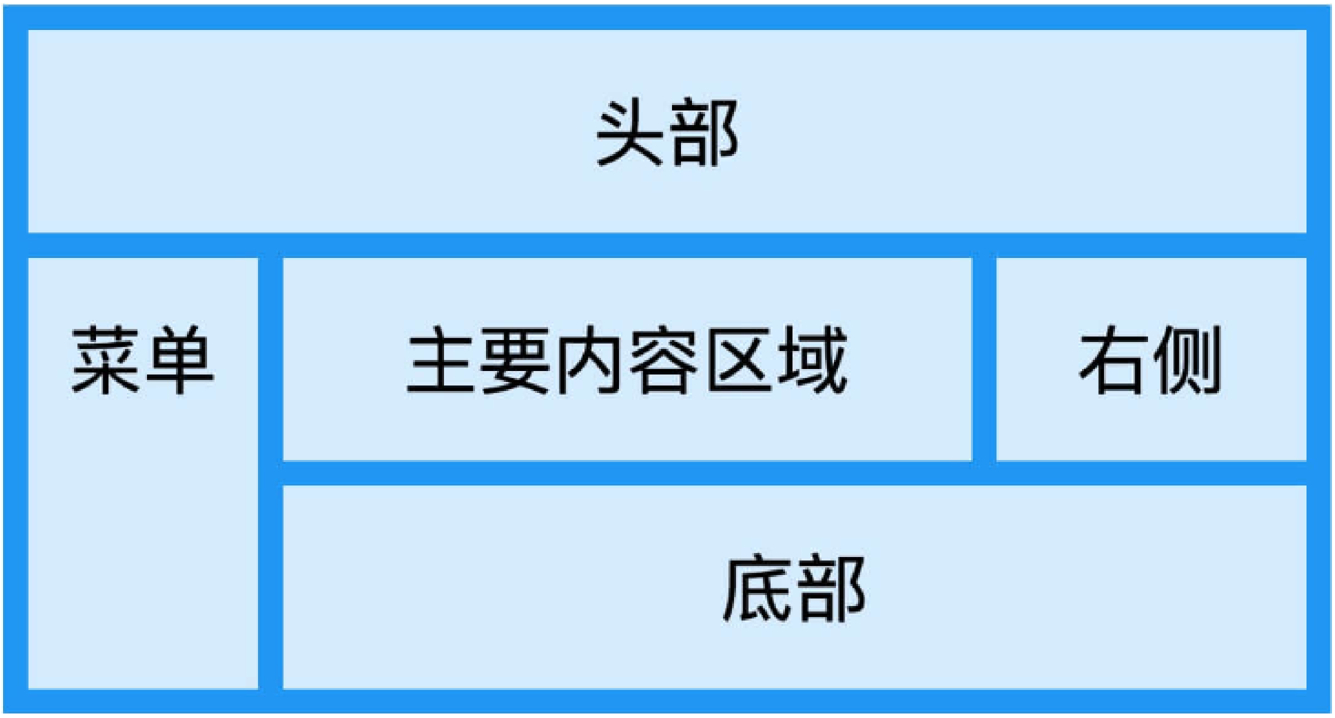
第九章 网格布局

一、概念

网格布局（Grid布局），顾名思义就是像网一样有一个个格子一样的布局。在一个容器里面，我们可以切割成很多行很多列，形成一个个网格，从而对这些网格进行规则性的排序，使用，达到我们复杂的页面布局效果。



头部

菜单

主要内容区域

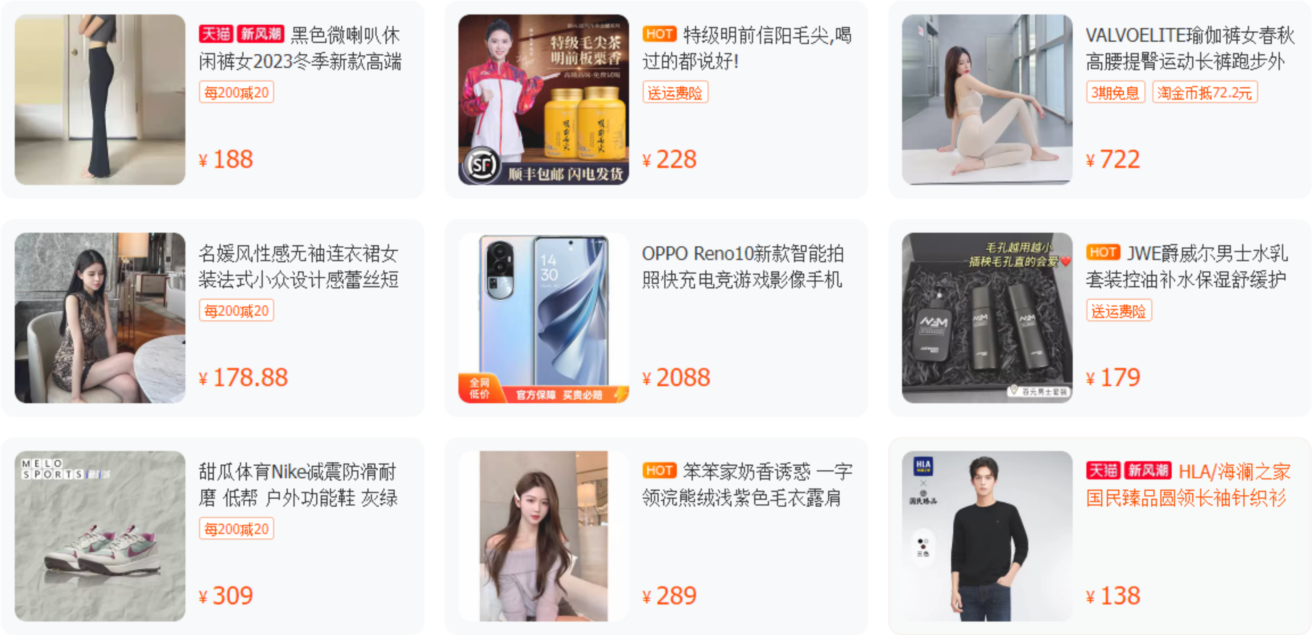
右侧

底部

网格布局在实际应用中非常普遍

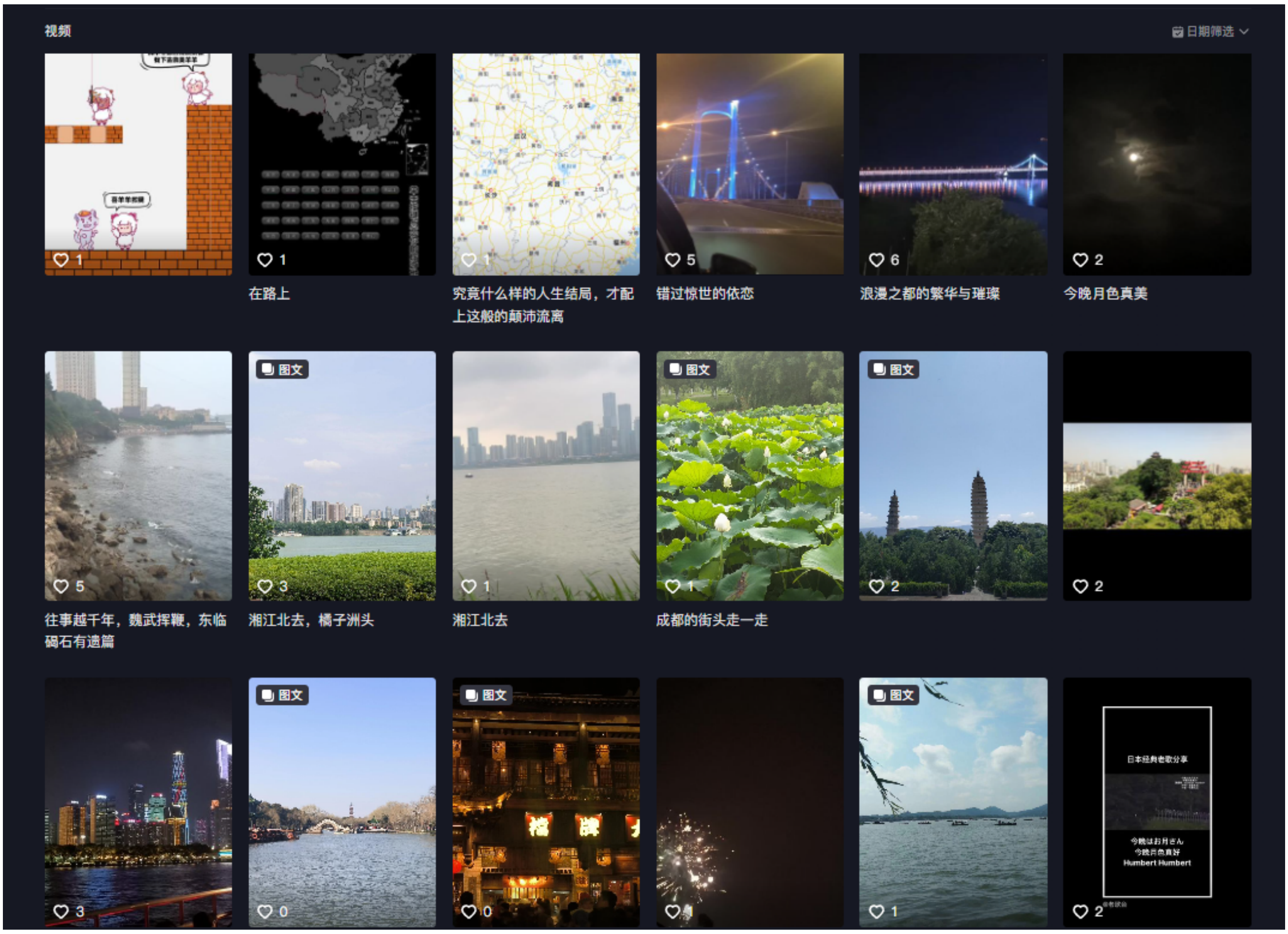
应用场景：

1.淘宝



天猫 新风潮 黑色微喇叭休闲裤女2023冬季新款高端 每200减20 ¥188	HOT 特级明前信阳毛尖,喝过的都说好! 送运费险 ¥228	VALVOELITE瑜伽裤女春秋高腰提臀运动长裤跑步外 3期免息 淘金币抵72.2元 ¥722
名媛风性感无袖连衣裙女装法式小众设计感蕾丝短 每200减20 ¥178.88	OPPO Reno10新款智能拍照快充电竞游戏影像手机 ¥2088	HOT JWE爵威尔男士水乳套装控油补水保湿舒缓护 送运费险 ¥179
甜瓜体育Nike减震防滑耐磨 低帮 户外功能鞋 灰绿 每200减20 ¥309	HOT 笨笨家奶香诱惑 一字领浣熊绒浅紫色毛衣露肩 ¥289	天猫 新风潮 HLA/海澜之家国民臻品圆领长袖针织衫 ¥138

2.抖音

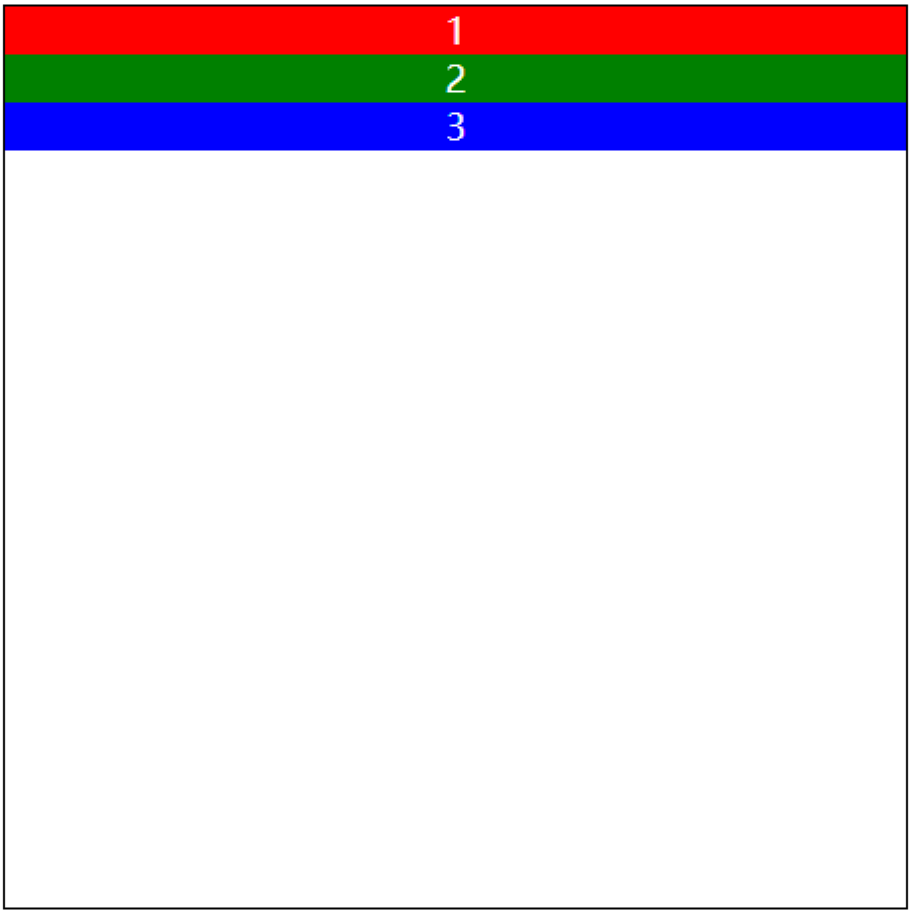


二、使用

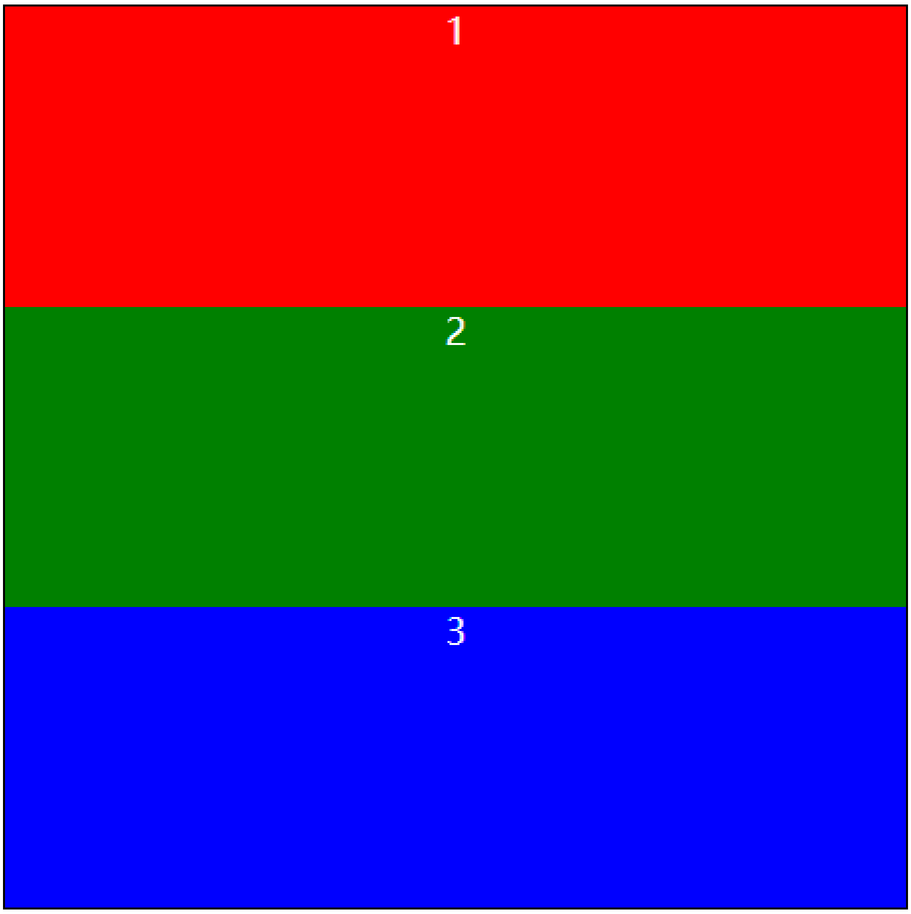
2.1 display:gird 定义网格布局

display:grid可以设置容器为 网格布局。当子元素未设置height，子元素会将父元素填充满。(每一个元素占据一行)

未设置 grid布局时：



设置grid布局时：



代码：

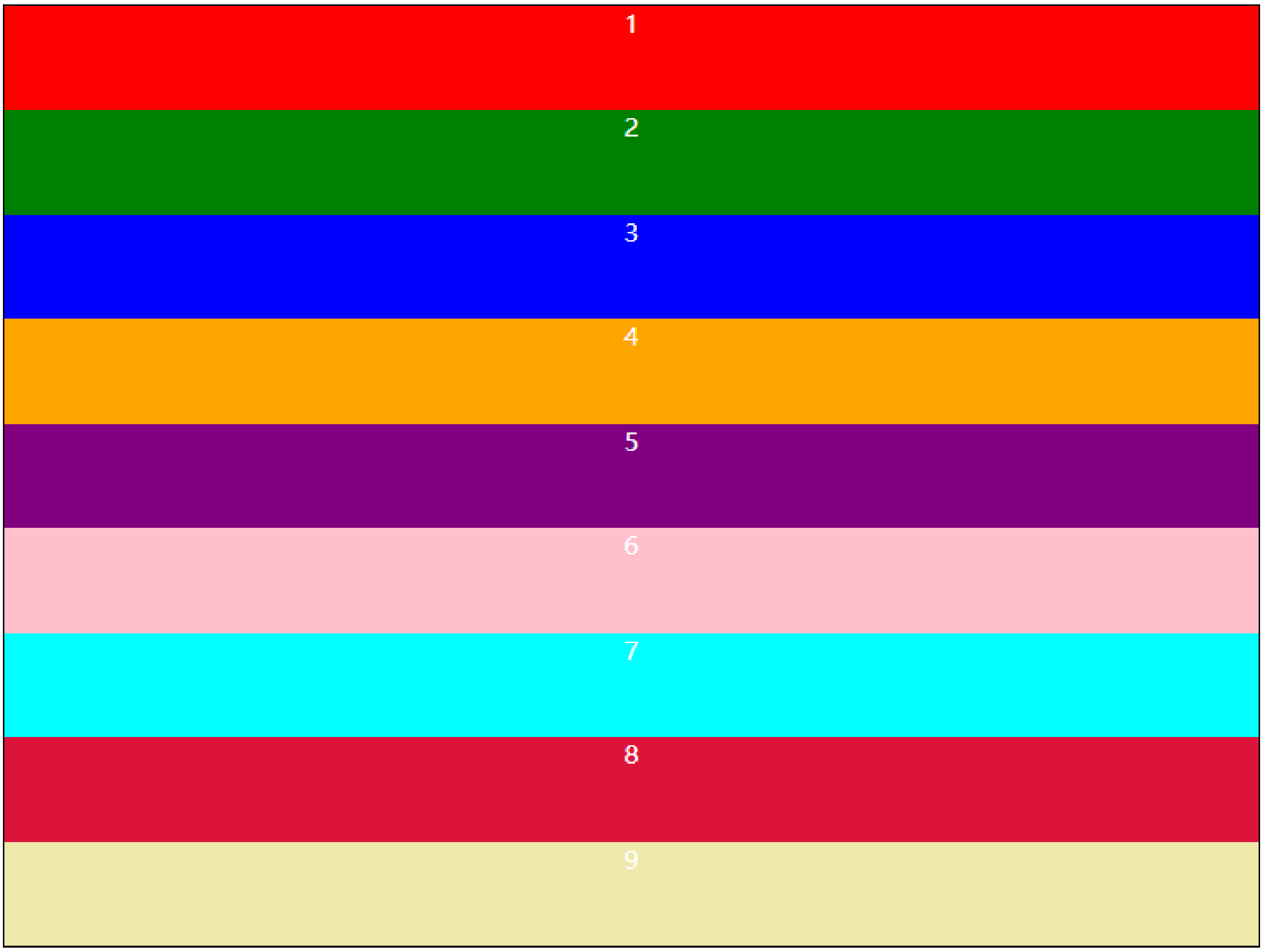
```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title>grid布局</title>
        <style type="text/css">
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                height: 400px;
                width: 400px;
                margin: 100px auto;
                border: 1px solid black;
                /*父元素设置  grid布局*/
                display: grid;
            }
            #box>div{
                width: 100%;
                color: white;
                text-align: center;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <div>1</div>
            <div>2</div>
            <div>3</div>
        </div>
    </body>
</html>
```

2.2 grid设置 某行/某列的高度/宽度

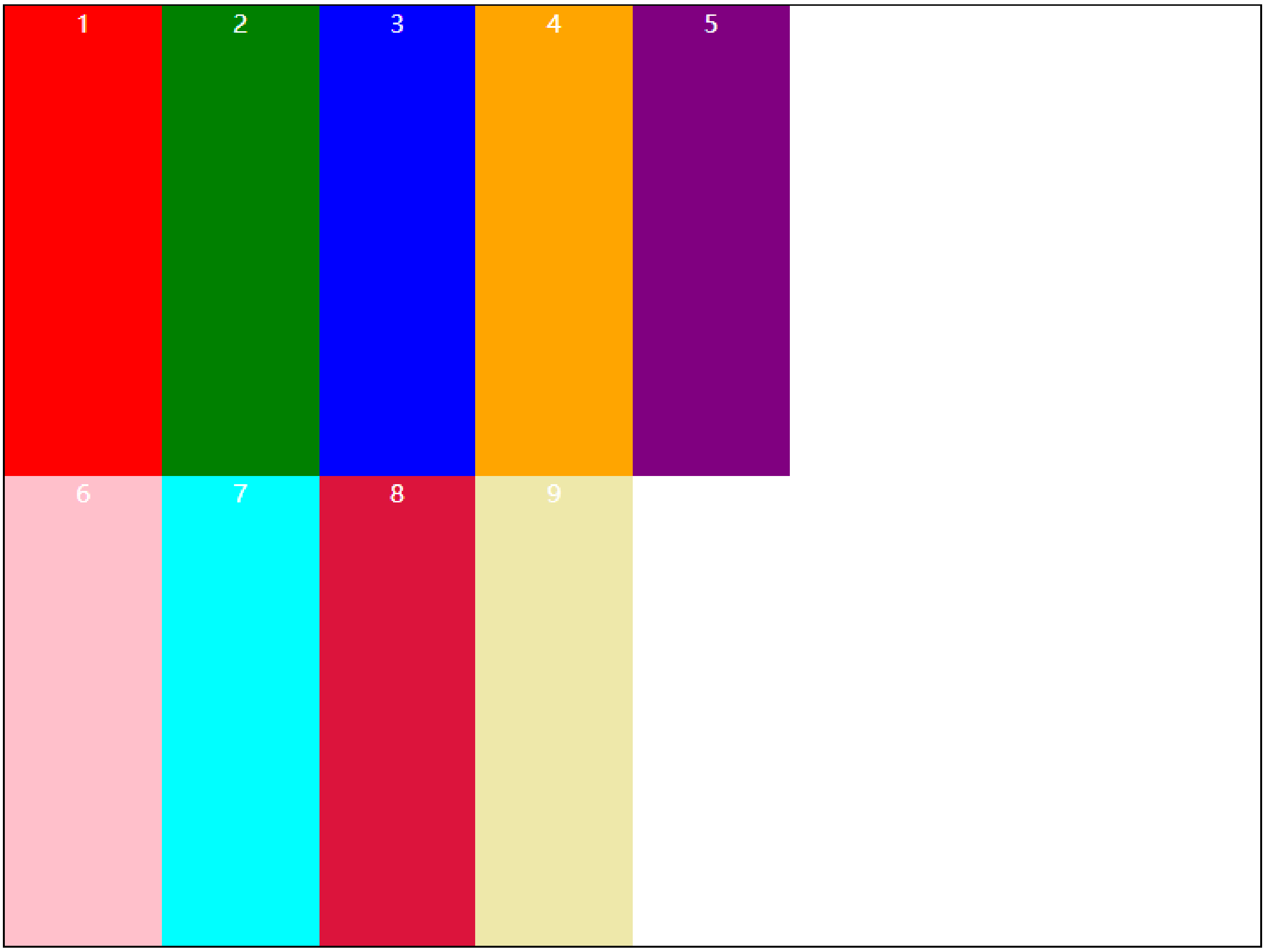
2.2.1 grid-template-columns:repeat(n,m px);

当子元素 未设置 具体 宽度 时，将子元素排列成n列，宽度为 m 像素

未设置时：



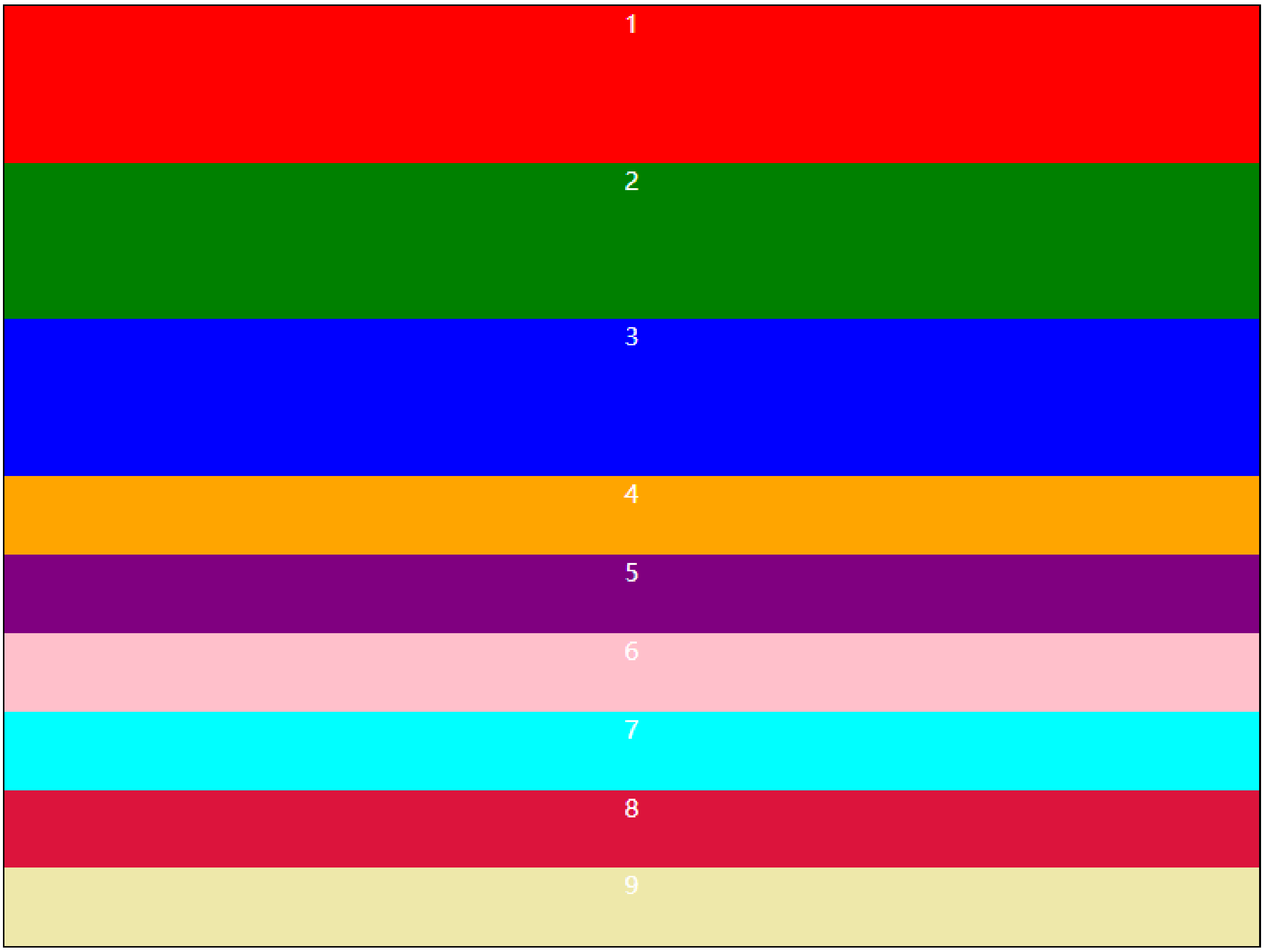
设置 行数 和 宽度 时： 设置 5 列， 每一列 宽度 为 50px



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title>grid布局</title>
        <style type="text/css">
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                height: 600px;
                width: 800px;
                margin: 100px auto;
                border: 1px solid black;
                /*父元素设置  grid布局*/
                display: grid;
                /*设置 宽高*/
                grid-template-columns:repeat(5,100px);
            }
            #box>div{
                color: white;
                text-align: center;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

2.2.2 grid-template-rows:repeat(n,m px);

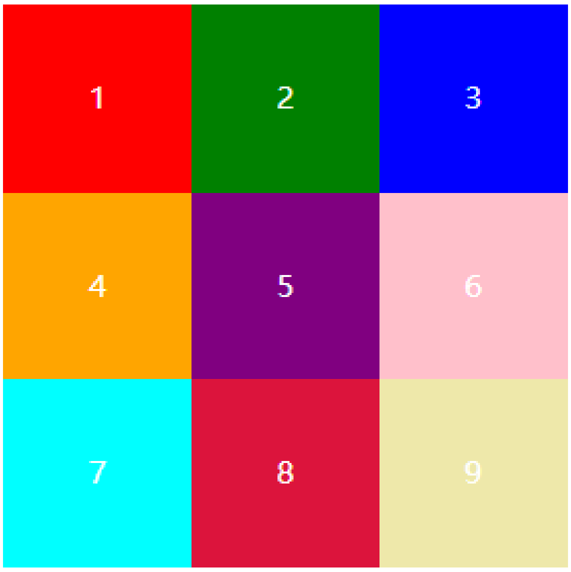
grid-template-rows:repeat(n,m px);当子元素未设置具体 高度 时，可以设置 前 n 行的高度 为 m 像素。



代码:

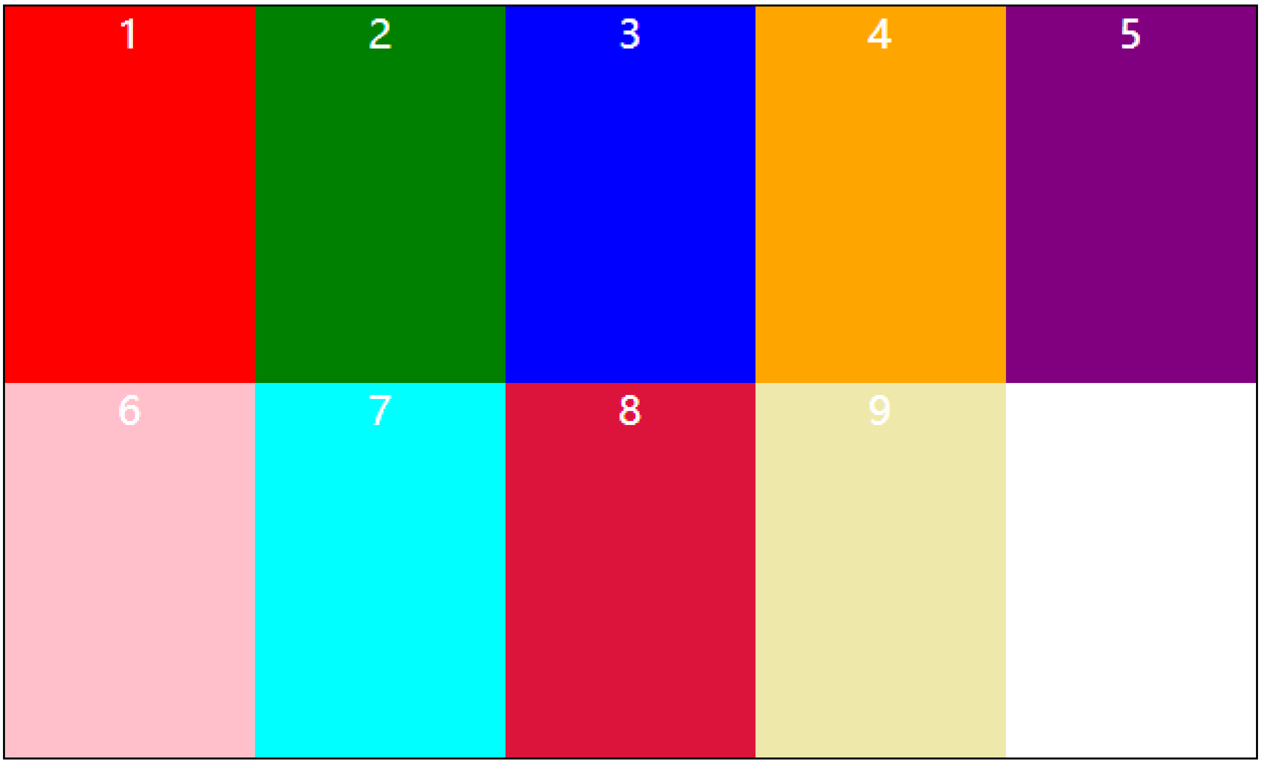
```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title>grid布局</title>
        <style type="text/css">
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                height: 600px;
                width: 800px;
                margin: 100px auto;
                border: 1px solid black;
                /*父元素设置  grid布局*/
                display: grid;
                /*设置 前 三行的高度为100px*/
                grid-template-rows:repeat(3,100px);
            }
            #box>div{
                color: white;
                text-align: center;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

练习1：



auto-fill，表示自动填充，让一行（或者一列）中尽可能的容纳更多的单元格示

当前每一行显示5个子元素

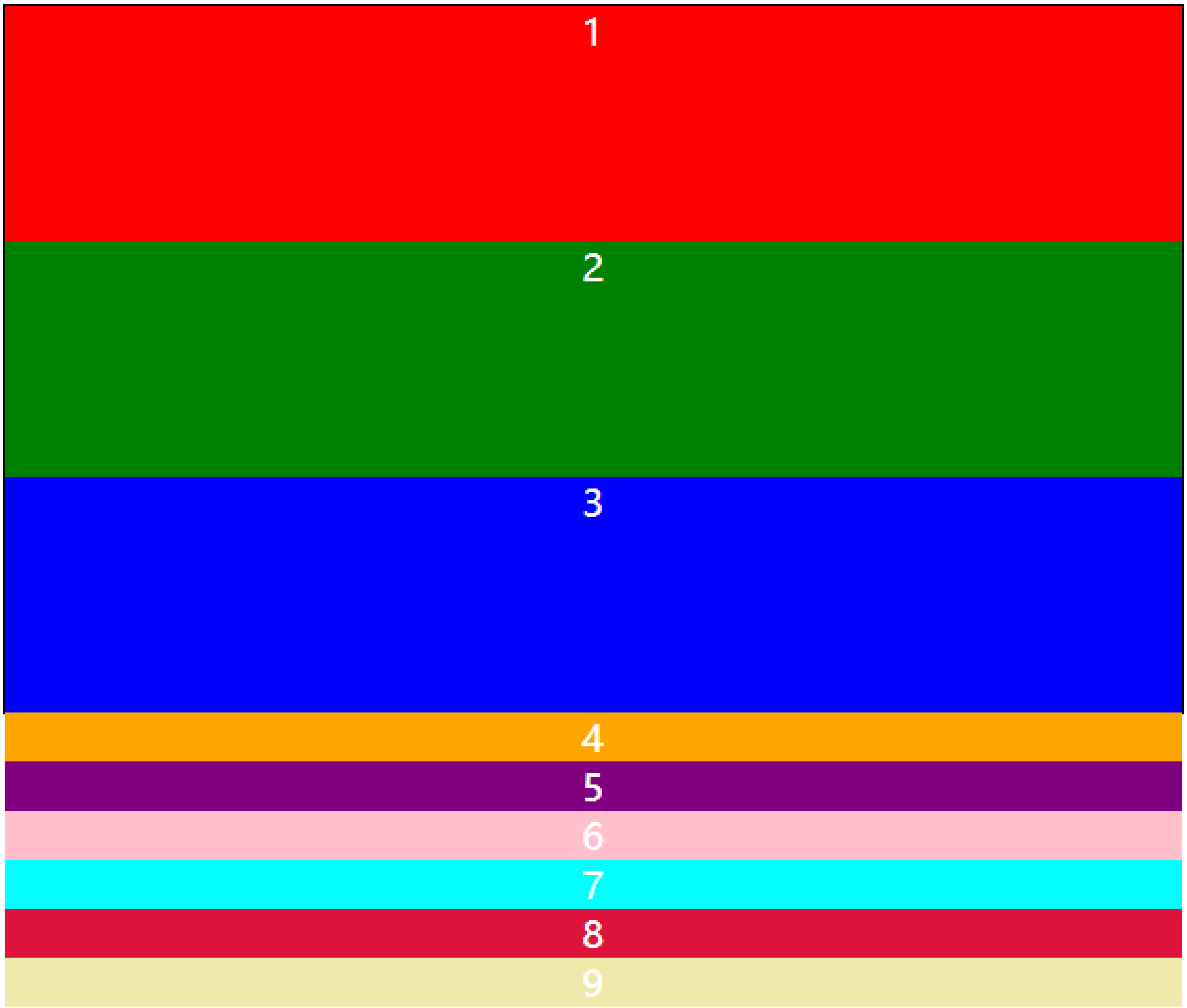


```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
```

```
            margin: 0;
            padding: 0;
        }
        #box{
            border: 1px solid black;
            width: 500px;
            height: 300px;
            margin: 100px auto;
            display: grid;
            grid-template-columns:repeat(auto-fill,100px);
        }
        #box>div{
            text-align: center;
            color: white;
        }
        #box>div:nth-child(1){
            background-color: red;
        }
        #box>div:nth-child(2){
            background-color: green;
        }
        #box>div:nth-child(3){
            background-color: blue;
        }
        #box>div:nth-child(4){
            background-color: orange;
        }
        #box>div:nth-child(5){
            background-color: purple;
        }
        #box>div:nth-child(6){
            background-color: pink;
        }
        #box>div:nth-child(7){
            background-color: cyan;
        }
        #box>div:nth-child(8){
            background-color: crimson;
        }
        #box>div:nth-child(9){
            background-color:palegoldenrod;
        }
    </style>
</head>
<body>
    <div id="box">
        <div>1</div>
        <div>2</div>
        <div>3</div>
        <div>4</div>
        <div>5</div>
        <div>6</div>
        <div>7</div>
```

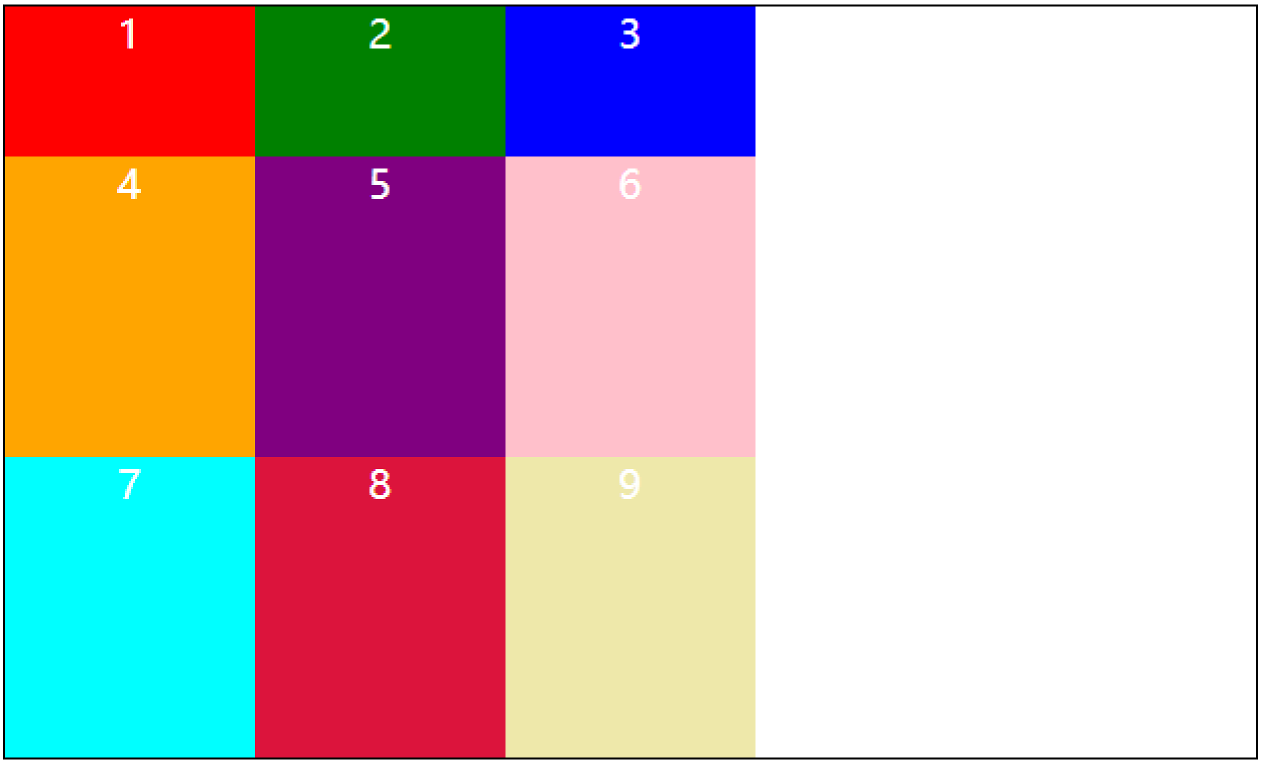
```
            <div>8</div>
            <div>9</div>
        </div>
    </body>
</html>
```

当让最多的元素高度为100px时



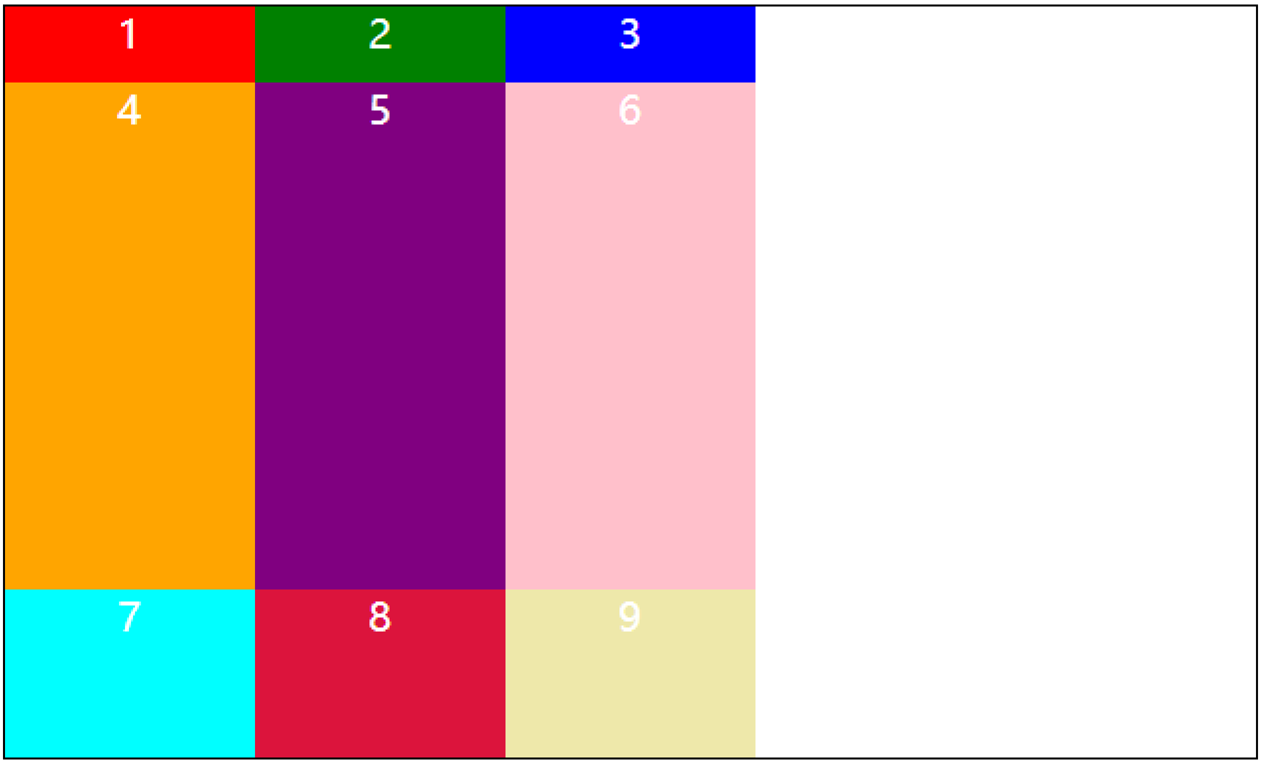
```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                grid-template-rows:repeat(auto-fill,100px);
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

练习2：



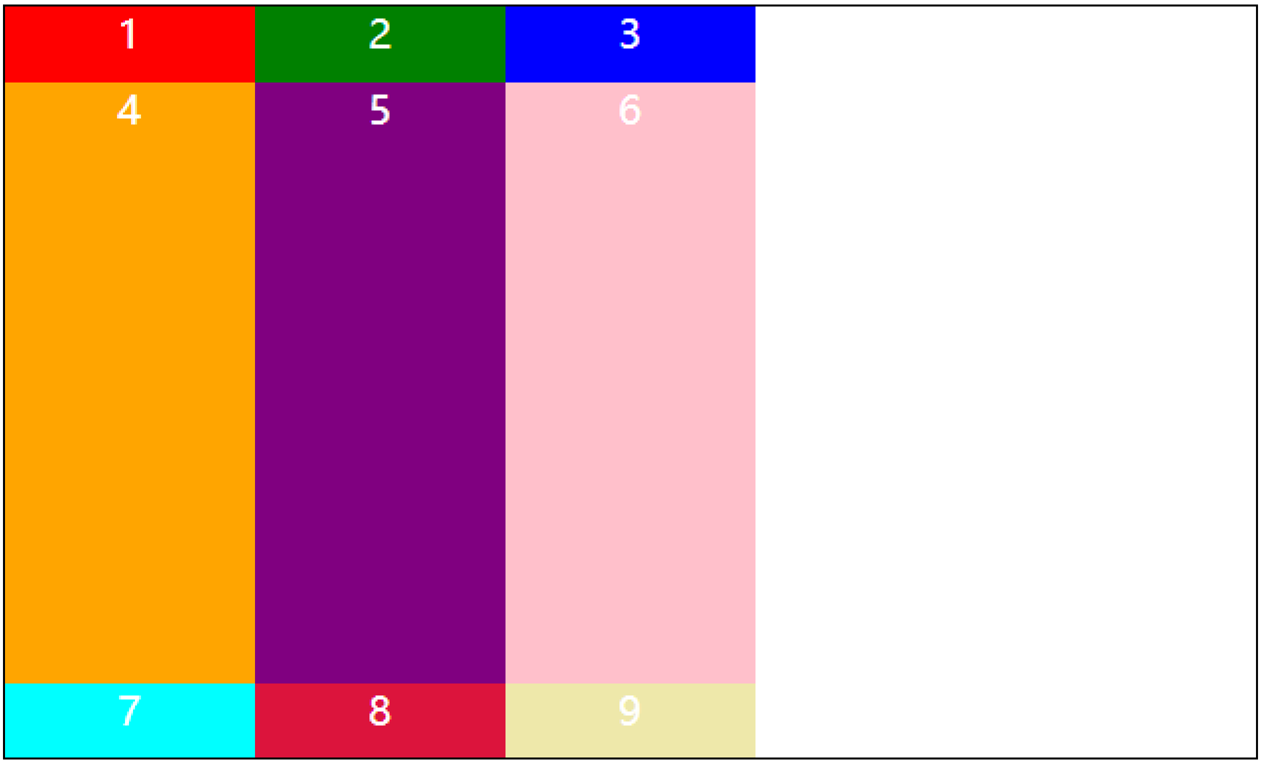
fr 片段：表示比例关系

案例：第一行高为：30px，第二行与第三行高度比例： 3:1



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                /*设置  fr比例 */
                grid-template-rows:30px 3fr 1fr;
                grid-template-columns:repeat(3,100px);
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

auto：由浏览器自己决定长度



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                /*auto:由 浏览器决定具体的高度 */
                grid-template-rows:30px auto 30px;
                grid-template-columns:repeat(3,100px);
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
```

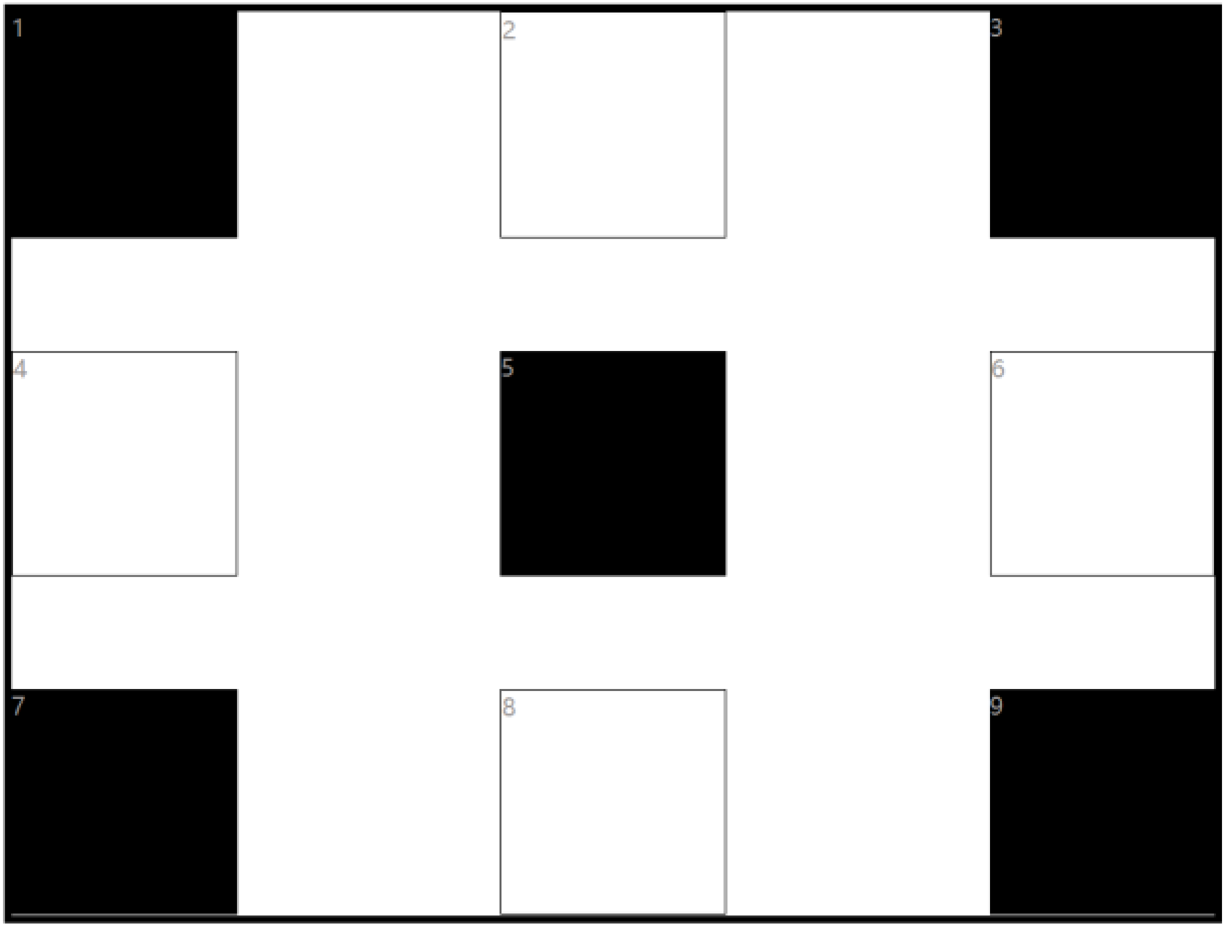
```
</html>
```

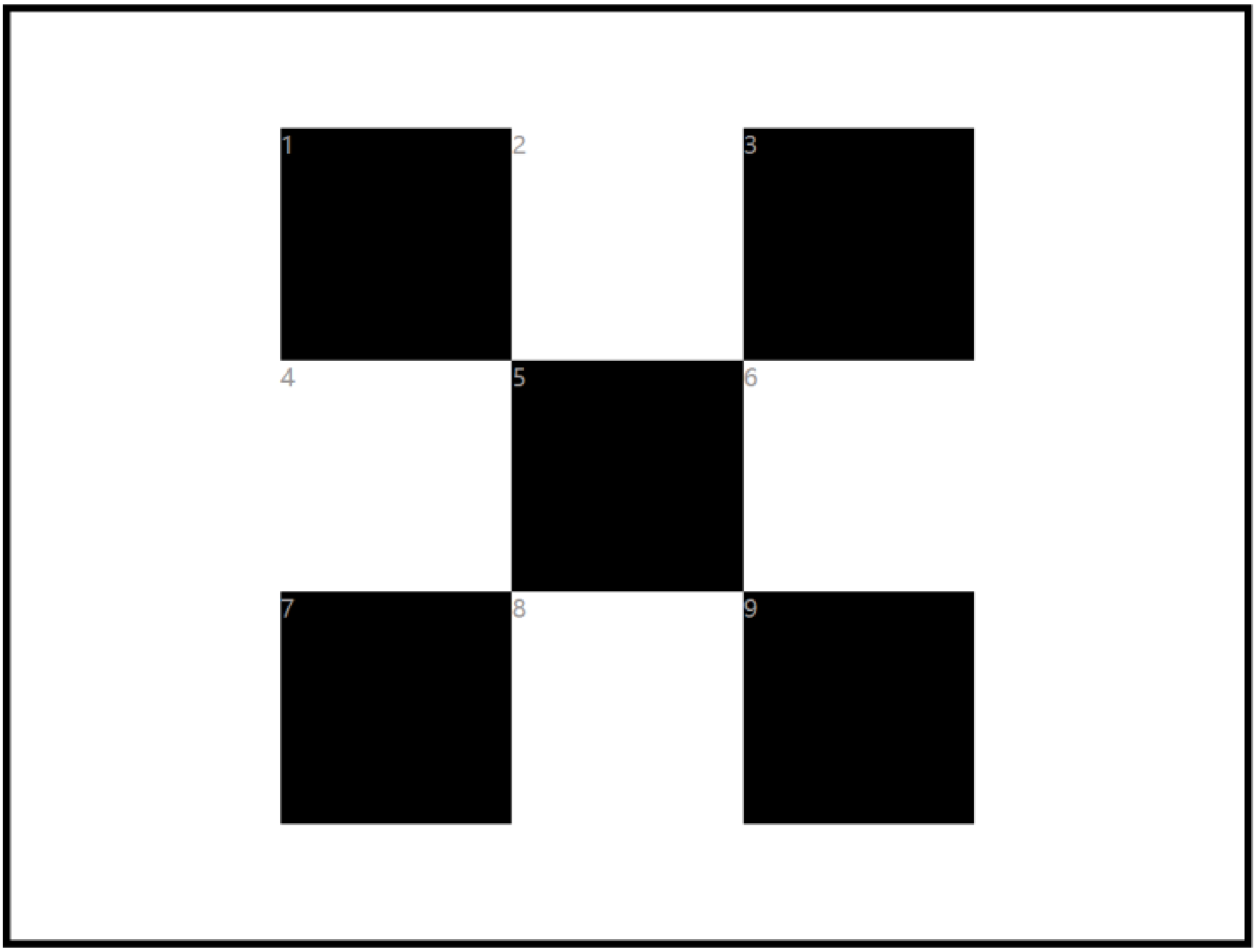
2.3 子元素对齐顺序

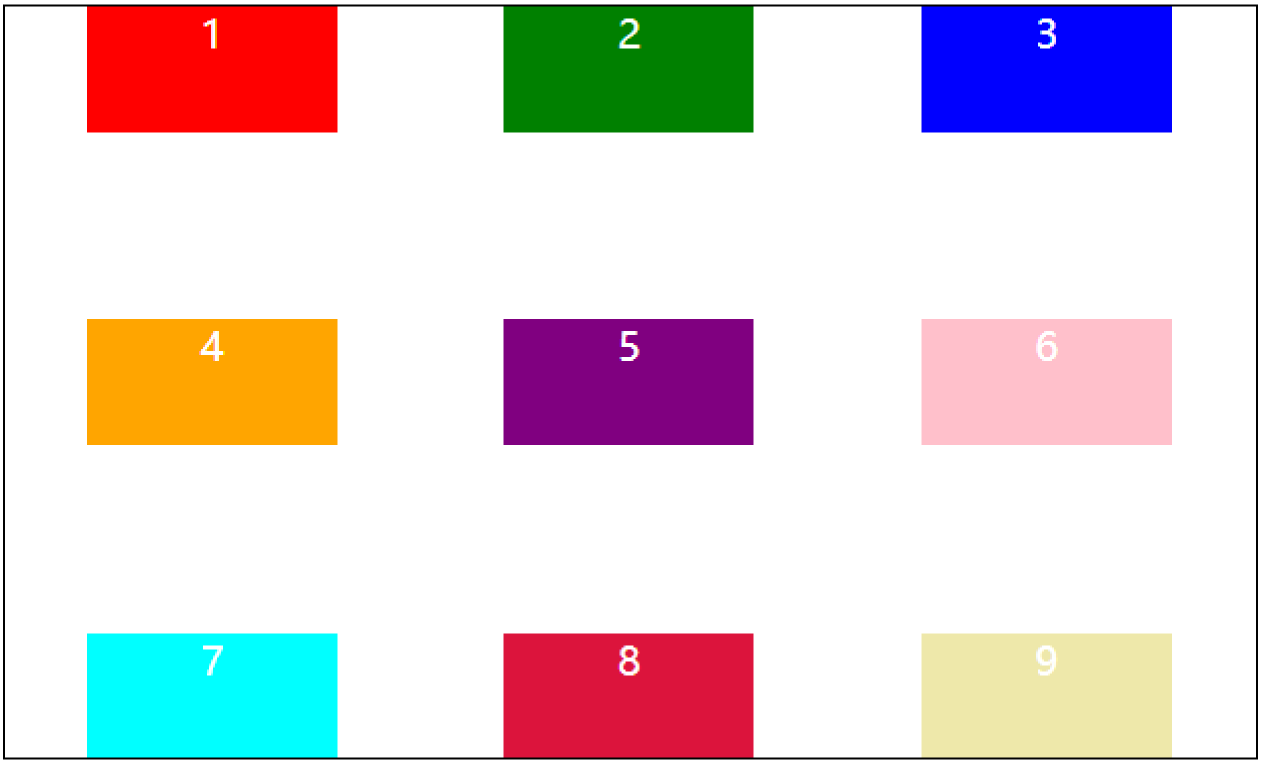
网格属性排列方向有两种水平方向 （justify-content）、垂直方向（align-content），垂直和水平方向都具有一下对齐方式

属性值	说明
start	将网格对齐到网格容器的起始边缘
end	将网格对齐到网格容器的结束边缘
center	将网格对齐到居中位置
space-around	每个项目两侧的间隔相等，项目之间的间隔比项目与容器边框的间隔大一倍
space-between	项目与项目的间隔相等，项目与容器边框之间没有间隔
space-evenly	项目与项目的间隔相等，项目与容器边框之间也是同样长度的间隔
stretch	项目大小没有指定时，拉伸占据整个网格容器

练习：

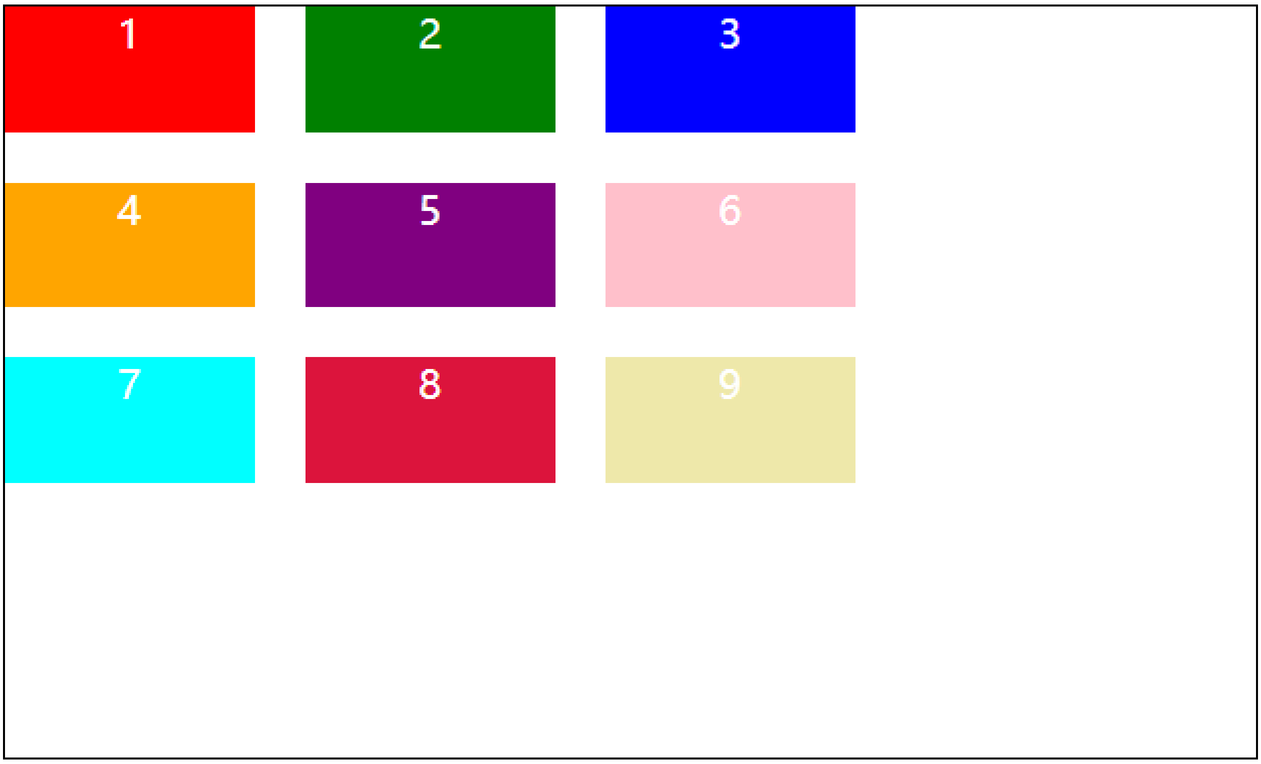






2.4 网格间距

grid-column-gap属性定义了列之间的网格间距，grid-row-gap属性定义了行之间的网格间距



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                grid-template-rows:repeat(3,50px);
                grid-template-columns:repeat(3,100px);
                grid-column-gap:20px;
                grid-row-gap:20px;
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

2.5 网格线

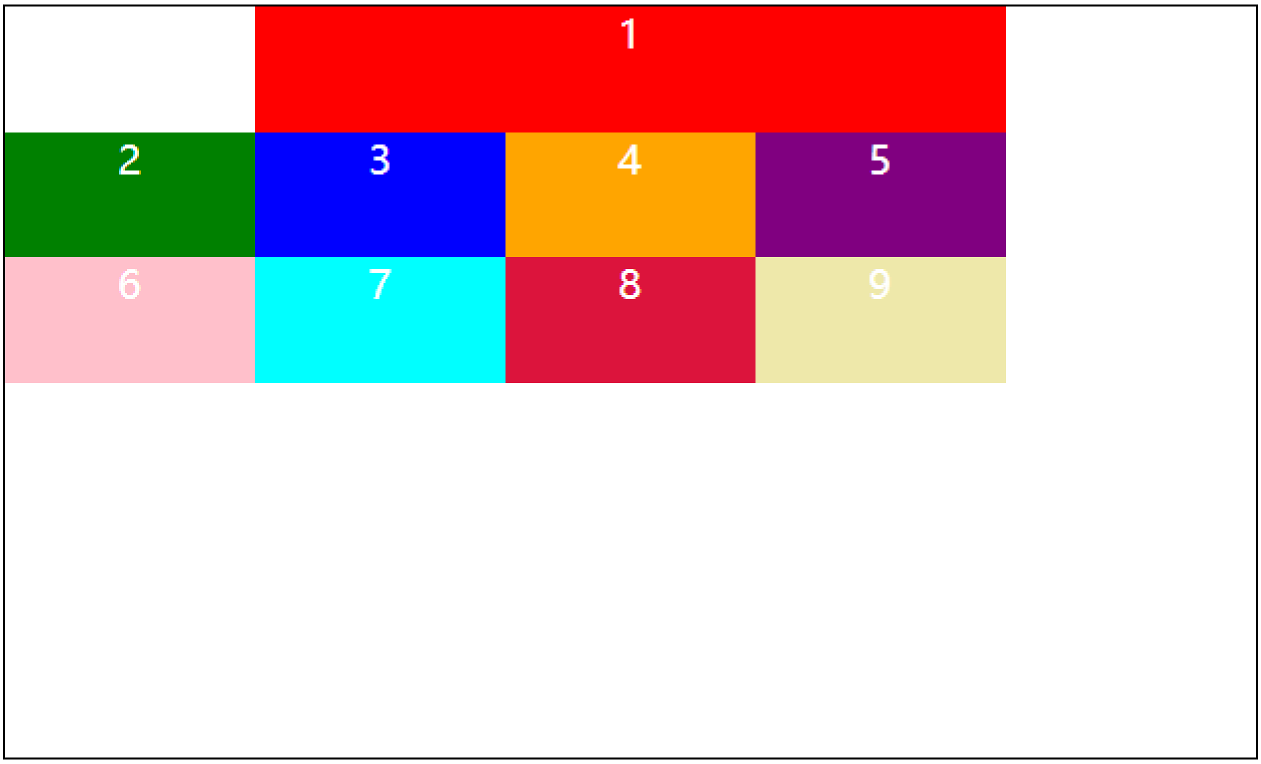
在网格属性中使用grid-column-start、grid-column-end、grid-row-start、grid-row-end等等属性也可以分别简写为：grid-column: / ;grid-row: / ;grid-column: 1 其作用是用来设置项目中需要的网格线。

2.5.1 grid-column-start、grid-column-end

grid-column-start: n 从第n列开始

grid-column-end: m 到第m-1列结束

案例1：数字1 模块 从第2列开始，到 第 4列结束



`

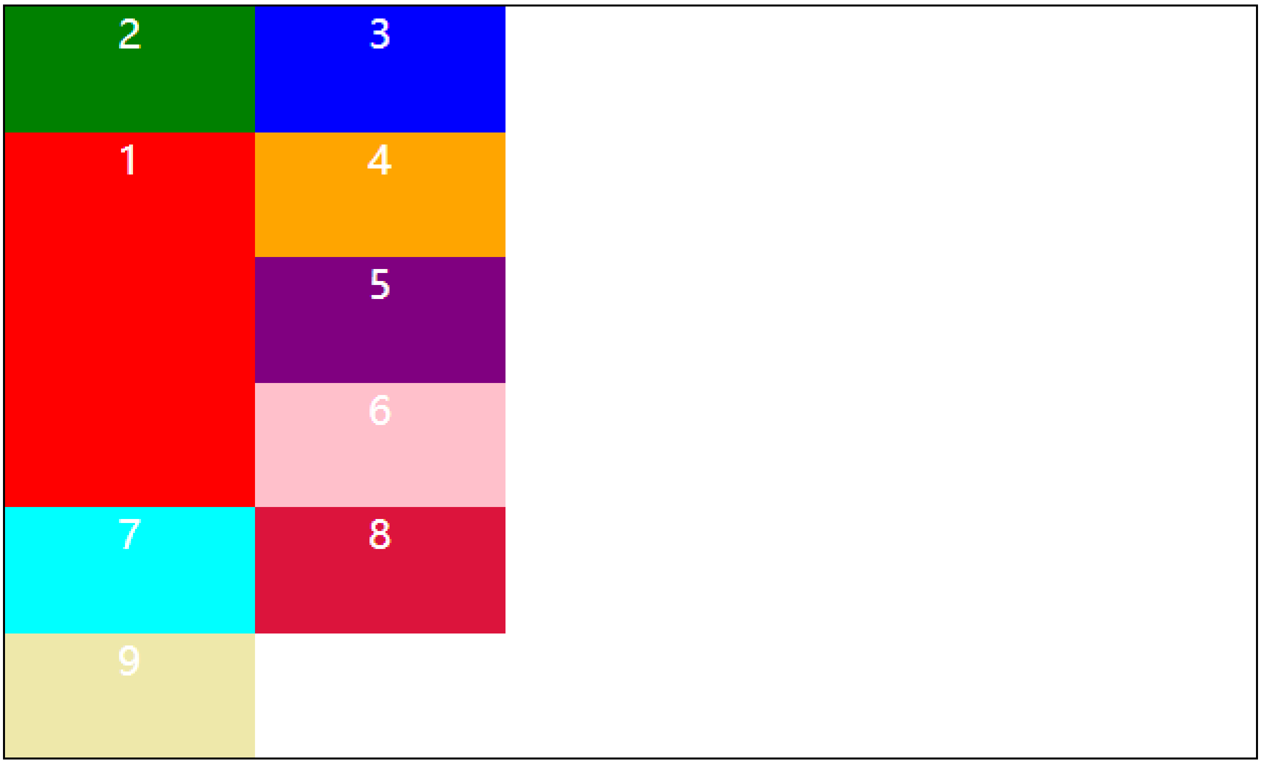
```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                grid-template-rows:repeat(3,50px);
                grid-template-columns:repeat(4,100px);
            }
            #box>div:nth-child(1){
                grid-column-start: 2;
                grid-column-end: 5;
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

2.5.2 grid-row-start、grid-row-end

grid-row-start: n 从第n行开始

grid-row-end: m 到第m-1行结束

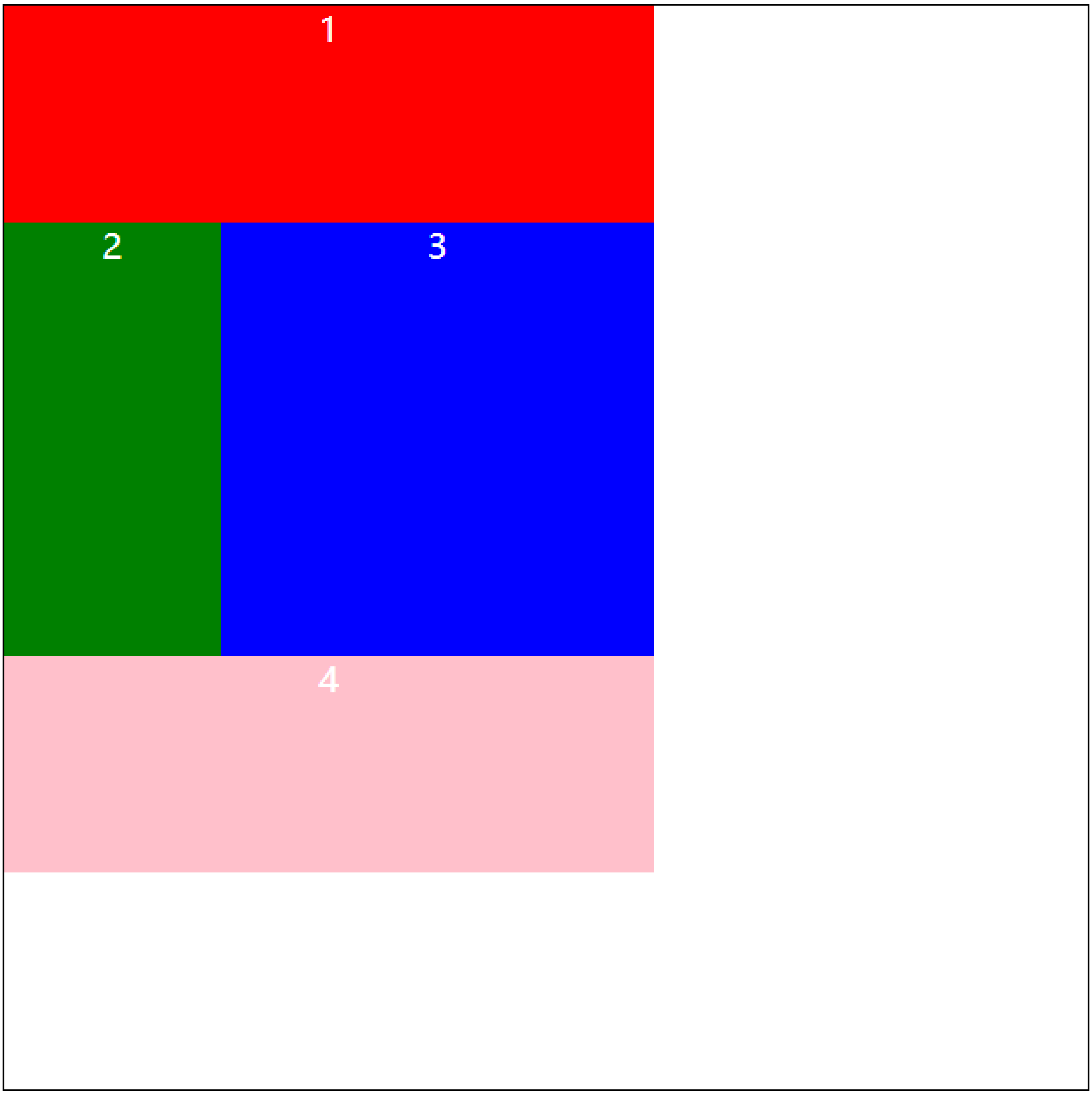
案例1：数字一 从第二行到 第四行 排列



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style>
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                border: 1px solid black;
                width: 500px;
                height: 300px;
                margin: 100px auto;
                display: grid;
                grid-template-rows:repeat(3,50px);
                grid-template-columns:repeat(2,100px);
            }
            #box>div:nth-child(1){
                grid-row-start: 2;
                grid-row-end: 5;
            }
            #box>div{
                text-align: center;
                color: white;
            }
            #box>div:nth-child(1){
                background-color: red;
            }
            #box>div:nth-child(2){
                background-color: green;
            }
            #box>div:nth-child(3){
                background-color: blue;
            }
            #box>div:nth-child(4){
                background-color: orange;
            }
            #box>div:nth-child(5){
                background-color: purple;
            }
            #box>div:nth-child(6){
                background-color: pink;
            }
            #box>div:nth-child(7){
                background-color: cyan;
            }
            #box>div:nth-child(8){
                background-color: crimson;
            }
            #box>div:nth-child(9){
                background-color:palegoldenrod;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <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>
    </body>
</html>
```

2.6 网格区域

网格区域在网格布局中由一个或者多个网格单元格组成的一个矩形区域。两种情况会创建网格区域：使用网格线（如：grid-column-start、grid-column-end:、grid-row-start、grid-row-end等）指定网格区域，使用grid-area，grid-area 是一种对于 grid-row-start、grid-column-start、grid-row-end和 grid-column-end的使用命名的网格区域（如：grid-area: a）定义一个item的区域命名为a，然后使用grid-template-areas放置a的位置。



```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="UTF-8">
        <title></title>
        <style type="text/css">
            *{
                margin: 0;
                padding: 0;
            }
            #box{
                width: 500px;
                height: 500px;
                margin: 100px auto;
                border: 1px solid black;
                display: grid;
                grid-template-columns:100px 100px 100px;
                grid-template-rows:100px 200px 100px;
                grid-template-areas:'a a a'
                                    'b c c'
                                    'd d d';
            }
            #box>div{
                color: white;
                text-align: center;
            }
            #box>div:nth-child(1){
                grid-area:a;
                background-color: red;
            }
            #box>div:nth-child(2){
                grid-area:b;
                background-color: green;
            }
            #box>div:nth-child(3){
                grid-area:c;
                background-color: blue;
            }
            #box>div:nth-child(4){
                grid-area:d;
                background-color: pink;
            }
        </style>
    </head>
    <body>
        <div id="box">
            <div>1</div>
            <div>2</div>
            <div>3</div>
            <div>4</div>
        </div>
    </body>
</html>
```