1. Explain how divs and classes with containers in bootstrap are used to create a responsive webpage. Include code snippets in your explanation for your project containers.

Content within a div tag will inherit properties from classes. In this case we apply a container property to the content. I prefer container-fluid, to ensure proper breakpoints all the way through, even into 4K monitors, and future implementations. I also tend to use my web browser windows in resized portions to move around the screen and use other apps. This behavior has proven useful in the past.

A container must be specified to ensure a web page is responsive. Otherwise the content does not change its width at all potentially.

Container-fluid will ensure that content uses 100% of the available width of the screen. This is necessary for the plethora of devices that have access to web resources. An example is a smartphone. Folks can use the smartphone either in portrait or landscape. This simple feature will change the width of the screen via orientation of the device. Content that does not respond remains the same width, and one would have to scroll horizontally to view the content, more so in portrait than in landscape.

With container-fluid, the device can be in portrait, and the content will be confined, however scrolling horizontally will not be necessary, because the content will adjust its width to fit the screen, and will space itself down the page to compensate for the narrower width. In landscape mode, the width of the content will be greater and will not space the content so far down the page, because less compensation is necessary with the greater width of usable screen real estate. At any moment though, the page can change its width of content with this implementation, and without the page refreshing (which runs the risk of losing entered data for example).

Containers make web development much more responsive in the sense that the resilience is more conveniently applied to a larger set of devices in the consumer wilderness with innovations in production and software development, with mutually beneficial results for one another.

2. Explain 4 design concepts you implemented to make your website accessible. Include screenshots and code in your explanation.

-Bullet points increase readability of technical skills
Please see the screenshot in step 4 of this document.

Python
Djagno

-Large colors, large buttons
Please see the screenshot in step 4 of this document.
This helps users with low vision to recognize buttons, without accidental clicking, as even with a screen reader, a button/link could be easily clicked.
The btn-lg style really helps here
<button type="button" class="w-100 btn btn-lg btn-primary">Show This Project</button>

-Written in plain English
Please see the screenshot in step 4 of this document.

This helps users on the autistic spectrum read the page content.
Lists combined with a maximum of simple sentences were used in the code.

Python
Djagno

-Follow a linear, logical layout
This helps users of screen readers
No code to simulate this, following the GE04 instructions and provided employability
   resources encouraged us to follow the optimal layout for interest in our resume.

3. Copy and paste your code from your html document you created.
https://onecompiler.com/bootstrap/3zpznejrm
Also attached as the following three files:
-bootstrap-index.html
-bootstrap-script.js
-bootstrap-styles.css

Bootstrap-index.html
<!DOCTYPE html>
<!-- https://onecompiler.com/bootstrap/3zpznejrm -->
<html lang="en">
<head>
 <title>Bootstrap 5 Example</title>
 <meta charset="utf-8">
 <meta name="viewport" content="width=device-width, initial-scale=1">
 <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css"
   rel="stylesheet">
 <script
   src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle.min.js"></
   script>
</head>
<body>
<nav class="navbar navbar-expand-sm navbar-dark bg-dark" aria-label="Third navbar
   example">
  <div class="container-fluid">
   GE04 Portfolio
   <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-
   target="#navbarsExample03" aria-controls="navbarsExample03" aria-
   expanded="false" aria-label="Toggle navigation">

   </button>

   <div class="collapse navbar-collapse" id="navbarsExample03">
    <ul class="navbar-nav me-auto mb-2 mb-sm-0">

```html
      <li class="nav-item">
        <a class="nav-link active" aria-current="page" href="#">Home</a>
      </li>
      <li class="nav-item">
        <a class="nav-link" href="#">Link</a>
      </li>
      <li class="nav-item">
        <a class="nav-link disabled">Disabled</a>
      </li>
      <li class="nav-item dropdown">
        <a class="nav-link dropdown-toggle" href="#" data-bs-toggle="dropdown" aria-expanded="false">Account</a>
        <ul class="dropdown-menu">
          <li><a class="dropdown-item" href="#">Sign In</a></li>
          <li><a class="dropdown-item" href="#">Sign Up</a></li>
        </ul>
      </li>
    </ul>
    <form role="search">
      <input class="form-control" type="search" placeholder="Search" aria-label="Search">
    </form>
   </div>
  </div>
 </nav>
<div class="container-fluid p-5 bg-primary text-white text-center">
 <h1>My Portfolio</h1>
</div>
<div-class="container-fluid">
 <h3>Christopher Colvin</h3>
</div-class>
<!-- Link to Academic Degrees & Programs -->
<div-class="container-fluid">
 <a href="https://eas.uccs.edu/cs/academics/graduate-programs/phd-in-engineering-concentration-in-security"
 target="_blank">
 Computer Science PhD in Security</a>
</div>
<div-class="container-fluid">
 <p>Graduate student pursuing my Computer Science PhD in Security
 with nine years' experience in Cybersecurity contracting, two years' experience
    instructing, and one year experience in formal research.
 Interested in customized Cybersecurity engineering focused on Critical Systems and
    Infrastructure.
 Eligible for top secret or sensitive compartmented information (TS/SCI) clearance.</p>
</div>
<div-class="container-fluid">
 <h5>Technical Skills</h5>
 <ul>
```

```
    <li>Android and Apple iOS</li>
    <li>Raspberry Pi</li>
    <li>C, C++, and C#</li>
    <li>Django</li>
    <li>Eclipse</li>
    <li>Git and GitHub</li>
    <li>Java and JavaScript</li>
    <li>HTML and CSS</li>
    <li>jGRASP</li>
    <li>LaTeX</li>
    <li>Linux/Unix/Windows</li>
    <li>PHP</li>
    <li>PyCharm</li>
    <li>Python</li>
    <li>SQL/MySQL/Microsoft SQL Server</li>
    <li>Ubuntu/Kali/Mint/Debian</li>
    <li>Visual Studio Code</li>
    <li>Zotero</li>
  </ul>
</div>

<div class="container-fluid row row-cols-1 row-cols-md-3 mb-3 text-center">
    <div class="col">
      <div class="card mb-4 rounded-3 shadow-sm border-primary">
        <div class="card-header py-3 text-bg-primary border-primary">
          <h4 class="my-0 fw-normal">Project Title 1</h4>
        </div>
        <div class="card-body">
          <h5 class="card-title pricing-card-title">Project Contributions</h5>
          <ul class="list-unstyled mt-3 mb-4">
            <li>Highlight 1</li>
            <li>Highlight 2</li>
            <li>Highlight 3</li>
            <li>Highlight 4</li>
          </ul>
          <button type="button" class="w-100 btn btn-lg btn-primary">Show This
    Project</button>
        </div>
      </div>
    </div>
    <div class="col">
      <div class="card mb-4 rounded-3 shadow-sm border-primary">
        <div class="card-header py-3 text-bg-primary border-primary">
          <h4 class="my-0 fw-normal">Project Title 2</h4>
        </div>
        <div class="card-body">
          <h5 class="card-title pricing-card-title">Project Contributions</h5>
          <ul class="list-unstyled mt-3 mb-4">
            <li>Highlight 1</li>
```

```html
          <li>Highlight 2</li>
          <li>Highlight 3</li>
          <li>Highlight 4</li>
        </ul>
        <button type="button" class="w-100 btn btn-lg btn-primary">Show This
    Project</button>
      </div>
    </div>
  </div>
  <div class="col">
    <div class="card mb-4 rounded-3 shadow-sm border-primary">
      <div class="card-header py-3 text-bg-primary border-primary">
        <h4 class="my-0 fw-normal">Project Title 3</h4>
      </div>
      <div class="card-body">
        <h5 class="card-title pricing-card-title">Project Contributions</h5>
        <ul class="list-unstyled mt-3 mb-4">
          <li>Highlight 1</li>
          <li>Highlight 2</li>
          <li>Highlight 3</li>
          <li>Highlight 4</li>
        </ul>
        <button type="button" class="w-100 btn btn-lg btn-primary">Show This
    Project</button>
      </div>
    </div>
  </div>
</div>


</body>
</html>
```

Bootstrap-script.js
```js
$( document ).ready(function() {
 $( "#hi" ).click(function() {
    $("#alert-div").toggle();
 });
});
```

Boostrap-styles.css
```css
body {
 padding: 25px;
}
h1 {
 padding-bottom: 15px;
}
```

```css
.alert {
  margin-top: 25px;
}
.bg-dark {
  --bs-bg-opacity: 1;
  background-color: rgba(var(--bs-dark-rgb),var(--bs-bg-opacity)) !important;
}
.container,
.container-fluid,
.container-xxl,
.container-xl,
.container-lg,
.container-md,
.container-sm {
  --bs-gutter-x: 1.5rem;
  --bs-gutter-y: 0;
  width: 100%;
  padding-right: calc(var(--bs-gutter-x) * 0.5);
  padding-left: calc(var(--bs-gutter-x) * 0.5);
  margin-right: auto;
  margin-left: auto;
}
.dropdown-menu {
  margin: 4rem auto;
  margin-right: auto;
  margin-left: auto;
}
.form-control {
  display: block;
  width: 100%;
  padding: 0.375rem 0.75rem;
  font-size: 1rem;
  font-weight: 400;
  line-height: 1.5;
  color: #212529;
  background-color: #fff;
  background-clip: padding-box;
  border: 1px solid #ced4da;
  -webkit-appearance: none;
  -moz-appearance: none;
  appearance: none;
  border-radius: 0.375rem;
  transition: border-color 0.15s ease-in-out, box-shadow 0.15s ease-in-out;
}
.collapse:not(.show) {
  display: none;
}
.dropup,
```

```css
.dropend,
.dropdown,
.dropstart,
.dropup-center,
.dropdown-center {
  position: relative;
}
.dropdown-item {
  display: block;
  width: 100%;
  padding: var(--bs-dropdown-item-padding-y) var(--bs-dropdown-item-padding-x);
  clear: both;
  font-weight: 400;
  color: var(--bs-dropdown-link-color);
  text-align: inherit;
  text-decoration: none;
  white-space: nowrap;
  background-color: transparent;
  border: 0;
}
.dropdown-item:hover, .dropdown-item:focus {
  color: var(--bs-dropdown-link-hover-color);
  background-color: var(--bs-dropdown-link-hover-bg);
}
.dropdown-item.active, .dropdown-item:active {
  color: var(--bs-dropdown-link-active-color);
  text-decoration: none;
  background-color: var(--bs-dropdown-link-active-bg);
}
.dropdown-item.disabled, .dropdown-item:disabled {
  color: var(--bs-dropdown-link-disabled-color);
  pointer-events: none;
  background-color: transparent;
}
.dropdown-menu {
  --bs-dropdown-zindex: 1000;
  --bs-dropdown-min-width: 10rem;
  --bs-dropdown-padding-x: 0;
  --bs-dropdown-padding-y: 0.5rem;
  --bs-dropdown-spacer: 0.125rem;
  --bs-dropdown-font-size: 1rem;
  --bs-dropdown-color: #212529;
  --bs-dropdown-bg: #fff;
  --bs-dropdown-border-color: var(--bs-border-color-translucent);
  --bs-dropdown-border-radius: 0.375rem;
  --bs-dropdown-border-width: 1px;
  --bs-dropdown-inner-border-radius: calc(0.375rem - 1px);
  --bs-dropdown-divider-bg: var(--bs-border-color-translucent);
  --bs-dropdown-divider-margin-y: 0.5rem;
```

```css
  --bs-dropdown-box-shadow: 0 0.5rem 1rem rgba(0, 0, 0, 0.15);
  --bs-dropdown-link-color: #212529;
  --bs-dropdown-link-hover-color: #1e2125;
  --bs-dropdown-link-hover-bg: #e9ecef;
  --bs-dropdown-link-active-color: #fff;
  --bs-dropdown-link-active-bg: #0d6efd;
  --bs-dropdown-link-disabled-color: #adb5bd;
  --bs-dropdown-item-padding-x: 1rem;
  --bs-dropdown-item-padding-y: 0.25rem;
  --bs-dropdown-header-color: #6c757d;
  --bs-dropdown-header-padding-x: 1rem;
  --bs-dropdown-header-padding-y: 0.5rem;
  position: absolute;
  z-index: var(--bs-dropdown-zindex);
  display: none;
  min-width: var(--bs-dropdown-min-width);
  padding: var(--bs-dropdown-padding-y) var(--bs-dropdown-padding-x);
  margin: 0;
  font-size: var(--bs-dropdown-font-size);
  color: var(--bs-dropdown-color);
  text-align: left;
  list-style: none;
  background-color: var(--bs-dropdown-bg);
  background-clip: padding-box;
  border: var(--bs-dropdown-border-width) solid var(--bs-dropdown-border-color);
  border-radius: var(--bs-dropdown-border-radius);
}
.dropdown-menu[data-bs-popper] {
  top: 100%;
  left: 0;
  margin-top: var(--bs-dropdown-spacer);
}
.dropdown-toggle {
  white-space: nowrap;
}
.dropdown-toggle::after {
  display: inline-block;
  margin-left: 0.255em;
  vertical-align: 0.255em;
  content: "";
  border-top: 0.3em solid;
  border-right: 0.3em solid transparent;
  border-bottom: 0;
  border-left: 0.3em solid transparent;
}
.dropdown-toggle:empty::after {
  margin-left: 0;
}
.mb-2 {
```

```css
    margin-bottom: 0.5rem !important;
}
.mb-sm-0 {
  margin-bottom: 0 !important;
}
.me-auto {
  margin-right: auto !important;
}

.nav-link {
  display: block;
  padding: var(--bs-nav-link-padding-y) var(--bs-nav-link-padding-x);
  font-size: var(--bs-nav-link-font-size);
  font-weight: var(--bs-nav-link-font-weight);
  color: var(--bs-nav-link-color);
  text-decoration: none;
  transition: color 0.15s ease-in-out, background-color 0.15s ease-in-out, border-color
    0.15s ease-in-out;
}
@media (prefers-reduced-motion: reduce) {
  .nav-link {
    transition: none;
  }
}
.navbar {
  --bs-navbar-padding-x: 0;
  --bs-navbar-padding-y: 0.5rem;
  --bs-navbar-color: rgba(0, 0, 0, 0.55);
  --bs-navbar-hover-color: rgba(0, 0, 0, 0.7);
  --bs-navbar-disabled-color: rgba(0, 0, 0, 0.3);
  --bs-navbar-active-color: rgba(0, 0, 0, 0.9);
  --bs-navbar-brand-padding-y: 0.3125rem;
  --bs-navbar-brand-margin-end: 1rem;
  --bs-navbar-brand-font-size: 1.25rem;
  --bs-navbar-brand-color: rgba(0, 0, 0, 0.9);
  --bs-navbar-brand-hover-color: rgba(0, 0, 0, 0.9);
  --bs-navbar-nav-link-padding-x: 0.5rem;
  --bs-navbar-toggler-padding-y: 0.25rem;
  --bs-navbar-toggler-padding-x: 0.75rem;
  --bs-navbar-toggler-font-size: 1.25rem;
  --bs-navbar-toggler-icon-bg: url("data:image/svg+xml,%3csvg
    xmlns='http://www.w3.org/2000/svg' viewBox='0 0 30 30'%3e%3cpath stroke='rgba
    %280, 0, 0, 0.55%29' stroke-linecap='round' stroke-miterlimit='10' stroke-width='2'
    d='M4 7h22M4 15h22M4 23h22'/%3e%3c/svg%3e");
  --bs-navbar-toggler-border-color: rgba(0, 0, 0, 0.1);
  --bs-navbar-toggler-border-radius: 0.375rem;
  --bs-navbar-toggler-focus-width: 0.25rem;
  --bs-navbar-toggler-transition: box-shadow 0.15s ease-in-out;
  margin-bottom: 20px;
```

```css
  position: relative;
  display: flex;
  flex-wrap: wrap;
  align-items: center;
  justify-content: space-between;
  padding: var(--bs-navbar-padding-y) var(--bs-navbar-padding-x);
}
.navbar-brand {
  padding-top: var(--bs-navbar-brand-padding-y);
  padding-bottom: var(--bs-navbar-brand-padding-y);
  margin-right: var(--bs-navbar-brand-margin-end);
  font-size: var(--bs-navbar-brand-font-size);
  color: var(--bs-navbar-brand-color);
  text-decoration: none;
  white-space: nowrap;
}
.navbar-brand:hover, .navbar-brand:focus {
  color: var(--bs-navbar-brand-hover-color);
}
.navbar-collapse {
  flex-basis: 100%;
  flex-grow: 1;
  align-items: center;
}
.navbar-dark {
  --bs-navbar-color: rgba(255, 255, 255, 0.55);
  --bs-navbar-hover-color: rgba(255, 255, 255, 0.75);
  --bs-navbar-disabled-color: rgba(255, 255, 255, 0.25);
  --bs-navbar-active-color: #fff;
  --bs-navbar-brand-color: #fff;
  --bs-navbar-brand-hover-color: #fff;
  --bs-navbar-toggler-border-color: rgba(255, 255, 255, 0.1);
  --bs-navbar-toggler-icon-bg: url("data:image/svg+xml,%3csvg
    xmlns='http://www.w3.org/2000/svg' viewBox='0 0 30 30'%3e%3cpath stroke='rgba
    %28255, 255, 255, 0.55%29' stroke-linecap='round' stroke-miterlimit='10' stroke-
    width='2' d='M4 7h22M4 15h22M4 23h22'/%3e%3c/svg%3e");
}
@media (min-width: 576px)
  .navbar-expand-sm {
    flex-wrap: nowrap;
    justify-content: flex-start;
}
.navbar-nav {
  --bs-nav-link-padding-x: 0;
  --bs-nav-link-padding-y: 0.5rem;
  --bs-nav-link-font-weight: ;
  --bs-nav-link-color: var(--bs-navbar-color);
  --bs-nav-link-hover-color: var(--bs-navbar-hover-color);
  --bs-nav-link-disabled-color: var(--bs-navbar-disabled-color);
```

```css
  display: flex;
  flex-direction: column;
  padding-left: 0;
  margin-bottom: 0;
  list-style: none;
}
.navbar-toggler {
  padding: var(--bs-navbar-toggler-padding-y) var(--bs-navbar-toggler-padding-x);
  font-size: var(--bs-navbar-toggler-font-size);
  line-height: 1;
  color: var(--bs-navbar-color);
  background-color: transparent;
  border: var(--bs-border-width) solid var(--bs-navbar-toggler-border-color);
  border-radius: var(--bs-navbar-toggler-border-radius);
  transition: var(--bs-navbar-toggler-transition);
}
@media (prefers-reduced-motion: reduce) {
  .navbar-toggler {
    transition: none;
  }
}
.navbar-toggler:focus {
  text-decoration: none;
  outline: 0;
  box-shadow: 0 0 0 var(--bs-navbar-toggler-focus-width);
}
.navbar-toggler:hover {
  text-decoration: none;
}
.navbar-toggler-icon {
  display: inline-block;
  width: 1.5em;
  height: 1.5em;
  vertical-align: middle;
  background-image: var(--bs-navbar-toggler-icon-bg);
  background-repeat: no-repeat;
  background-position: center;
  background-size: 100%;
}
.nav-fill > .nav-link,
.nav-fill .nav-item {
  flex: 1 1 auto;
  text-align: center;
}
.navbar-nav .show > .nav-link,
.navbar-nav .nav-link.active {
  color: var(--bs-navbar-active-color);
}
.nav-link.disabled {
```

```css
  color: var(--bs-nav-link-disabled-color);
  pointer-events: none;
  cursor: default;
}
.nav-justified > .nav-link,
.nav-justified .nav-item {
  flex-basis: 0;
  flex-grow: 1;
  text-align: center;
}
```

4. Include a screenshot of your the web page you created.

GE04 Portfolio   Home   Link   Disabled   Account ▾   Search

My Portfolio

Christopher Colvin

[Computer Science PhD in Security](#)

Graduate student pursuing my Computer Science PhD in Security with nine years' experience in Cybersecurity contracting, two years' experience instructing, and one year experience in formal research. Interested in customized Cybersecurity engineering focused on Critical Systems and Infrastructure. Eligible for top secret or sensitive compartmented information (TS/SCI) clearance.

Technical Skills

- Android and Apple iOS
- Raspberry Pi
- C, C++, and C#
- Django
- Eclipse
- Git and GitHub
- Java and JavaScript
- HTML and CSS
- jGRASP
- LaTeX
- Linux/Unix/Windows
- PHP
- PyCharm
- Python
- SQL/MySQL/Microsoft SQL Server
- Ubuntu/Kali/Mint/Debian
- Visual Studio Code
- Zotero

Project Title 1	Project Title 2	Project Title 3
Project Contributions	Project Contributions	Project Contributions
Highlight 1	Highlight 1	Highlight 1
Highlight 2	Highlight 2	Highlight 2
Highlight 3	Highlight 3	Highlight 3
Highlight 4	Highlight 4	Highlight 4
Show This Project	Show This Project	Show This Project