CHS CODING CLASS

DAY 1 – INTRODUCTION AND PROJECT 1

ZAK KECK

- Graduated from Crete High School in 2016 as Valedictorian

- Played in Band, Ran Cross Country and Track

- Graduated from University of Nebraska-Lincoln in 2020

- Bachelor of Science in Computer Science, Minor in Mathematics, Honors

- Done software projects for Buckle, Gallup, BCBSNE, and Buildertrend

- Currently working as a Software Developer

THIS COURSE

- 5 projects over 5 days

- I hope to teach basic programming, critical thinking, and problem solving

- And finally some ways to find education and careers in programming

- At the end, you will have a personal website that you can show off and use to apply to college or jobs

- What you will need
  - Your Chromebook

- We will move very fast, so enjoy the projects and don't expect to master any of this!

TODAY'S RIDDLE

- Everyone who wants to will line up from tallest to shortest

- Each student gets a colored hat - either black or white

- They cannot look at their own color or look at the students behind them

- They can only say one word - either "black" or "white", no other signaling

- Every student except one needs to say their own hat color

- How can they do it?

PROGRAMMING – VARIABLES

- A name that represents some value

- Just like in math: x = 5, "x is 5", x + 2 = 7

- These are the five main types that we care about

```
let number = 1;
let boolean = true;
let string = "A String";
let list = [1, 2, 3, 4];
let object = { name: "Zak", age: 24, isSmart: true };
```

PROGRAMMING - FUNCTIONS

- Reusable code that does something

- Just like in math where you might see f(x, y) = x + y. Exactly the same!

- They have a name – "addNumbers"

- They have parameters, which are the inputs, and they are also variables – a and b

- They have a return statement, which is a value that the function computes – addNumbers "returns" the sum of a and b

- To call this function, you do addNumbers(1, 2)

```
function addNumbers(a, b){
    return a + b;
}
```

PROGRAMMING - CLASSES

- A class is an object that has state and behavior

- "State" is some property like color

- "Behavior" is function the car can do, like drive()

- The constructor is a special function that initializes
the state

- "This" is a special keyword that allows you to
access an objects state and functions

- To create an instance of the class, use the "new" keyword

- To call the functions within the class, create an instance, then period,
then the function name. "Car dot unlock"

```
class Car {
  constructor(){
    color = "blue";
    isLocked = true;
    speed = 0;
  }

  unlock(){
    this.locked = false;
  }

  drive(){
    this.speed = 60;
  }

  showSpeed(){
    console.log(this.speed);
  }
}

let car = new Car();

car.unlock();
car.drive();
car.showSpeed(); //prints 60 to the console
```