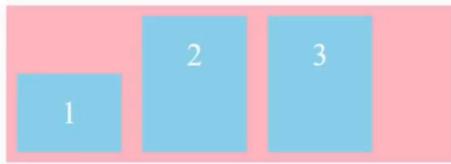
```
<div style="align-self: center">1</div>
<div>2</div>
<div>3</div>
```



Flex properties - Self align : flex-end

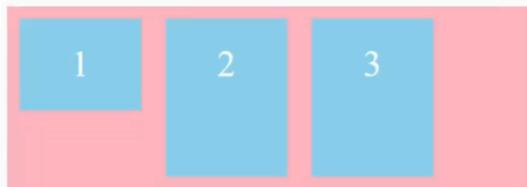
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```
<div style="align-self: flex-end">1</div>
<div>2</div>
<div>3</div>
```

**Flex properties - Self align : baseline**

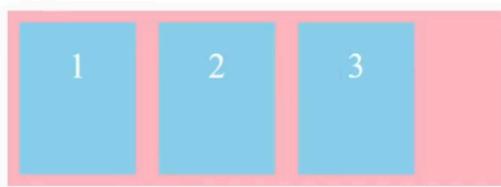
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```
<div style="align-self: baseline">1</div>
<div>2</div>
<div>3</div>
```

**Flex properties - Self align : stretch**

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```
<div style="align-self: stretch">1</div>
<div>2</div>
<div>3</div>
```



Example

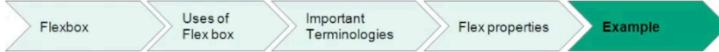
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```
<body>
  <div class="flex-container">
    <div>1</div>
    <div>2</div>
    <div>3</div>
    <div>4</div>
    <div>5</div>
    <div>6</div>
    <div>7</div>
    <div>8</div>
  </div>
</body>
```

code

```
.flex-container {
  display: flex;
  flex-flow: row wrap;
  justify-content: space-around;
  background: skyblue;
}

.flex-container > div {
  background: lightcoral;
  padding: 5px;
  width: 100px;
  height: 150px;
  margin-top: 10px;
  color: white;
  font-weight: bold;
  text-align: center;
}
```



Example

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by testbook