

# Introduction to Programming

Class 16, 24 October 2016

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## Goals

**Goal 1:** You will consolidate your learning from Unit 2.

**Goal 2:** You will understand Friday's DDoS attack.

## Vocabulary

DDoS Attack

DNS

Internet of Things

## Code

none

## Partners

- Height line-up

# Review Unit 2 Test

1. Most common improvement
2. Review code and rubric
3. Grade Check

```
if(randomNumber > randomNumberAivil){

    //this combination will make the player win
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \nWow you win!! Thanks for playing." );

}else if(randomNumber < randomNumberAivil){

    //this combination will make Aivil win and you lose
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \nSorry you lose. Thanks for playing." );

}else{

    //this condition will make you and aivil become friends
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \n" + name + " and Aivil have become
    friends. Thanks for playing." );

}
```

```
if(randomNumber > randomNumberAivil){

    //this combination will make the player win
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \nWow you win!! Thanks for playing." );

}else if(randomNumber < randomNumberAivil){

    //this combination will make Aivil win and you lose
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \nSorry you lose. Thanks for playing." );

}else{

    //this condition will make you and aivil become friends
    alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has
    rolled a " + randomNumber + ". \n" + name + " and Aivil have become
    friends. Thanks for playing." );

}
```

```
alert("Aivil has rolled a " + randomNumberAivil + ". \n" + name + " has  
rolled a " + randomNumber + ". \n");  
  
if(randomNumber > randomNumberAivil){  
    //this combination will make the player win  
    alert("Wow you win!! Thanks for playing." );  
}else if(randomNumber < randomNumberAivil){  
    //this combination will make Aivil win and you lose  
    alert("Sorry you lose. Thanks for playing." );  
}else{  
    //this condition will make you and aivil become friends  
    alert(name + " and Aivil have become friends. Thanks for playing." );  
}
```

# Mid-semester Reflection

1. Independently, complete  
Reflection Form (Haiku Unit 3)



# Friday's Attack

## Roles

1. Distributed Denial of Service Attack (DDoS)
2. Domain Name System (DNS)
3. Internet of Things (IoT)
4. Friday's DDoS Attack

## Responsibility

1. Research your concept (10 min)
2. Explain your concept to group members (3 min each max)
3. Create a visualization of what happened (5 min)
4. Discuss: Why does this matter? (5 min)

## Coding Warm Up

- Write a program that prompts the user three times for a sale amount and a commission rate. Then print the total commission earned on the HTML page. Use a for-loop.

What is the sale amount? **15**

What is the commission rate (%)? **8**

What is the sale amount? **45**

What is the commission rate (%)? **10**

What is the sale amount? **10**

What is the commission rate (%)? **5**

Total sales: 70.00

Total commission: 6.20

## HTML Tables

```
<!doctype html>
<html>
<head>
  <title>Commission</title>
</head>

<body>
  <table>
    <tr><td>Power</td><td>Value</td></tr>
    <tr><td>1</td><td>3</td></tr>
    <tr><td>2</td><td>9</td></tr>
    <tr><td>3</td><td>27</td></tr>
  </table>
</body>
</html>
```

Power	Value
1	3
2	9
3	27

## Coding Practice

- Write a program that prompts the user for a base and a number of powers then outputs a table as follows.

What is the base? **3**  
How many powers? **10**

Power Value	
1	3
2	9
3	27
4	81
5	243
6	729
7	2187
8	6561
9	19683
10	59049

## Motivation

- Now, how would we do the same thing an indefinite number of times?

```
<!doctype html>
<html>
<head>
    <title>Commission</title>
</head>

<body>
    <script>
        var salesTotal = 0;
        var commTotal = 0;

        for (var i=0; i<3; i++) {
            var saleString = prompt("What is the sale amount?");
            var commRateString = prompt("What is the commission rate?");
            sale = parseFloat(saleString);
            commRate = parseFloat(commRateString);

            var comm = sale * (commRate / 100.0);

            salesTotal = salesTotal + sale;
            commTotal = commTotal + comm;
        }

        var message1 = "Total sales: " + salesTotal.toFixed(2);
        var message2 = "Total commission: " + commTotal.toFixed(2);

        var para = document.createElement("p");
        var text = document.createTextNode(message1);
        para.appendChild(text);
        document.body.appendChild(para);

        para = document.createElement("p");
        text = document.createTextNode(message2);
        para.appendChild(text);
        document.body.appendChild(para);
    </script>
</body>
</html>
```