**AP Computer Science I**

Performance Task

# **Create — Portfolio Landing Page**

## **Overview**

For this project you’ll be creating an entire web page from a design we’ll provide for you. If you’ve been following along you should have the skills you need to accomplish this, but it may not be easy!

The design we’re providing you comes in the form of 2 images: one is an image of the complete website, and one has some details about some of the fonts and colors we’ve used.

Do not be afraid to use google or go back to previous lessons to look something up. Real-life, professional developers use google constantly for things that they have been doing for years. At this point it is not expected that you will have everything memorized, so don’t worry about it. Additionally, there are a few small details that you may not have encountered in our lessons yet. This is by design. These details are minor, and easily searched (e.g. google css rounded corners).

Get your project as close as you can to the design, but do not worry about getting it pixel-perfect. Don’t get out your ruler or count pixels to find the exact margins between the various sections. The point of this assignment is to create something from scratch and get the various elements in more or less the right position relative to the rest. It doesn’t matter if you use margin: 24px when the design actually has margin: 48px.

Finally, feel free to substitute your own content into this design. The images have some meaningless dummy content, but if you want to make up a business and personalize this page, please feel free to do so! Insert actual images in the placeholders, and feel free to play with the colors and fonts a bit too.

A note about images on the web

You do not have the legal right to use just any image that you find on the web. There are many free images to be found, but make sure that the image you use is actually free for you to use, and make sure to credit the creator of the image in your project. An easy way to give credit is to put the creator’s name and contact info in a README file in your repository. Some good places to find free-to-use images on the web include [Pexels](https://www.pexels.com/), [Pixabay](https://pixabay.com/), and [Unsplash](https://unsplash.com/).

#### **Initial structure**

1. Download the design images and take a look at what you’re going to be creating here.
   1. [Image One](https://cdn.statically.io/gh/TheOdinProject/curriculum/main/foundations/html_css/project/odin-project.png)
   2. [Image Two](https://cdn.statically.io/gh/TheOdinProject/curriculum/main/foundations/html_css/project/colors_and_stuff.png)
2. There are many ways to tackle a project like this, and it can be overwhelming to look at a blank HTML document and not know where to start. Our suggestion: take it one section at a time. The website you’re creating has 4 main sections (and a footer), so pick one and get it into pretty good shape before moving on. Starting at the top is always a solid plan.
3. For the section you’re working on, begin by getting all the content onto the page before beginning to style it. In other words, do the HTML and then do the CSS. You’ll probably have to go back to the HTML once you start styling, but bouncing back and forth from the beginning will end up making things take longer and may end up causing you more frustration.
4. Many of the elements on this page are very similar to things you saw in our flexbox exercises… feel free to go back to those if you need a refresher.
5. Do not worry about making your project look nice on a mobile device. We’ll learn that later.
6. When you finish, don’t forget to push it up to GitHub!

## **Assessment**

You will be provided with 12 hours of class time to complete and submit the following:

* A video of your program running
* Written responses about your program and development process
* Program Code

Your teacher will share submission guidelines that include suggestions for creating video and PDF files.

## **General Requirements**

This performance task requires you to develop a program on a topic that interests you or one that solves a problem. It is strongly recommended that a portion of the program involve some form of collaboration with another student in your class. Your program development process must involve a significant portion of work completed independently that requires a significant level of planning, designing, and program development.

You are required to:

* Iteratively design, implement, and test your program.
* Independently create at least one significant part of your program.
* Create a video that displays the running of your program and demonstrates its functionality.
* Write responses to questions about your program.
* Include your entire program code.

## **Program Requirements**

Your program must demonstrate a variety of capabilities and implement several different language features that, when combined, produce a result that cannot easily be accomplished without computing tools and techniques.

Your program must demonstrate:

* Explain how to test software for bugs and find solutions to problems they can anticipate.
* Use debugging strategies to correct errors in code.
* Document their own or their team’s computational processes when creating a program in a way that allows others to follow and understand.
* Collaborate with others to collect feedback on a digital project they or their team made, identify areas for improvement, and implement changes.
* Apply the principles of UI (user interface) design to create a digital project that balances aesthetic design with practical application.
* Define layout and design theories (Design Principles, Color Theory, Elements of Design, and Typography)
* Create a user-friendly project that meets provincial and/or other known accessibility standards and accounts for a wide range of human diversity.
* Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.

## **Submission Requirements**

### 1. **Video**

Submit one video in .mp4, .wmv, .avi, or .mov format that demonstrates the running of at least one significant feature of your program. Your video must not exceed 1 minute in length and must not exceed 30MB in size.

### 2**. Written Responses**

Submit one PDF document in which you respond directly to each prompt. Clearly label your responses 2a – 2e in order. Your response to all prompts combined must not exceed 750 words, exclusive of the Program Code.

## **Program Purpose and Development**

1. Provide a written response or audio narration in your video that:

Identifies the programming language.

* Identifies the purpose of your program.
* Explains what the video illustrates.

(Approximately 150 words)

1. Define layout and design theories, and describe how you utilized these theories in your program. Describe the user friendly design you attempted and how accessible your website is for consumers (How does your site handle diverse humans?). Describe the difficulties and/or opportunities you encountered and how they were resolved or incorporated. (Approximately 200 words)
2. What is the design process? Define the stages of the process and identify what was accomplished in each stage. Capture and paste the program code segment that implements a part of your code that was difficult with comments explaining its purpose and how you fix or implement it into your code(marked with an oval in 2e below), that is easy to read and understand. Describe the choices they or their team made when developing a digital project. What constraints influenced their decision, what needs did they consider, etc. (Approximately 200 words)
3. How did you collaborate with others to collect feedback on this digital project that you or your team made? How did you identify areas for improvement, and implement those changes in your code; Capture and paste the program code segment (marked with a rectangle in 2e below). Evaluate an interactive website or program and identify how it incorporates principles of good UI (user interface) design (i.e., user control, navigability, accessibility, chunking).(Approximately 200 words)
4. Capture and paste your entire program code into the PDF.

* Include comments or citations for program code that has been written by someone else.

## Tasks

### [**Activity 1 - Explore What is a Portfolio?**](https://docs.google.com/document/d/1tb9MVMQZhVyGnqiuOxXdOIVdy1LHhBzA6RM74IST-qs/edit?usp=sharing)

**Description**

What is a personal Portfolio?

Develop a clear enough understanding of what is a personal portfolio and be able to explain your understanding to others.

Time To Complete: 1-3 Hours

### [**Activity 2 - Research**](https://docs.google.com/document/d/1lh7zbE0ol1S51UNxjAATJWgB_7YFo0HYKOSPD5ElJ1s/edit?usp=sharing)

**Description**

How do we style a page? How do we align and organize content on a page?

Understanding how to make your HTML look the way you want by adding styles with CSS. The foundations of CSS, tools for inspecting HTML and CSS and the basics of style. How to put things exactly where you want them on your web projects using flexbox.

Time To Complete: 12-15 Hours

### [**Activity 3 - Ideate**](https://docs.google.com/document/d/1E6tTsWlaeiML-eWEV0zaAGIVx6lwp2kyR7eJyFGmz9I/edit?usp=sharing)

**Description**

How do we break down a design?

Work together to brainstorm potential solutions to the software design challenge. Focus on generating as many ideas as possible while avoiding ruling any out at this stage. How to break the page into separate parts and focus on just designing it in parts.

Time To Complete: 1-3 Hours

### [**Activity 4 - Evaluate the Possibilities**](https://docs.google.com/document/d/1YBFSgJCv45GzNN9SrnCsr5CgngsRzDuHtVdyZhM7SZs/edit?usp=sharing)

**Description**

What designs work best?

Select the optimum solution to move the process forward. Look to combine ideas, eliminate those that are unworkable because of constraints, and decide on two or three to flesh out before deciding on a single solution.

Time To Complete: 1-3 Hours

### [**Activity 5 - Construct a Prototype**](https://docs.google.com/document/d/1Ey0ewNzs7_klaMo_MHOk8d91SxmQtNPt9_C23HbbC5A/edit?usp=sharing)

**Description**

How can you make your vision into reality? Prototyping is a powerful means of making the solution into reality. This step allows students to test their ideas. While students may need to construct physical models to bring their ideas to life, alternative approaches may be more practical.

Time To Complete: 3-5 Hours

### [**Activity 6 - Improve the Design**](https://docs.google.com/document/d/1eZFdppPCXHDvdvbuOffK9lOI_WDPMJQDxcq79tKDAM8/edit?usp=sharing)

**Description**

How can you improve your design? Put your solution to the test, and seek and incorporate feedback into your design.

Time To Complete: 3-5 Hours

### [**Activity 7 - Share Solutions**](https://docs.google.com/document/d/1rEci5zmYnllqewPH4POmPr_D_tWvJr6onrL0eQJKHUU/edit?usp=sharing)

**Description**

What is the result of your design process? Present your final product and process to your peers, including information about each stage of the design process.

Time To Complete:1-3 Hours

### [**Activity 8 - Reflect**](https://docs.google.com/document/d/1_Jt1PYjgzdTbplyPicN-umNA2VT2_wjquX30GEq6eCQ/edit?usp=sharing)

**Description**

What did you learn through the engineering design process that could be helpful to others? Reflect on your design process and work. After the presentation of the project, reflect on the process from beginning to end as well as yourself as a learner.

Time To Complete: 1 Hour