**AP Computer Science I**

Performance Task

# **Create — Recipes**

## **Overview**

Programming is a collaborative and creative process that brings ideas to life through the development of software. Programs can help solve problems, enable innovations, or express personal interests. In this Performance Task, you will be developing a website with multiple pages linked to the central homepage; The linked pages should be recipes.

Your development process should include iteratively designing, implementing, and testing your program. You are strongly encouraged to work with another student in your class. Please note that once this performance task has been assigned as an assessment, you are expected to complete the task with minimal assistance from anyone other than your collaborative partner.

#### **Iteration 1: Initial structure**

1. Within the odin-recipes directory, create an index.html file.
2. Fill it out with the usual boilerplate HTML and add an h1 heading “Odin Recipes” to the body.

#### **Iteration 2: Recipe Page**

1. Create a new directory within the odin-recipes directory and name it recipes.
2. Create a new HTML file within the recipes directory and name it after the recipe it will contain. For example lasagna.html. You can use the name of your favorite dish or, if you need some inspiration, you can [find a recipe to use here](https://www.allrecipes.com/).
3. For now, just include an h1 heading with the recipe’s name as its content.
4. Back in the index.html file, add a link to the recipe page you just created. The text of the link should again be the recipe name.

#### **Iteration 3: Recipe Page Content**

The recipe page should have the following content:

1. An image of the finished dish under the h1 heading that you added earlier. You can find images of the dish on google or the site [recipe site](https://www.allrecipes.com/) we linked to earlier.
2. Under the image, it should have an appropriately sized “Description” heading followed by a paragraph or two describing the recipe.
3. Under the description, add an “Ingredients” heading followed by an unordered list of the ingredients needed for the recipe.
4. Finally, under the ingredients list, add a “Steps” heading followed by an ordered list of the steps needed for making the dish.

#### **Iteration 4: Add More Recipes**

1. Add two more recipes with identical page structures to the recipe page you’ve already created.
2. Don’t forget to link to the new recipes on the index page. Also, consider putting all the links in an unordered list so they aren’t all on one line.

## **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.

## **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 The Software Design Process**](https://docs.google.com/document/d/1sW1Zw5QbMsYV33ub1MEx6Jp14nvHLPNVB0feYxLV5VQ/edit?usp=sharing)

**Description**

What is the Software Design Process?

Develop a clear enough understanding of the engineering design process to be able to explain your understanding to others.

Time To Complete: 1-3 Hours

### [**Activity 2 - Research**](https://docs.google.com/document/d/1Y9wANz338HzETgBd2c2JSYgP292srmgoiV-D_WSbDKA/edit?usp=sharing)

**Description**

What is the current state of the problem? How have others attempted to solve this problem? What do potential users want or need in a solution?

Understanding the work that others have done to address the problem is an essential step in the engineering design process. Students identify existing products (which can be reverse-engineered or modified as a potential solution) as well as regulatory, standards, and ethical issues that must be considered during the design process.

Time To Complete: 12-15 Hours

### [**Activity 3 - Ideate**](https://docs.google.com/document/d/1WPFQkrYNNq-nMjtzFkA3EDVz0fmQIkr1tYNvefP4sK8/edit?usp=sharing)

**Description**

What solutions can we identify?

Work together to brainstorm potential solutions to the engineering design challenge. Focus on generating as many ideas as possible while avoiding ruling any out at this stage.

Time To Complete: 1-3 Hours

### [**Activity 4 - Evaluate the Possibilities**](https://docs.google.com/document/d/1jSrSo-I0VkS1Z1OTvjaapCAw-mg0koxJqxCSVx7KsAo/edit?usp=sharing)

**Description**

How can we choose a solution to the problem?

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/1GCo8wTbwMSfmFB6ecEu8QvqZa9bsUC8WYmtKKm469kU/edit?usp=sharing)

**Description**

How can you make your vision into reality? Modeling or 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/1SUIir9vFWmorpJ5QoYcF-2_5sWRvC3uOPeOcUbr253g/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/18YoXLmdD9Fm6DQTi46uPorBdn7GoiOhRVWyDrJ60Ab4/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/1RZ-jG3ZY8w6LuVArp3PpJA87ZElgTu4Q2KVmMCXLlXI/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