INTRO TO JAVASCRIPT

Parsing

Each line in a program is parsed to determine its meaning to the machine. This is done by breaking up each statement into tokens.

In some languages, compilation creates machine code that is deployed to servers. For JavaScript, compilation happens microseconds before execution. This is referred to Just-in-Time Compilation.

Defining Variables

1) Number

```
const a = 1

module.exports = a;
```

2)Boolean

```
const a = true;
const b= false;

module.exports = { a, b }
```

3) Strings

```
const myName = "Dan";
const anotherName = 'Cody';

const helloMessage = `Hello ${anotherName}, my name is ${myName}!`;
```

4) Mutable

Instead of constant **let** is used

```
let a = 3;

a = 5;

module.exports = a;
```

5) Comments

Single line - //

Multi line - /* */

FUNCTIONS AND OPERATORS

1) Fucntions sample

```
function addTwo(input) {
    output = input + 2;

    return output;
}

module.exports = addTwo;
```

2) Math.random

```
function getRandom() {
  const a = Math.random();

  return a;
}

module.exports = getRandom;
```

3) Math.floor

The function will round a number down to the nearest integer. For example if we had the number, `2.9999`, the function will round this input down to `2`.

```
function getFloor(x) {
  const a = Math.floor(x);

    return a;

}

module.exports = getFloor;
```

CONDITIONALS

If and else statements

1) Is Equal

The `===` operator is commonly referred to as the **strict equality** operator. It compares two values and evaluates to `true` if they are equal.

```
function isEqual(a, b) {
    if (a === b){
        return true;
    }
}

module.exports = isEqual;
```

2) Is not equal

next **operator** is the `!==` or the **strict inequality** operator. This operator will evaluate to `true` if the two values are **not equal**.

```
function isNotEqual(a, b) {
    if (a !== b)
    return true;
}

module.exports = isNotEqual;
```

3) Else

```
function isNotEqual(a, b) {
    if (a !== b)
    return true;

    else
    return false;
}

module.exports = isNotEqual;
```

4) Greater Than

```
function greater(first, last) {
    if (first > last)
    return first;

    if (last > first)
    return last;

}

module.exports = greater;
```

5) Greater Than Or Equal To

```
function isEnough(cost, money) {
    if (money >= cost)
    return true;
```

```
    else
    return false;
    }

module.exports = isEnough;
```

6) Else if

```
function canAccess(purchasedSubscription, freeTrial) {
    if (purchasedSubscription)
    return true;

    else if (freeTrial)
    return true;

    else
    return false;
}

module.exports = canAccess;
```

LOOPS

1) For loop

```
    function summation(n) {
    let sum = 0;

    for (let i = 1; i <=n; i++) {
        sum = sum + i

    }

    return sum;
}

module.exports = summation;
```

2) Factorial

```
function factorial(n) {
  f = 1
  for (let i = 1; i <= n; i++){
  f = f*i
  }
```

```
  return f
}

module.exports = factorial;
```

3) Repeating a string

```
function scream(n) {
    let str = ""
    for(let i = 1; i<=n; i++){
      str = str+"a"
    }

    return str
}

module.exports = scream;
```

```
function scream(n) {
    let str = ""
    for(let i = 1; i<=n; i++){
      if(i%2===0){
      str = str+'A'
      }
      else{
      str = str+'a'
      }

    }
    return str
}

module.exports = scream;
```

4) Top Double Question ####

```
function topDouble(value, top) {
    while(value < top) {
        value *= 2;
    }
    return value / 2;
}

module.exports = topDouble;
```

PRACTICE PROBLEMS 1

1.

```
function isEven(num) {
    if (num%2===0){
        return true;
    }
    else{
        return false;
    }
}

module.exports = isEven;
```

2.

```
function smallerNumber(num1, num2) {
if (num1<num2){
    return num1;
}
if(num2<num1){
    return num2;
}
}

module.exports = smallerNumber;
```

3.

```
const fakeName = require('./fakeName');

const message = `
    Hello, ${fakeName}! You left a package at the office today.
    You can pick up tomorrow at 10am, ${fakeName}.
    If not I will drop it off this weekend.
    Goodbye ${fakeName}!
`;

module.exports = message;
```

4.

```
function checkNumber(num) {
    if (num<0){
        return 'negative';
    }
    else if (num>0){
        return 'positive';
    }
    else{
        return 'zero';
    }
}

module.exports = checkNumber;
```

5.

```
function maxSum(num) {
    sum = 0
    for(let i = 1; i <=num; i++)
    sum += i

    return sum;
}

module.exports = maxSum;
```