AP Computer Science Principle

Trial Lesson 1

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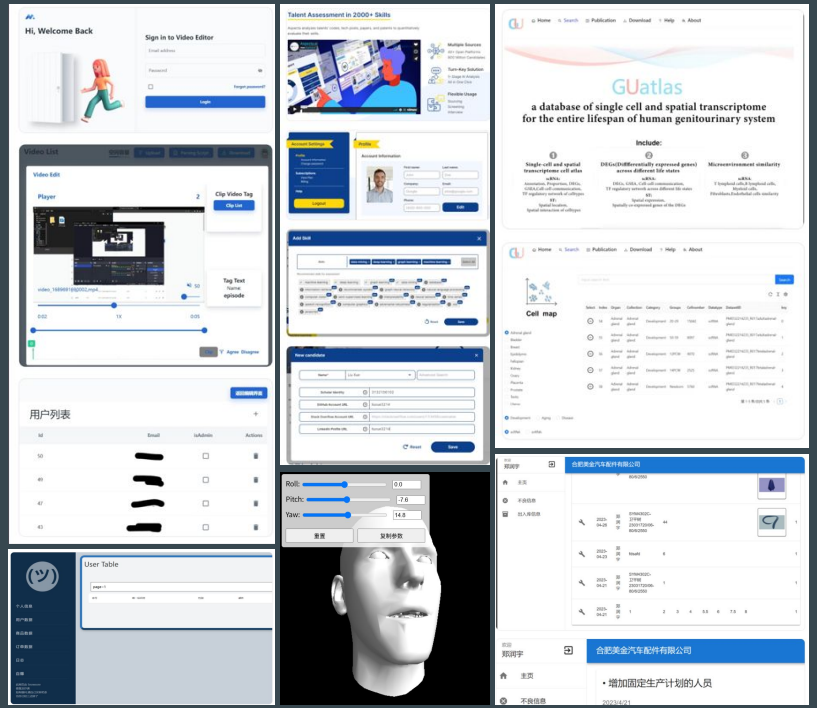


Introduction

What Is AP Computer Science Principle?

- A broad introduction to computer science concepts
- Designed for beginners with no prior programming experience
- Focuses on creativity and problem-solving
- Explores how computing affects the world

What are we going to learn in this course?

- The basics of programming and algorithms
- Working with data
- The internet and cybersecurity
- Creative computing projects
- The impact of computing on society

Why should you learn AP CSP?

- You don’t need coding experience — anyone can start!
- It helps you solve problems and think logically
- Computing is everywhere in daily life
- You’ll build something real and creative
- It prepares you for any future — not just tech careers

AP CSP Exam Overview

Exam

Section	Question Type/Component	Number of Questions	Exam Weighting	Timing
I	Multiple-choice questions	70	70%	120 minutes End-of-course AP Exam
	Single-select	57		
	Single-select with reading passage about a computing innovation	5		
	Multi-select	8		
II	Create Performance Task	*See Below*	30%	*See Below*
	Program code, video, and Personalized Project Reference			At least 9 hours in class
	Written response questions related to the Create performance task	2		60 minutes End-of-course AP Exam

Course

Big Ideas	Exam Weighting
Big Idea 1: Creative Development	**10–13%**
Big Idea 2: Data	**17–22%**
Big Idea 3: Algorithms and Programming	**30–35%**
Big Idea 4: Computer Systems and Networks	**11–15%**
Big Idea 5: Impact of Computing	**21–26%**

MCQ 1

1. Consider the following code segment, which uses the variables a and c.

$a \leftarrow 3$

$a \leftarrow a + 5$

$c \leftarrow 3$

$a \leftarrow c + a$

DISPLAY(a)

DISPLAY(c)

MCQ 2

3. An image stored on a computer contains pixels that represent how bright the red, green, and blue values are. The most common format for pixels is to represent the red, green, and blue, using 8 bits, which vary from 0 to 255. If the current red value is 10011101, what would be the new value in binary if the red value is increased by 4 in decimal?

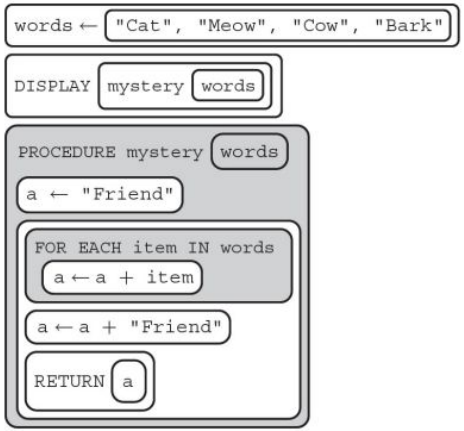
   (A) 157_{BIN}

   (B) 0100_{BIN}

   (C) 10011111_{BIN}

   (D) 10100001_{BIN}

MCQ 3



(A) Friend
(B) FriendFriend
(C) FriendCatMeowCowBarkFriend
(D) a

FRQ

2. Refer to your Personalized Project Reference when answering this question.

   (a) Consider the first iteration statement included in the Procedure section of your Personalized Project Reference. Describe what is being accomplished by the code in the body of the iteration statement.

   (b) Consider the procedure identified in part (i) of the Procedure section of your Personalized Project Reference. Write two calls to your procedure that each cause a different code segment in the procedure to execute. Describe the expected behavior of each call. If it is not possible for two calls to your procedure to cause different code segments to execute, explain why this is the case for your procedure.

   (c) Suppose another programmer provides you with a procedure called `checkValidity(value)` that returns `true` if a value passed as an argument is considered valid by the other programmer and returns `false` otherwise. Using the list identified in the List section of your Personalized Project Reference, explain in detailed steps an algorithm that uses `checkValidity` to check whether all elements in your list are considered valid by the other programmer. Your explanation must be detailed enough for someone else to write the program code for the algorithm that uses `checkValidity`.

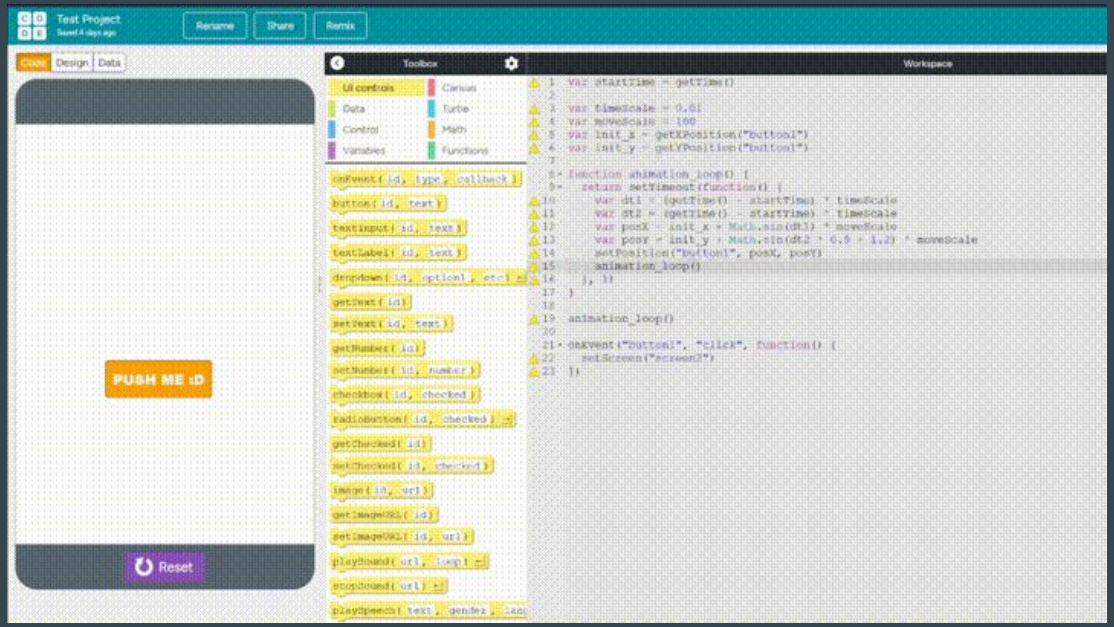
Practical Setup + Hands-on Coding

Why?

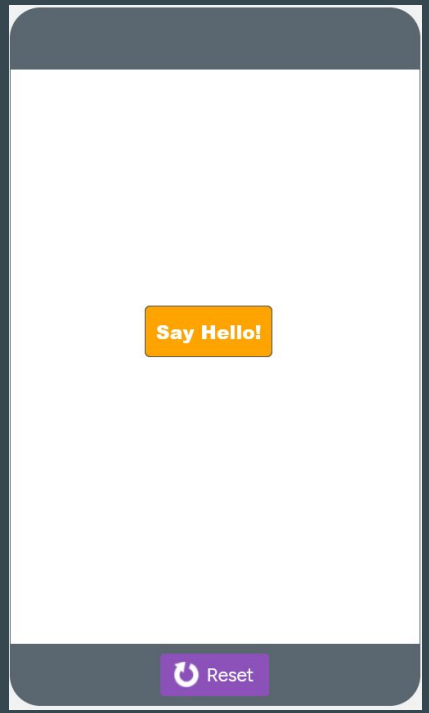
- Many students fail the FRQ because they're too afraid to try coding on their own.
- Practice makes the difference — we'll write code together, not just watch.

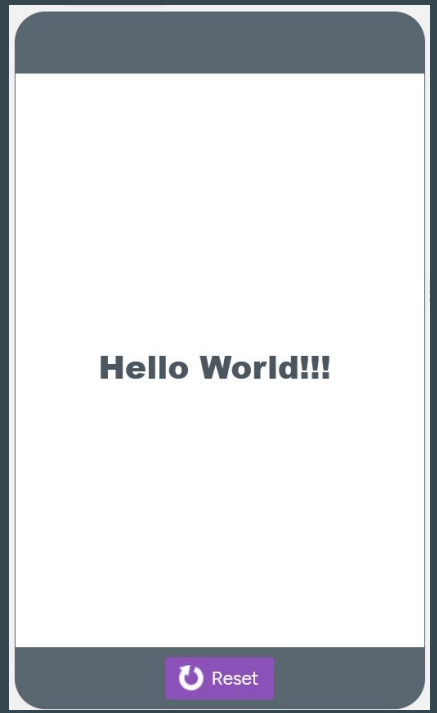
You need

- code.org



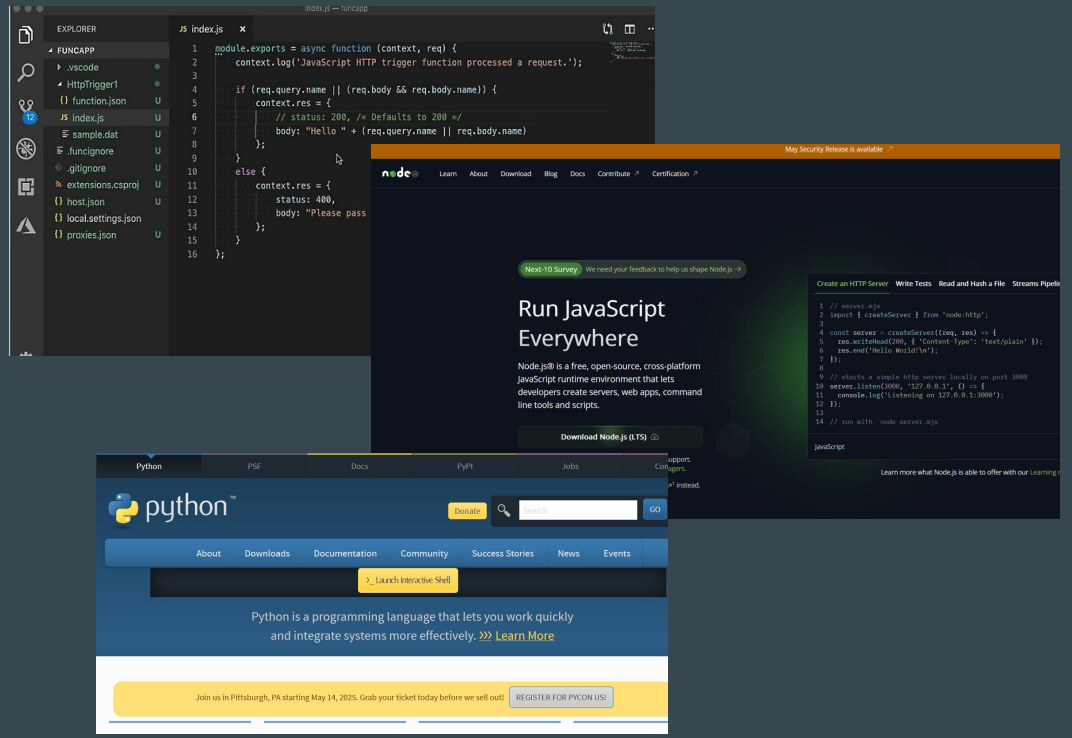
Hello World!





To Easy?

- Windows (or MacOS)
- IDE (VSCode)
- NodeJS or Python



Hello World!

code_example > JS HelloWorld.js > ...

```javascript
console.log("Hello, World!");

function greet(name) {
  return `Hello, ${name}!`;
}

console.log(greet("Alice"));

```

code_example > HelloWorld.py > ...

```python
print("Hello, World!")


def greet(name):
    return f"Hello, {name}!"


if __name__ == "__main__":
    print(greet("Alice"))
    print(greet("Bob"))
    print(greet("Charlie"))

```

Thanks!

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