

Memorandum

Practice challenges:advanced

Challenge 1:Responsive grid layout

HTML

```
<body>

  <h1>Responsive Grid Layout</h1>

  <div class="grid-container">

    <div class="grid-item">1</div>

    <div class="grid-item">2</div>

    <div class="grid-item">3</div>

    <div class="grid-item">4</div>

    <div class="grid-item">5</div>

    <div class="grid-item">6</div>

  </div>

</body>

</html>
```

CSS

```
body{

  font-family: Arial, sans-serif;

  margin: 20px;

}


.grid-container {

  display: grid;

  grid-template-columns: repeat(auto-fit, minmax(150px, 1fr));

  gap: 15px;
```

```
}
```

```
.grid-item {  
  background: #4a90e2;  
  color: white;  
  font-size: 20px;  
  display: flex;  
  justify-content: center;  
  align-items: center;  
  padding: 30px;  
  border-radius: 10px;  
}
```

Challenge 2: Interactive Product card

HTML

```
<body>  
  <h1>Interactive Product Card</h1>  
  <div class="product-card">  
      
    <h2>Cool Sneakers</h2>  
    <p>Stylish and comfortable sneakers for everyday wear.</p>  
    <span class="price">$79.99</span>  
    <button>Add to Cart</button>  
  </div>  
</body>  
</html>
```

CSS

```
body{  
  font-family: Arial, sans-serif;  
  margin: 20px;  
  display: flex;  
  justify-content: center;  
}
```

```
.product-card {  
  background: #fff;  
  border: 1px solid #ddd;  
  border-radius: 12px;  
  width: 280px;  
  padding: 20px;  
  text-align: center;  
  box-shadow: 0 4px 6px rgba(0,0,0,0.1);  
  transition: transform 0.3s ease, box-shadow 0.3s ease;  
}
```

```
.product-card:hover {  
  transform: translateY(-8px);  
  box-shadow: 0 8px 16px rgba(0,0,0,0.2);  
}
```

```
.product-card img {  
  width: 100%;  
  border-radius: 10px;  
}
```

```
.product-card h2 {  
  font-size: 22px;  
  margin: 15px 0 10px;  
}
```

```
.product-card p {  
  font-size: 14px;  
  color: #666;  
}
```

```
.product-card .price {  
  font-size: 20px;  
  font-weight: bold;  
  color: #27ae60;  
  display: block;  
  margin: 10px 0;  
}
```

```
.product-card button {  
  background: #27ae60;  
  color: #fff;  
  border: none;  
  padding: 10px 20px;  
  border-radius: 8px;  
  cursor: pointer;  
  transition: background 0.3s ease;  
}
```

```
.product-card button:hover {  
  background: #219150;  
}
```

Project 3

HTML

```
<body>  
  
  <header><h1>Project 3</h1></header>  
  
  <main class="masonry" aria-live="polite">  
  
    <!-- Varying content heights create the masonry look -->  
  
    <article class="card">  
  
        
  
      <div class="content">  
  
        <h3>Building a Profile Card</h3>  
  
        <p>Use semantic markup and the box model to create a clean profile card.</p>  
  
      </div>  
  
    </article>  
  
    <article class="card">  
  
        
  
      <div class="content">  
  
        <h3>Responsive Grid</h3>  
  
        <p>Create a 12-column responsive grid using CSS Grid or columns.</p>  
  
      </div>  
  
    </article>  
  
    <article class="card">  
  
        
  
      <div class="content">
```

```
<h3>Accessible Forms</h3>
```

```
<p>Labels, descriptions, validation hints, and focus states—no JS required.</p>
```

```
</div>
```

```
</article>
```

```
<article class="card">
```

```

```

```
<div class="content">
```

```
<h3>Typography Scale</h3>
```

```
<p>Use CSS variables to create a fluid type scale across breakpoints.</p>
```

```
</div>
```

```
</article>
```

```
<article class="card">
```

```

```

```
<div class="content">
```

```
<h3>CSS-Only Accordion</h3>
```

```
<p>Leverage &lt;details> for progressive disclosure and keyboard access.</p>
```

```
</div>
```

```
</article>
```

```
<article class="card">
```

```

```

```
<div class="content">
```

```
<h3>Color Systems</h3>
```

```
<p>Design tokens + contrast ratios for accessibility.</p>
```

```
</div>
```

```
</article>
```

```
<article class="card">
```

```

```

```
<div class="content">
```

```
<h3>Sticky Footer Layout</h3>

<p>Grid/flex patterns that keep your footer at the bottom on short pages.</p>

</div> </article>

<article class="card">

  

  <div class="content">

    <h3>Hover States</h3>

    <p>Design meaningful feedback without harming focus visibility.</p>

  </div>

</article>

</main>

</body>

</html>
```

CSS

```
:root { --gap: 1rem; --card-radius: 12px; }

body {

  font-family: system-ui, Arial, sans-serif;

  margin: 0;

  background: #f6f7f9;

  color: #222;

}

header {

  padding: 1rem 1.25rem;

  background: #fff;

  position: sticky; top: 0;

  border-bottom: 1px solid #e5e7eb;

}
```

```
h1 { margin: 0; font-size: 1.25rem; }
```

```
/* Masonry container using CSS multi-columns */
```

```
.masonry {  
  column-gap: var(--gap);  
  /* Default (desktop) columns */  
  column-count: 4;  
  padding: var(--gap);  
  max-width: 1200px;  
  margin: 0 auto;  
}
```

```
/* Card */
```

```
.card {  
  display: inline-block;    /* required for multi-column children */  
  width: 100%;             /* take full column width */  
  margin: 0 0 var(--gap);  /* space between cards vertically */  
  background: #fff;  
  border-radius: var(--card-radius);  
  box-shadow: 0 6px 14px rgba(0,0,0,.07);  
  overflow: hidden;        /* clip rounded corners for images */  
  break-inside: avoid;     /* prevent column breaks inside a card */  
}
```

```
.card img {  
  display: block;  
  width: 100%;  
  height: auto;
```



```
}
```

```
.card .content {  
  padding: 0.85rem 1rem 1rem;  
}
```

```
.card h3 {  
  margin: 0 0 .25rem;  
  font-size: 1rem;  
}
```

```
.card p {  
  margin: 0;  
  line-height: 1.45;  
  color: #444;  
  font-size: .95rem;  
}
```

```
/* Hover/focus feedback (accessibility) */
```

```
.card:focus-within,  
.card:hover {  
  box-shadow: 0 10px 24px rgba(0,0,0,.12);  
  transform: translateY(-1px);  
}
```

```
.card a {  
  color: inherit;  
  text-decoration: none;  
  outline: none;  
}
```

```
.card a:focus {
```

```
box-shadow: 0 0 0 3px #2563eb55;  
border-radius: 6px;  
}
```

```
/* Responsive columns */
```

```
@media (max-width: 1100px) { .masonry { column-count: 3; } }
```

```
@media (max-width: 800px) { .masonry { column-count: 2; } }
```

```
@media (max-width: 520px) { .masonry { column-count: 1; } }
```