

1. Declaring and Invoking Functions:

- Function is a named subprogram designed to perform a particular task. Functions are executed when they are called. This is called invoking a func. Values can be passed into functions and used within the function.
- Functions can have parameters
- Functions always return a value(custom or default)
- Pure function - a function that always has the same result, has no side effects

```
function printStars(count){  
  console.log('*'.repeat(count));  
}
```

1.1. Declaring:

- Functional Declaration(recommended way)
function printText(text){
 console.log(text);
}
- Functional Expression(useful in functional programming)
let printText = function(text){
 console.log(text);
}

```
[1,2,3,4].map((a) => printAnotherText(a));  
[(1,2,3,4)].map(printAnotherText);
```

1.2. Invoking a Function:

- Invocation from another function:
function printDocument(){
 printLavel();
 printContent();
}
- Self-invocation(recursion):
function countDown(x){
 console.log(x);
 if (x>0) {countDown(x-1);}
}

1.3. Returning Values:

- The return keyword immediately stops the function's execution
- Returns the specified value to the caller

2. Nested Functions

3. Value vs Reference Type

4. First-class Functions:

- First-class functions are treated like any other variable:
passed as an argument, returned by another function, assigned as a value to a variable

5. Arrow Functions:

- Special shorthand syntax for Declaration
- They operate in the context of their enclosing scope
- Useful in functional programming

```
let increment = x => x+1;  
console.log(increment(5));
```

```
let increment = function(x){  
  return x+1;  
}
```

```
let sum = (a, b) => a+b;  
console.log(sum(5, 6));
```

6. Naming and Best Practices:

- meaningful names
- camelCase
- names should answer the question what does the function do?
- each function should perform a single, well-defined task