JavaScript – Recitation 7

****The JS keywords below are in LOWERCASE. Otherwise, they won't work!**

The **if** statement: executes some code only if a specified condition is true.

Example 1:

```
<script>
        //Let's alert "Good Morning!" if the time is less than 12
        var time = 6;
        if (time < 12){ // '<' means less than
                alert("Good Morning!");
        }
</script>
```

Example 2:

```
<script>
        var total = 0;
        var price1 = 4.50;
        var price2 = 2.00;
        total = price1 + price2;
        if(total >= 1){ // '>=' means "greater than equal to"
                document.write("Wow, you spent so much money...");
        }
</script>
```

Example 3:

```
<script>
        //THIS WON'T WORK! Why?
        var total;
        var price1 = "4.50";
        var price2 = "2.00";
        total = price1 + price2;
        if(total == 6.50){ // '==' means "not equal"
                alert("The total is $6.50");
        }
</script>
```

Remember! When anything is surrounded by double quotes, you are working with a JavaScript String Object! They are NOT numbers!

**How do you change the total in the if statement so that the code within it gets executed?

Example 4:

```
<script>
        var total = "2"; //String object
        var price = 2; //Number object
        if(total !== price){
                alert("They are different types");
        }

        total = 2;

        if(total === price){
                alert("They are the same type!");
        }
</script>
```

The **if-else** statement: the if statement executes some code if a specified condition is true and another code if the specified condition is not true.

Example 1:

```
<script>
        var yourAge = 101;
        var grandpaAge = 19;
        if(yourAge != grandpaAge){ // '!=' means "not equal"
                alert("Ages are not equal!");
        } else { // if ages are equal, then enters here
                alert("Ages are equal!");
        }
</script>
```

Example 2:

```
<script>
        //how many quarters can fit into the totalCost?
        var totalCost = 1.79;
        var quarterAmount = 0.25;
        if(totalCost / quarterAmount > 0){ // '/' is division
                alert("I can give you up to " + totalCost/quarterAmount + "quarters!");
        } else {
                alert("I can't give you any quarters.");
        }

       //how much money will you have leftover after I give you quarters?
       if(totalCost % quarterAmount > 0){ // '%' is modulus (division remainder)
                alert("You have" + totalCost % quarterAmount + "leftover.");
        } else {
                alert("You will have no money leftover after I give you quarters.");
```

```
    }
</script>
```

Example 3:

```
<script>
    //is my number even?
    var number = 5;
    if(number % 2 == 0){ // if the remainder is 0 when divided by 2
        document.write("My number is even!");
    } else { // remainder is not 0 when divided by 2
        document.write("My number is odd!");
    }
</script>
```

The **if, else-if,** else statements: use to select one of several blocks of code to be executed.

Example 1:

```
<script>
    var time = 15;
    if(time < 12){
        alert("Good Morning!");
    } else if(time < 18){
        alert("Good Afternoon!");
    } else {
        alert("Good Evening!");
    }
</script>
```

Example 2:

```
<script>
    var total = 0;
    var randomNumber = 3;
    if(total == 0 && total == 1){
        total = total + 2;
    } else if(total == 0 || total == 1){
        total++;
    } else if(total == 2 || total == 5){
        total--;
    } else {
        total = total * randomNumber;
    }
    alert(total); //what does it equal?
</script>
```

The 'confirm' box: used if you want the user to verify or accept something.

-When a confirm box pops up, click "OK" or "Cancel" to proceed.

-If the user clicks "OK," the box returns true.

-If the user clicks "Cancel," the box returns false.

```
<script>
    var r = confirm("Your order total is $12.98. Please confirm.");
    if (r == true){
        x = "Your items will be shipped today.";
    } else { // this means r is false
        y = "You're returning to the shopping cart.";
    }
</script>
```

Operators

Arithmetic Operators

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus (division remainder)
++	Increment
--	Decrement

Assignment Operators

Operator	Example	Same As
=	x=y	
+=	x+=y	x=x+y
-=	x-=y	x=x-y
*=	x*=y	x=x*y
/=	x/=y	x=x/y
%=	x%=y	x=x%y

Comparison Operators (Remind the students that these return T or F)

Operator	Description	Example	
==	equal to	x==8	*false*
		x==5	*true*
===	exactly equal to (equal value and equal type)	x==="5"	*false*
		x===5	*true*
!=	not equal	x!=8	*true*
!==	not equal (different value or different type)	x!=="5"	*true*
		x!==5	*false*
>	greater than	x>8	*false*
<	less than	x<8	*true*
>=	greater than or equal to	x>=8	*false*
<=	less than or equal to	x<=8	*true*

Logical Operators

Operator	Description	Example
&&	and	(x < 10 && y > 1) is true
||	or	(x==5 || y==5) is false
!	not	!(x==y) is true