GIRL SCOUT CODING FOR GOOD

Lesson 1 - the basics

AGENDA

➤ Basic coding constructs

  ➤ Variables

  ➤ Conditionals

➤ Advanced programing concepts

  ➤ Loops

  ➤ Functions

➤ Application

  ➤ Fun with coding commands for humans

  ➤ Actual coding

VARIABLES

➤ Store information and be referenced later

➤ Can be changed by code or user input

➤ Typically have a "type"

```
var x = 3.14;
var y = true;
var z = "Hello World";
var fruits = ["apple", "orange", "banana"];
```

CONDITIONALS

➤ A fork (or many forks) in the road

➤ Based on a condition, your code will take one path or another

➤ Come in many forms, but we'll keep it simple for now

```javascript
if (x >= 1) {
    console.log("X is greater!");
} else if (y == true) {
    console.log("Y is the truth!");
} else {
    console.log(z);
}
```

LOOPING

➤ Come in many types (while, for, until, etc.)

➤ Continue execution repeatedly until a condition is met

➤ Most common type is a for loop

```javascript
for (var i = 0; i < 100; i++) {
    console.log("You have looped", i, "times");
}

var fruits = ["apple", "orange", "banana"];
for (var fruit in fruits) {
    console.log("Current fruit is", fruits[fruit]);
}
```

FUNCTIONS

➤ Allow you to package up code for reuse in several places

➤ Must be defined before using

➤ Can take 0 or more arguments and return a single value

```javascript
function logTheNumbers(maxNumber) {
    for (var i = 0; i < maxNumber; i++){
        console.log("You have looped", i, "times");
    }
}

logTheNumbers(100);
logTheNumbers(100);
logTheNumbers(100);
```

FUNCTIONS

➤ Allow you to package up code for reuse in several places

➤ Must be defined before using

➤ Can take 0 or more arguments and return a single value

```javascript
function logTheFruits(fruits) {
    for (var fruit in fruits) {
        console.log("Current fruit is", fruits[fruit]);
    }
}

logTheFruits(["apple", "orange", "banana"]);
logTheFruits(["kiwi", "lemon", "lime"]);
logTheFruits(["watermelon", "cantelope"]);
```

BONUS (OBJECTS)

➤ Allow you to work with more complex types

➤ A single variable may have multiple values

➤ Can represent concepts with multiple dimensions

```
point = { x: 1, y: 2, z: 3 };

pet = Dog.new();
pet.furColor = "brown";
pet.furLength = 2;
```

ACTIVITY

➤ Need a volunteer

➤ Will follow voice commands

➤ Consider what goes into each command

Enhance my quiz

https://bit.ly/2Qjc2pk

ENHANCE MY QUIZ PROGRAM

`https://bit.ly/2Qjc2pk`

➤ Add more questions

➤ Give feedback when the answer is wrong

➤ Show better success message

➤ Alert when an answer is correct and celebrate it

➤ Use your imagination

Play my game

https://joelbyler.github.io/javascript_game/

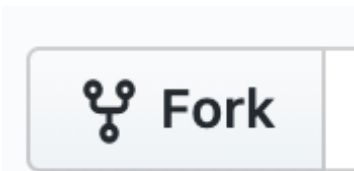https://joelbyler.github.io/javascript_game/

Enhance my game

https://github.com/joelbyler/javascript_game

https://joelbyler.github.io/javascript_game/

ENHANCE MY QUIZ PROGRAM

`https://github.com/joelbyler/javascript_game`

➤ Create a GitHub.com account (highly trustworthy site!)

➤ Go to the link above and FORK button [⑂ Fork]

➤ Make note of your new path (github.com/youruser/javascr…)

➤ Go to settings and find the GitHub Pages section

➤ Switch the source from None to master branch

➤ Make note of the website that's created for you

➤ Scroll to the top, click Code, make changes, and refresh after a minute or two to see those changes!

RESOURCES

JavaScript Language "Cheat Sheet"

https://ilovecoding.org/blog/js-cheatsheet

Our Example Quiz Code

https://bit.ly/2Qjc2pk

Our Example Game Code

https://github.com/joelbyler/javascript_game

Our Example Game (my version)

https://joelbyler.github.io/javascript_game/

Slides for Today

https://joelbyler.github.io/javascript_game/
GS_CFG_Slides.pdf