# Intro to Web Development

Dr. Matthew Small / Global Tech Programs



# Final Project Specifications

# Table of Contents

# Overview

The goal of this project is to create a professional portfolio / profile website from scratch using HTML, CSS and Bootstrap.

Here are some of the fundamentals about the project you will develop:

- The site will be a single webpage that has a navigation bar that links between sections of the page (examples from Google search: ex 1, ex 2, ex 3, ex 4).

- The site will utilize Bootstrap and modern CSS styles to realize a responsive design that looks great on various screen sizes.

- In the next course, you'll be creating mini-projects that you would be expected to add to this portfolio site; the goal is that by the end of summer you will have an impressive portfolio of frontend development work to show potential internships, employers, and other opportunities.

- If you already have a portfolio page you had invested time and energy in and prefer to use, please let your teaching team know. In this case, you may complete this project by creating a professional profile page for a fictional character (e.g. Harry Potter, Wonder Woman) or another business professional (e.g. your musician friend). If you do not already have your own portfolio, it is strongly recommended that you use this opportunity to create your first draft of this important professional asset.

We encourage you to think of this project in terms of real-world experience, not a school assignment. This document will give you "stakeholder specifications" for the site you're being asked to build, and your work will be evaluated in the same way a customer treats a website built by a freelance web developer (more details ahead). Many helpful hints and resources are provided, and the teaching team will support your efforts, but **you are required to bring your problem-solving and creativity** to this project, and figure some things out on your own—just like in the real world!

# Resources & Examples

## Color Schemes

As always, you can use a site like colorhunt.co to find a palette. In addition, this website has some really nice options.

## Stock Images and Icons

You may need to find a hero image or something for a logo. The sites unsplash.com and https://pixabay.com/ have lots of great free stock imagery.

For icons, the easiest is to use "font icons" like bootstrap icons. The site https://www.flaticon.com/ offers many free icons and vectors. Another icon resource is iconfinder.com (filter results by "free" to avoid paid icons). Always make sure you verify usage rights / license before grabbing images or other assets from online resources.

## Take a Closer Look at the Sample Sites

Draw inspiration and make sure you understand the design you are aiming for by looking at what the sample sites look like on each device size.

Dr. Small's Profile:

desktop, ipad, mobile

SpongeBob's Profile:

desktop, ipad, mobile

# Grading

In the "real world" our work is generally evaluated along three axes. Web developers must find a balance between these concerns to make the most efficient use of time and effort.

## Functional Requirements (Level 1)

You may make something wonderful but if it doesn't do what the business/customer/user needs it to do then you have a problem.  So meeting the functional requirements set by stakeholders (i.e. your grading team) should be your chief concern for scoring well.

An example of a functional requirement is "have a navbar that is fixed over the page and navigates to the different sections".

## Precision Requirements (Level 2)

After you meet the functional requirements, you should shoot for precision and style. This is the detail work that is easy to get lost in but can really elevate your design.  It means looking at the each section/element of the page to determine if it is looking and behaving according to the plan across various circumstances.

An example of precision  would be "the navbar has a bottom-shadow, is colored on theme, and doesn't accidentally go behind another element on the page when scrolling".

## "Sizzle" (Level Up)

If functional requirements is the steak, then transition effects or innovative layouts are the "sizzle".  These are things that help make your page seem really impressive. Get going on these last since they are least crucial to scoring well.

An example of Sizzle would be "the navbar logo flips around when you hover and shows a different picture".

Just like in the real world, we will not specify every possible "sizzle" element you could come up with for this project. It's important for you to come up with these on your own, as you would on a freelance project where you are trying to "wow" your customer.

# Academic Honesty

In an open source world, the lines around what constitutes "cheating" in code assignments can get a bit blurry. That said, your school's honor code applies here, and—more importantly—copying and pasting code solutions defeats the purpose of taking this course. Please use your integrity, aim to fully learn skills, and if in doubt - ask the teaching team.

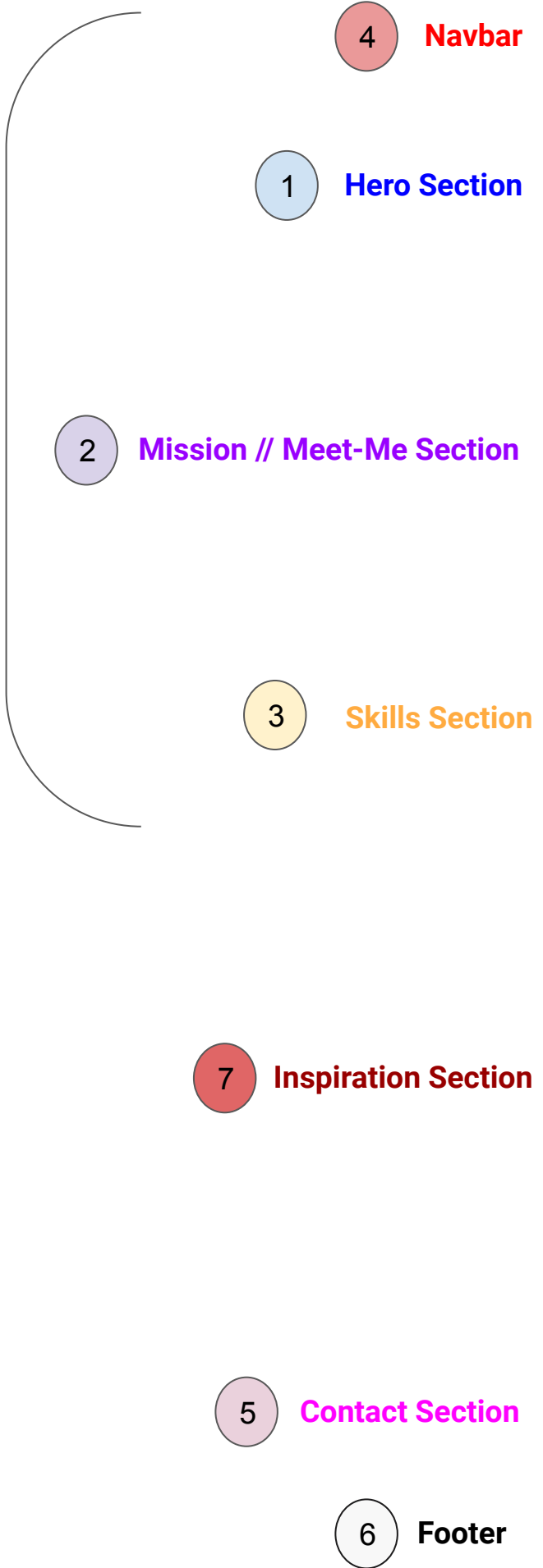To help you find those lines, here are a couple of guidelines:

- You're allowed and encouraged to work with others in Study Hall or on Discord. However, you should think of the code itself as your own "paper", and write everything in it yourself. If you don't understand a solution, don't just paste it in.

- Never share your project's Repl file with a classmate.

  - You are allowed to share your code with others when **asking for assistance**, but please don't share code **solutions** directly with classmates. A good rule of thumb is to avoid sharing code snippets longer than ~5 lines with classmates.

- Try to assist classmates by sharing a link to a resource you found helpful, a Stack Overflow answer, a direction or approach to use, etc. You can also share your screen while discussing code solutions. Remember, you are not doing anyone a favor if you just give them your code. In fact, you are robbing them of an opportunity to learn important skills. This isn't about grades, it's about real life employability.

- Don't use code solutions that you don't fully understand. If the grader feels that your code includes sections you've pasted in without comprehension, they may reach out and ask you about it. You are expected to be able to explain what you did in your project and how.

- Reusing your own code from previous projects or exercises is always okay.
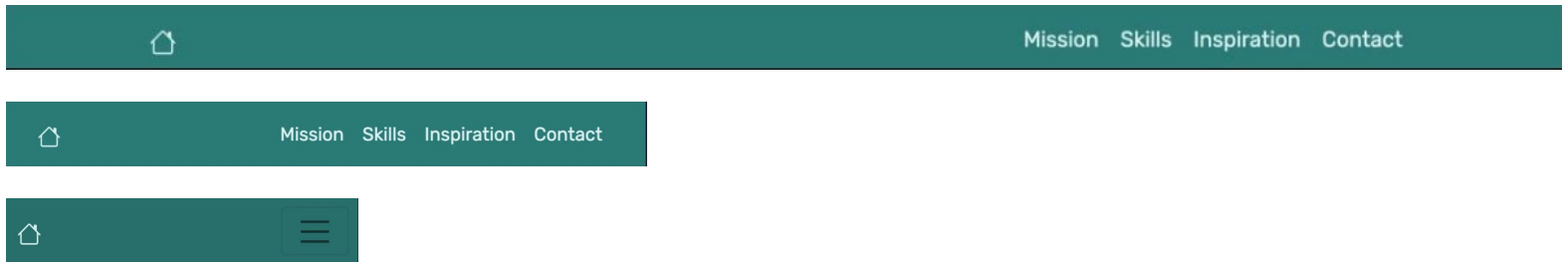
# Project Specifications

In the remainder of the document, find specifications for Level 1 and Level 2 requirements for each of the site's sections. These are organized from top to bottom as they will appear on screen. However, this is not the order in which you should tackle them. See the illustration on the next page for the recommended order of sections to work on.

# Website Anatomy + Recommended Order to Tackle

**Project Milestone - functional only**

**4** Navbar

**1** Hero Section

**2** Mission // Meet-Me Section

**3** Skills Section

**7** Inspiration Section

**5** Contact Section

**6** Footer

# Navbar



The navbar and the inspiration areas are the two most difficult sections to make. Despite being first in this document, you shouldn't start off working on this.

## Functional Requirements (Level 1)

- Should be implemented using the bootstrap navbar component.
- Should have a default bootstrap container that adds space on either side of the content for larger screens.
- Navbar links should be expanded on medium screen sizes and above but be collapsed to a hamburger menu otherwise.
- Navbar links should be internal links targeting sections of the page.
- Should have a branding/logo that, when clicked, brings users "home" to the top of the page.
- Should be fixed to the top of the page even when scrolling.

## Precision Requirements (Level 2)

- Should not use "height" property since it will prevent the menu from opening. Should use min-height instead.
- Should have a shadow on the bottom of the navbar. See this article.
- Should never allow another element to be displayed (i.e. ordered) on top of it; hint: this can happen with other elements removed from the flow.
- There should be a block element added at the top of the page to push down other content since navbar will be "removed from the flow".
- Navbar branding should be on the left while all links should be on the right.

## Hint for next section

Using CSS clamp is REALLY helpful for responsive sizing. We can do things like:
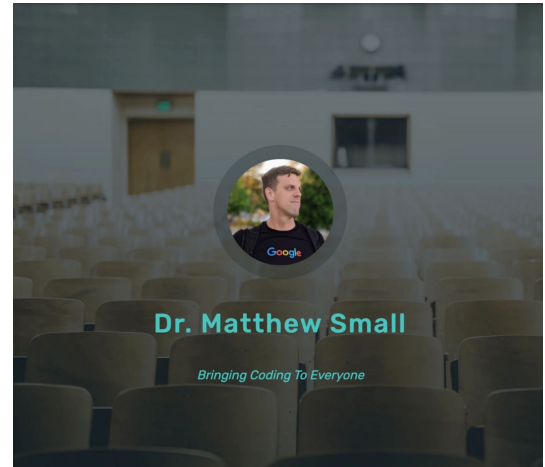
height: clamp(100px, 10vh, 200px); ⬅ Set the height of an element to 10vh if the works out to be between 100 and 200 pixels. Otherwise, use the min/max.

TLDR; Don't try to explicitly control the height of the hero section. Instead, control the height of the content of the hero section and the hero section will expand to fit it.

# Hero Section

We call this the "hero" section because it includes a "hero image", which is just tech lingo for a large banner image that is prominently placed, and typically takes up the full-width of the webpage.

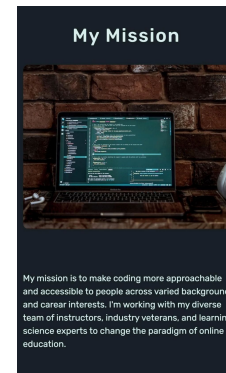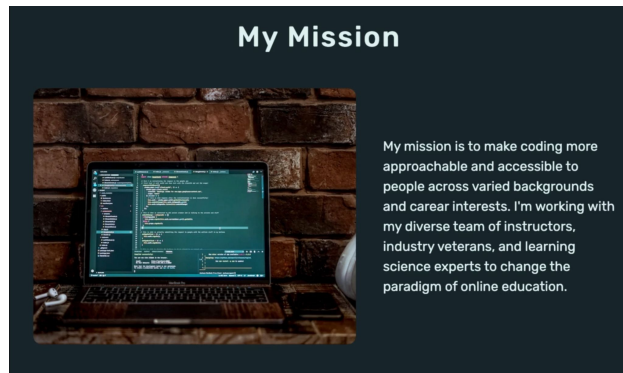This should be the first section you tackle.

## Functional Requirements (Level 1)

- Should have a large background image.
- Should contain a centered circular picture with a border.
  - Note that you don't need a bootstrap container or grid to do this section; 'auto' horizontal margins can help center block elements.
- Should contain a centered name.
- Should contain a centered tagline.
- The *height* of the circular image and *vertical margins or padding* of elements contained in the hero section should scale with viewport height. **Do not set the height of the hero section.**

## Precision Requirements (Level 2)

- The section should take up between 75vh and 100vh on across desktop, tablet, and mobile sizes (again, through responsive content, margin, and padding height - not through responsive section height).
- Text should be very readable against the background through any combination of:
  - color choices
  - dimming gradients on background images
  - text shadows
- The font size should also scale based on *viewport width*.
- The section elements should be generally well proportioned on desktop, tablet, and mobile sizes.

# Mission Section



## Functional Requirements (Level 1)

- Should have centered heading (can be "mission" or "meet me").
- Section content (header optional) should be contained in a [default bootstrap container](#).
- Should contain an image.
- Should contain a paragraph of text.
- Image and text should each take up a column on medium screens and above.
- Image and text columns should collapse into separate rows for smaller screen sizes.

## Precision Requirements (Level 2)

- Font size should scale proportionally to look good across desktop, tablet, and mobile (see CSS clamp).
- Text should look vertically centered when in columns.
  - HINT: The easiest way to approach this is to define a height a container for the text. This height can be responsive using [CSS clamp](#). Once there is a defined height, you can use the transform and positioning to vertically center the text. This is pretty challenging so don't worry about losing a ton of points if you can't get it.
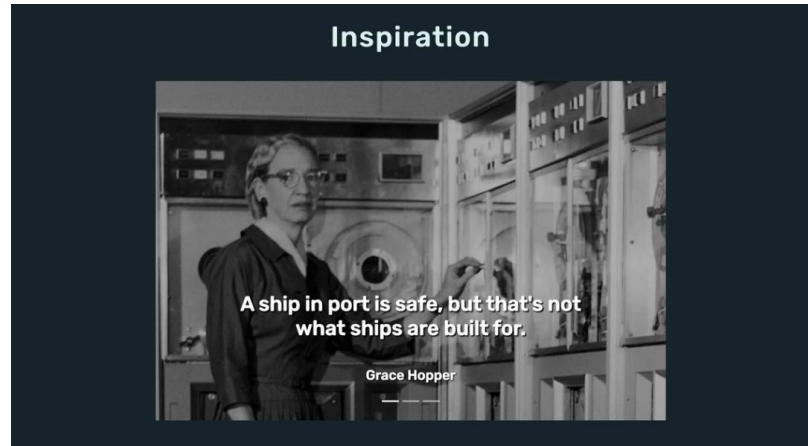
# Skills Section



## Functional Requirements (Level 1)

- Should have centered heading.
- Should include 4 skills. Note that HTML, CSS, and Bootstrap are all available to you now as skills!
- Content should be contained in a [default bootstrap container](#).
- Each skill should have an image and some text underneath.
- There should be 4 columns (1 row) on large-sized screens or greater, 2 columns (2 rows) on medium-sized screens, and 1 column (4 rows) on smaller screens.

## Precision Requirements (Level 2)

- Font size should scale proportionally to look good across desktop, tablet, and mobile (see [CSS clamp](#)).
- Images should match each other in color/tone.  Might need to use the [CSS filter property](#) to achieve this.
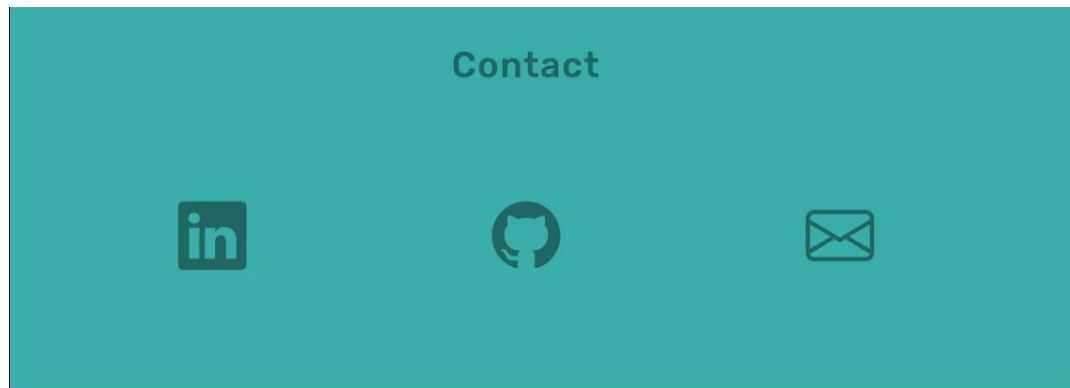
# Inspiration Section



## Functional Requirements (Level 1)

- Should have centered heading.
- Should have a bootstrap carousel.
- Carousel should be within a [default bootstrap container](#)
- Bootstrap carousel should be centered.
- Bootstrap carousel should contain 3 or more inspirational images.
  - HINT: it is MUCH EASIER if each image is cropped/scaled to be the same size. All of my images were 900x600.

## Precision Requirements (Level 2)

- Each image has captions with an inspirational quote and attribution on top.
- Captions should use text shadows to further improve readability.
- Captions should not disappear on mobile sizes (see [here](#)).
- Carousel images should smoothly transition without height changes.
- The images should be darkened to help text is readability by either using a photo editor or by making a semi-transparent overlay element on top of the image (much harder).

# Contact Section



## Functional Requirements (Level 1)

- Should have centered heading.
- Content should be within a [default bootstrap container](#)
- Should contain 3 or more social icons.
- Should use bootstrap columns that collapse into rows.

## Precision Requirements (Level 2)

- Icons should have a highlight on hover.
- Icons should scale proportionally to look good across desktop, tablet, and mobile (see CSS clamp).

# Footer

© Matthew Small 2021

## Functional Requirements (Level 1)

- Should have a statically defined height (only section like this).
- Text should be horizontally centered.
- Text should be vertically centered.
- Text should contain copyright symbol.

## Precision Requirements (Level 2)

- NONE