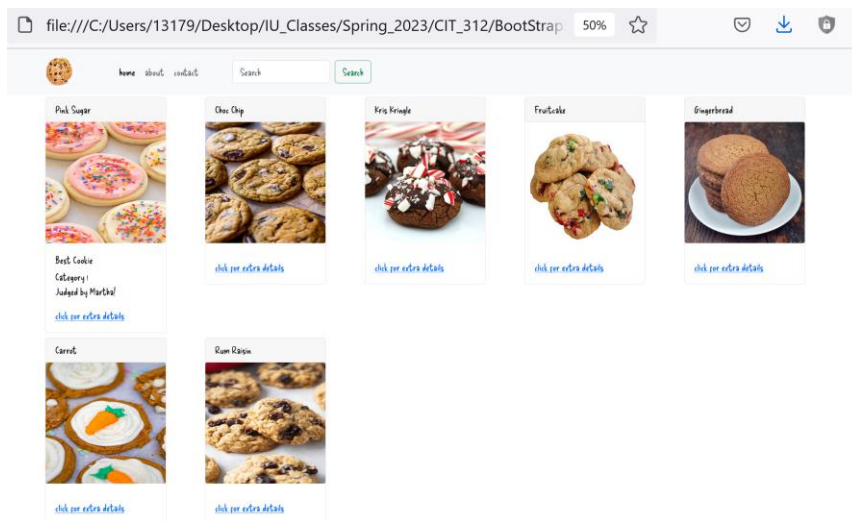


In this Bootstrap lab, you will

- develop the markup and apply styles to associate card content with specific tags
- develop a Bootstrap navbar menu, with a search bar and branding
- populate a Bootstrap container with Bootstrap cards
- add responsiveness to the Bootstrap container, by applying Bootstrap breakpoint classes

You will end up with Bootstrap content similar to this:-



Bootstrap is a very large platform. Typically, even developers experienced in web design *and* Bootstrap, refer to the Bootstrap documentation when adding a new Bootstrap feature. The other important consideration is that changes are applied across the different versions of a platform, like Bootstrap. You should always check for updates and revised techniques. Between Bootstrap 3 and Bootstrap 4, there have been a significant amount of changes and additions.

Step 1: Create a standard web page, with links to enable Bootstrap

```
<head>
...
<link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
```

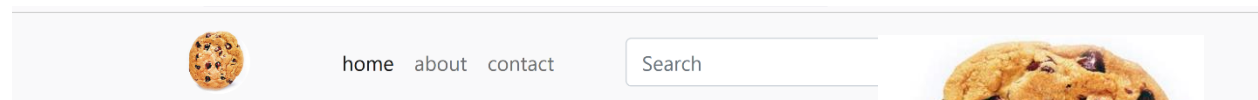
```

    rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous"
  />
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.10.3/font/bootstrap-icons.css"
  />
  <link rel="preconnect" href="https://fonts.googleapis.com" />
  <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />
  <link
    href="https://fonts.googleapis.com/css2?family=Delicious+Handrawn&display=swap"
    rel="stylesheet"
  />
  <script
    src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"
    integrity="sha384-
MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNSfAP+JcXn/tWtIaxVXM"
    crossorigin="anonymous"
  ></script>
</head>

```

Step 2) Add a Bootstrap navbar styled menu, branding and search bar

Branding is the term given to use of a company specific slogan (text) or logo(image), or other text or image that describes the company behind the web pages, like the cookie shown below.



You can use this image, or create your own, for the brandi



There are a couple of steps here too, let's take each step in sequence.

1 – The navbar container, navbar class

The different parts of the menu bar (here, just the branding, the menu item links, and the search bar, but there could be more, like authentication) are created as items inside a container. Bootstrap class, navbar, is the base class. Applying this class to a nav element as opposed to a div or other generic element, is supportive of assistive technology.

```
<nav class="navbar .....">
```

A key part of a professional menu bar is responsiveness, and that ties into a later step here, use of a hamburger menu. We want to make sure that the menu bar extends across the screen when the screen width is larger, and collapses at smaller widths, with display of an expected hamburger menu.

```
<nav class="navbar navbar-expand-md ....">
```

The navbar-expand-md class encompasses the CSS and JavaScript behind this, and is all that needs to be specified.

Menus and the font used are entirely up to the designer, however Bootstrap provides a base set of colour options. Below, we use bg-light teamed with navbar-light. The navbar-light class assumes a light background for the navbar, and uses a dark foreground colour to complement this.

```
<nav class="navbar navbar-expand-md navbar-light bg-light">...</nav>
```

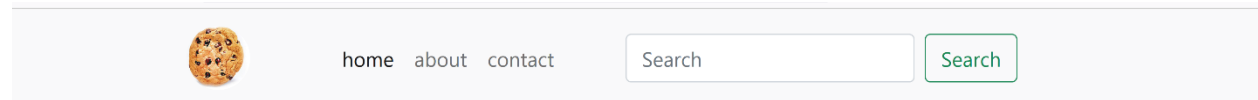
Inside this nav, add a simple container to help with alignment and to keep the other parts of the menu bar together.

```
<nav class="navbar navbar-expand-md navbar-light bg-light">  
  <div class="container"></div>  
</nav>
```

That's put the navbar container in place, now let's add the content.

2 – The branding

Newish term, special place and special tags in the navbar. This is the term used to represent what the company stands for, or what best represents the page background – it could be an expression, just text, or a special image, or both. This is often used to navigate to the company home page, so it is commonly represented as *a link*, an *a tag*.



This branding tag can go to the left or the right of the menu links and search bar, or even below the links. Standard placement (see Pinterest, <https://www.pinterest.com/>) is on the left side of the menu bar. It will render as placed or as styled, Bootstrap doesn't have any default positioning.

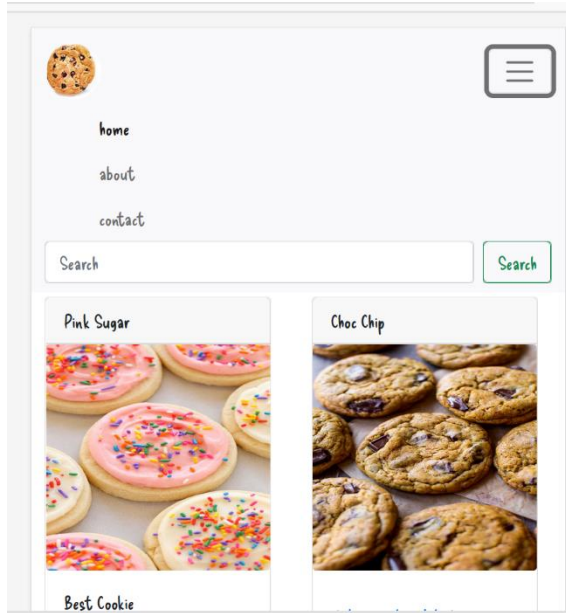
Add this markup inside the container,

```
<a class="navbar-brand" href="#"  
  ></a>
```

The inline styling here is obviously subject to change, depending on what looks the best on the bar.

3 – The Hamburger Menu Icon, and Associations

The hamburger menu has a standard representation, the horizontal bars. It can be rendered as an icon, but Bootstrap has a class (of course). This is a toggle button, because it effects a change of state (menu hidden to menu visible, and vice versa).



The *target* of the button is the displayable menu, which is contained in another element.

A special class of navbar-toggler is applied to the button element, with the data-bs-toggle property set to collapse (we do not want to see the hamburger icon until the screen is not in expanded form).

The collapse state is important in advanced use of Bootstrap, and is typically controlled by server side code, as well as any UI platform (like Bootstrap).

<https://getbootstrap.com/docs/5.0/components/collapse/>

The id, navMenu, is the id of the markup containing the menu links.

```
<button
  class="navbar-toggler"
  type="button"
  data-bs-toggle="collapse"
  data-bs-target="#navMenu"
>
  ....
</button>
```

In the button, the typical horizontal bars icon is placed. This can be done with a span tag, Bootstrap has a special class, navbar-toggler-icon. You can also use an image.

```
<button
  class="navbar-toggler"
  type="button"
  data-bs-toggle="collapse"
  data-bs-target="#navMenu"
>
  <span class="navbar-toggler-icon"></span>
</button>
```

3 – The Menu Links

When the page opens up full screen, the menu bar should be displayed. Typically this is in horizontal form to take best advantage of the screen width. Typically, the menu item links (for the web site) are placed after the branding, and before any other menu bar enhancement (like a search bar).

Also, the collapse effect is controlled by the hamburger menu button, so we associate the id of the element containing the menu bar, with the id specified for data-bs-target in the hamburger menu.

```
<div class="collapse navbar-collapse" id="navMenu">
  <ul class="navbar-nav mx-5">
    <li class="nav-item">
      <a class="nav-link active" href="#">home</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">about</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">contact</a>
    </li>
  </ul>
</div>
```

The links are styled as they were for the navigational links in Bootstrap, and use of a list is recommended as the most friendly format for assistive technology.

Associating classes, collapse and navbar-collapse, with the container for the menu bar, are required for working with the hamburger menu.

Here, the tag has navbar-nav applied, to point to the element with the menu links in the navbar. The links for the list items and a tags are the same.

4 – The Search Bar

A search bar is a common feature especially for commercial web sites, here are some examples:

- <https://www.costco.com/>
- <https://www.penzey.com/>

Although it is only a placeholder here in this lab, you could use the search bar to filter the content of, for instance, cards in a card container.

Here in the lab, we placed the search bar inside collapsible area. It is entirely up to the web site designer to place this featured item appropriately.

```
<div class="collapse navbar-collapse" id="navMenu">
  <ul class="navbar-nav mx-5">
    ....
  </ul>
  <form class="d-flex">
    <input
      class="form-control me-2"
      type="search"
      placeholder="Search"
    />
    <button class="btn btn-outline-success" type="submit" id="look_for">
      Search
    </button>
  </form>
</div>
```

The search bar comprises an input field, type of search, and a button. It is a good idea to wrap both of these controls in a form, and the focus here is design and assistive technology. The d-flex class is recommended on the Bootstrap site, and is representative of ‘display: flex’. It keeps the input field and the button in the same container, with the behavior mirroring flex items.

Step 3) Add a container for cards

This step is not going to be seen to be effective until after we add some other elements to the container. For now, let's add a placeholder.

```
<div class="row row-cols-sm-2 row-cols-md-3 row-cols-lg-4 row-cols-xl-5">  
</div>
```

It should be clear that the container will eventually have a grid of rows and columns.

Here is how the classes support responsiveness in the container.

class	impact
row	The container uses a bootstrap grid
row-cols-sm-2	At the small-medium breakpoint, the row should contain 2 columns
row-cols-md-3	At the medium breakpoint, the row should contain 3 columns
row-cols-lg-4	At the large breakpoint, the row should contain 4 columns
row-cols-xl-5	At the extra large breakpoint, the row should contain 5 columns

Step 4) The Card Template

The Bootstrap card class is used extensively across commercial web pages. Elements of this class act as a container for other card parts, like a heading and imagery. Cards lose effectiveness when there are no images used, so you should make inclusion of an appropriate image a priority in designing the card content. Although you do not have to include all of the card classes, you should at least include an image with a heading, and some additional content.

In this lab, we use a cookie example.

Here is a typical card layout, taken directly from the Bootstrap documentation at <https://getbootstrap.com/docs/5.0/components/card/>

```
<div class="card my-1" style="width: 200px">  
  <div class="card-header">Pink Sugar</div>
```



```


<div class="card-body">
  <div class="card-title">Best Cookie</div>
  <div class="card-subtitle">Category 1</div>
  <p class="card-text">Judged by Martha!</p>
  <a href="#" class="card-link">click for extra details</a>
</div>
</div>

```

Some inline styling has been applied to the card, as well as a margin of 1 unit vertically.

The image used may skew the card, depending on the size, so it's a good idea to apply some additional styling for images in a card.

```

.card img {
  width: 100%;
  height: 200px;
}

```

This card should be placed in a column, although Bootstrap could work out the context if the column is omitted.

```

<div class="col">
  <div class="card my-1" style="width: 200px">
    ...
  </div>
</div>

```

Now finish the content, add more cards, but with different content. Here is a dataset you can use and a set of associated images. Note that the code takes an image from a cookies folder.

Pink Sugar	Cookie1.jpg
Choc Chip	Cookie2.jpg
Kris Kringle	Cookie3.jpg
Fruitcake	Cookie4.jpg
Gingerbread	Cookie5.jpg
Carrot	Cookie6.jpg

Rum Raisin	Cookie7.jpg
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The end result should look similar to the image shown at the top, with the hamburger menu functioning as expected, and the container responding appropriately to different breakpoints.