

# AP COMPUTER SCIENCE PRINCIPLES FINAL PROJECT

## PROJECT OVERVIEW

You will be creating an app that utilizes several components in AppLab. Your app will demonstrate knowledge of assigned content from Units 1 – 3. The style of content delivery is your choice... be creative! In class during final exam week, you will demonstrate your app to your classmates.

## PROJECT REQUIREMENTS

### 1. Code Creation

- You will create your app using Code Studio ~ Unit 5 Stage 5 puzzle 21 (U5\_S5\_P21) (<https://studio.code.org/s/csp5/stage/5/puzzle/21>)
- You may use your code from any puzzle in this unit as a guide
- It may be easier to start from scratch in Stage 5 Puzzle 21 by deleting all code & elements rather than altering any current code & elements

### 2. Code Submission (7<sup>th</sup> Due Tuesday 1/17 by 8:00am & 3<sup>rd</sup> Due Tuesday by 10:00am)

When you are satisfied with your app:

- Click the Share button at the top left of the screen
- Copy the link
- Upload the Link to your Google Site by making a new file cabinet page called Sem 1 Final Project. Then add the link (like the picture shown below)
- Then within the body of this page, answer the following questions:
  - Introduction:
  - Purpose
  - Design
  - Abstraction
  - Collaboration
  - Iterative Problem Solving Process

## APCSP\_DW

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### 8. Sem1 Final Project

**1. Introduction:** Hello, my name is Deb Wilson and I built an app explaining the key concepts learned this semester.

**2. Purpose:** the purpose of my app is to specifically explain Unit 1 through Unit 3 in this course. I have created a quiz about this content and once the user has complete the quiz, a graded score will be displayed to the user.

**3. Design:** I have designed my app by creating the following screens and I used the following objects (elements) in my user interface so that the quiz is user-friendly and easy to play. I used top-down design in this code by breaking down the following tasks:

**4. Abstraction:** I used abstraction in this code by writing a function that was extremely complex and then called it several times in my code. OR I used abstraction in my code by using and calling another classmates function without worrying about the details inside the function.

**5. Collaboration:** I collaborated with the following people and have commented out their sections in my code.

**6. Iterative Problem Solving:** I encountered the following problems in my code and overcame them by doing the following.

+ Add file

+ Add link

Add from Drive

Move to ▾

Delete

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My final project

a minute ago

Deborah Wilson

3. Oral presentation

You will deliver a presentation to your classmates to demonstrate your app. You will use Ms. Wilson's computer, and the app link you submitted will be utilized. No notecards or other written scripts may be used. You will have no more than 3 minutes. (Ms. Wilson will stop you at 3 minutes!)

Your presentation must include the following:

- a. Introduction
- b. Purpose of your app
- c. Demonstration of your app

## PROJECT RUBRIC

The project rubric (next page) should be utilized often during the creation of your app and development of your presentation. You may wish to grade yourself prior to code submission to determine your anticipated grade. Your grade on this project is 20% of your semester grade.

# AP CSP FINAL PROJECT RUBRIC

## APP LAB CODE (16 POINTS)

Component	Score Requirements
<i>User Interface &amp; Functionality (4)</i>	4 Utilizes 3 or more of the design components (button, text input, text label, drop down, radio button, checkbox) AND has properly functioning event handlers for each component 3 Utilizes 1 or 2 of the design components AND has properly event handlers for each component 2 Utilizes 3 or more of the above design components 1 Utilizes 1 or 2 of the above design components 0 Does not utilize any of the above design components
<i>Math, Variables, Control (4)</i>	4 Utilizes all 4 of the following code components: variable, updates variable using arithmetic, if statements, & random numbers 3 Utilizes 3 of the above code components 2 Utilizes 2 of the above code components 1 Utilizes 1 of the above code components 0 Does not utilize any of the above code components
<i>Navigation (3)</i>	3 App properly moves between 4 or more screens, including navigation to home and end screens from each screen 2 App properly moves between 4 or more screens, but does not include navigation to home and end screens from each screen 1 App properly moves between screens, including navigation to home and end screens from each screen 0 App only has one screen or does not navigate to other screens
<i>Content Review (3)</i>	3 App accurately demonstrates knowledge of assigned content 2 App demonstrates knowledge of assigned content with minor errors 1 App demonstrates knowledge of assigned content but has many errors 0 App does not demonstrate knowledge of assigned content
<i>Submitted on time (2)</i>	2 Code submitted by deadline of Noon on 1/18 0 Code not submitted by deadline

## PRESENTATION (5 POINTS)

Component	Score Requirements
<i>Introduction &amp; purpose (1)</i>	1 Includes your name, what app you created & why
<i>Delivery &amp; Demonstration (4)</i>	4 Demonstrates all of the following characteristics: articulates knowledge of assigned content, shows enthusiasm, maintains good eye contact, is easy to hear and understand 3 Demonstrates 3 of the above characteristics 2 Demonstrates 2 of the above characteristics 1 Demonstrates 1 of the above characteristics 0 Demonstrates none of the above characteristics

## Unit 1-3 Topics:

### Unit 1 Chapter 1: Representing and Transmitting Information Big Questions

- Why do computers use binary to represent digital information?
- How does data physically get from one computer to another?
- Are the ways data is represented and transmitted with computers laws of nature or a laws of man?

### Unit 1 Chapter 2: Inventing the Internet Big Questions

- Who and what is “in charge” of the Internet and how it functions?
- How is information transmitted from one computer to the other when they are not directly connected?
- How can the Internet keep growing? How does it work?

### Unit 2 Chapter 1: Encoding and Compressing Complex Information Big Questions

- Are the ways in which digital information is encoded more laws of nature or man made?
- What kinds of limitations does the binary encoding of information impose on what can be represented inside a computer?
- How accurately can human experience and perception be captured or reflected in digital information?

### Unit 2 Chapter 2: Manipulating and Visualizing Data Big Questions

- What is the relationship between data, information and knowledge?
- What are the best ways to find, see, and extract meaningful trends and patterns from raw data?
- Where and how does human bias affect the collection, processing and interpretation of data?

### Unit 3 Chapter 1: Programming Languages & Algorithms Big Questions

- Why do we need algorithms?
- How is designing an algorithm to solve a problem different from other kinds of problem solving?
- How do you design a solution for a problem so that it is programmable?
- What does it mean to be a creative programmer?
- How do programmers collaborate?

## Unit 5 Chapter 1: Event Driven Programming Big Questions

- How do you program apps to respond to user “events”?
- How do you write programs to make decisions?
- How do programs keep track of information?
- How creative is programming?
- How do people develop, test, and debug programs?