Take Control!

Control Structures

KAHOOT!!!! BOO! 

Calculator Pt. 1

Can you tell me what this does?

```
Scanner kboard = new Scanner();

System.out.println("Gimme a #");
int num1 = kboard.nextInt();
System.out.println("Gimme another");
int num2 = kboard.nextInt();
System.out.println( num1 * num2 );

kboard.close();
```

Calculator Pt. 2

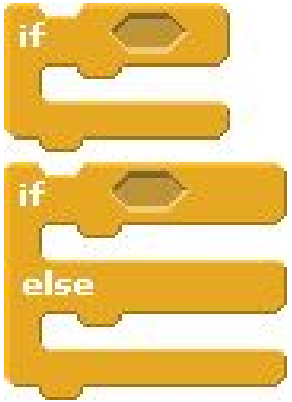
What if we wanted to do subtraction, addition, multiplication AND division”

```
Scanner kboard = new Scanner();

System.out.println(“Gimme a #”);
int num1 = kboard.nextInt();

System.out.println(“What operation?”);
String operation = kboard.nextLine();

System.out.println(“Gimme another #”);
int num2 = kboard.nextInt();

// WHAT DO WE DO HERE???

kboard.close();
```

Code Paths

WHAT THE USER ENTERS AS INPUT	WHAT WE WANT TO PRINT OUT
* ➛ Multiplication	➛ num1 * num2
+ ➛ Addition	➛ num1 + num2
- ➛ Subtraction	➛ num1 - num2
/ ➛ Division	➛ num1 / num2

Control Structures



Two Types of Control

If Statements

```
if ( <statement> ){
     //code goes here
}
else if ( <statement> ){
     //code goes here
}
else {
     //code goes here
}
```

Switch Statements

```
switch ( <value> ){
case <int or char>:
     //code goes here
     break;
case <int or char>:
     //code goes here
     break;
default:
     //code goes here
     break;
}
```

if statements (Example)

```
Scanner keyboard = new Scanner();

System.out.println("How many dogs do you have?");
int numDogs = keyboard.nextInt();

if (numDogs < 0) {
    System.out.println("That's not possible!");
} else if (numDogs = 1){
    System.out.println("Cool, I have one too!");
} else if (numDogs = 2){
    System.out.println("The perfect number!");
} else {
    System.out.println("Wow, thats a lot of dogs!");
}
```

Key things to remember

- For each statement there always is an opening “{“ and a closing “}”
- The expression you are evaluating is in between the parenthesis
- When the program reaches an if statement, it will stop, evaluate the <condition> then if the condition is true it will execute the code within and exit
    - If the condition is not true, Java will run the code within the else statement instead
- Note the difference between

  =

  And

  ==
    - Where = sets values, == compares values

For Strings, you have to use something else

```
String name = “Ryan”;

if ( name.equals(“Ryan”) ){

System.out.println(“That’s a cool name!”);

}
```

Ask a question and make a statement with multiple else ifs that responds based on the answer given from the user.

Putting it all together!

Now, use an if / else if statement to make your calculator able to do all four operations!

HINTS:

- Use .equals( ) to compare two strings
- Check which operation it is and then output the numbers combined using that operation