Summer Assignment - AP Computer Science Principles
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Due date: First day of the 2024-2025 school year

Hello future students! My name is Andrew Presley, and I will be your teacher for AP Computer Science Principles during the 2024-2025 school year. The following is our summer work. Please read this document carefully, and give your best effort on the assignment.

There are two components to our summer assignment. One involves reading and then answering a couple questions about the reading, and the other involves learning and practicing some basic functionality of the AppLap on Code.org.

Reading Component

Read the first chapter of *Computer Science Illuminated*, "The Big Picture." You can access this portion of the book using the preview feature in Google Books here: Computer Science Illuminated - Google Books (I will occasionally assign brief readings from this book throughout the year, when it's useful for broadening or deepening our exploration of a topic. You do not need to purchase the book. I will provide paper copies of the relevant sections.) This chapter introduces some of the foundational concepts in computer science and provides a somewhat detailed overview of the history of computing hardware and software. I would like you to focus mainly on the following sections:

1.1 Computing Systems (p. 4-8)

A Brief History of Computing Software (p. 19-25, in section 1.2 History of Computing)

1.3 Computing as a Tool and Discipline (p. 26-29)

The goal of this reading is to introduce you to some basic vocabulary we'll use throughout the course, to sketch out some of the fundamental concepts (like abstraction), and to help contextualize many of the ideas we'll encounter. (If the history lesson is not quite your thing, don't worry—the course itself will be much more hands-on.)

In a **notebook dedicated solely to AP CSP** (please acquire one during the summer—any kind of notebook will do), answer the following questions:

1) The text gives the example of driving a car as a situation in which we rely on abstraction. Give three other examples of situations in which we (that is, human beings) rely on abstraction. How does "information hiding" work in those situations?
2) Why was it useful to develop high-level programming languages? What benefit does it provide to the programmer?

3) Which best describes you?
    a) Super interested in computer science, like, big time
    b) Very interested in computer science
    c) Sort of interested in computer science
    d) Not really that interested in computer science

AppLab Component (Code.org)

AP Computer Science Principles is, as the name suggests, a course about the *principles of computer science*. You will learn about ideas, concepts, skills, techniques, vocabularies which are essential to the field of computer science, and which will serve you well in any future study in the field.

However, to explore these principles, we need some specific, concrete lessons and activities. The curriculum we'll be using will come from Code.org, which will be an important source for the pacing and structure of our course. (The other major source will be AP Classroom, which we'll talk about when the school year starts.) The AppLab, which Code.org is organized around, will be the playground within which we explore ideas, concepts, and examples—both through examining, modifying, and debugging existing programs, and also by creating your own programs.

The AppLab runs using the programming language JavaScript. But it should be noted that AP Computer Science Principles is not a course which requires using a specific programming language. The important thing in this course is that you understand the fundamental ideas and concepts (which will apply to nearly all programming languages), rather than the specifics of JavaScript or any other programming language.

With that said—you need to be able to navigate the AppLab and know how to use it effectively. So that is what this component of your summer assignment is intended to help you begin to do.

First, create an account on Code.org, and use the link below to join my section:

https://studio.code.org/join/TBHWBZ

After you've joined, please complete the following lessons:

Unit 3: Intro to App Design

- **Lesson 1: Introduction to Apps** (this lesson is very simple, but I want you to thoughtfully consider the questions being asked)
- **Lesson 2: Introduction to Design Mode**

In these lessons, you're asked to answer questions with a partner. Feel free to work with others on these questions (for example, if you have a friend also doing this summer assignment), but feel free also to ignore that part and answer them on your own.

You do not need to write down your answers in your AP CSP notebook, but do make sure to submit the "**Check for Understanding**" sections at the end of each lesson in Code.org.

As you go through these two lessons, **please note any parts of the AppLab that you do not quite understand, or any other questions you have about the lessons** in your **AP CSP notebook**.

Keep in mind that neither the reading component of this assignment, nor the AppLab component, involve any actual programming yet. The course will involve a lot of programming—if that's what you're looking for, don't worry, you're in the right place. The goal of this assignment is just to get a head start with a couple things that are doable (even for a student without previous computer science experience) over the summer, and hopefully not too daunting.

That is all. Please come prepared to bring your best self this coming school year—success in my course will require diligence, thoughtfulness, and consistency. But if you're ready to put in the work, I'm ready to do whatever it takes to help you succeed. Have a great summer, and I am looking forward to teaching you next year!