**Difference between var, let and const**

Var was used before the new version of JS.

Var is function-scoped or global-scoped

**Const** and **let** are block-scoped

Only available in the block being declared in (if statement, for loop, etc.)

Var variables can be updated and re-declared within its scope (e.g. global scope);

Let variables can be updated but not re-declared (within the same block);

Const variables can neither be updated nor re-declared.

Therefore, if you want to update a global variable, then use var as used in the js-playground app.

Graphical user interface, application

Description automatically generated

**Difference between declaring, assigning, initialize and instantiating a variable**

Declaration - ‘I am going to use a variable named ‘a’ to store an integer value’:

int a; //a is declared

Assignment – ‘Put the value 3 into the variable a’:

int a = 3; //a is declared and assigned

a = 1; //we are assigning a new value to a

Initializing – ‘To initialize a variable means to assign it an initial value’ e.g. declaration and assignment in one statement:

int a = 0; //a is declared AND assigned to 0

Instantiate - Instantiating a class means to create a new instance of the class

MyObject x = new MyObject(); //we are making a new instance of the class MyObject

**Rounding a number**

* Rounding decimal points -> toFixed()
* Rounding up -> Math.ceil()
* Rounding down -> Math.floor()
* Rounding to the nearest integer -> Math.round()
* Returning absolute value -> Math.abs()
* Removing the decimal point -> Math.trunc()

You can also use the Math.trunc() function which can handle large numbers as compared to the Math.floor() function. The Math.floor() function will fail in the case of negative numbers, but Math.trunc() won’t fail in case of negative numbers. (<https://www.delftstack.com/howto/javascript/integer-division-javascript/>)

**What is the difference between ++i, i++ and i+=1**

num += 1 is rather equivalent to ++num.

int a = 0;

int b = a++; // now b == 0 and a == 1

int c = ++a; // now c == 2 and a == 2

int d = (a += 1); // now d == 3 and a == 3

**The different for loops**

for (let i=0; i<text.length; i++){  
 let letter = text[i]  
 ***console***.log(letter);  
}

// // Returns the element  
// for (const i of text) {  
// console.log(i)  
// }  
  
// // Returns the index  
// for (const i in text) {  
// console.log(i, text[i])  
// }