

Episode 13 : First Class Functions ft. Anonymous Functions

Functions are heart ❤ of Javascript.

Q: What is Function statement?

Below way of creating function are function statement.

```
function a() {  
  console.log("Hello");  
}  
a(); // Hello
```

Q: What is Function Expression?

Assigning a function to a variable. Function acts like a value.

```
var b = function() {  
  console.log("Hello");  
}  
b();
```

Q: Difference between function statement and expression

The major difference between these two lies in **Hoisting**.

```
a(); // "Hello A"  
b(); // TypeError  
function a() {  
  console.log("Hello A");  
}  
var b = function() {  
  console.log("Hello B");  
}  
// Why? During mem creation phase a is created in memory and function  
// assigned to a. But b is created like a variable (b:undefined) and until  
// code reaches the function() part, it is still undefined. So it cannot be  
// called.
```

Q: What is Function Declaration?

Other name for **function statement**.

Q: What is Anonymous Function?

A function without a name.

```
function () {  
  
} // this is going to throw Syntax Error – Function Statement requires  
function name.
```

- They don't have their own identity. So an anonymous function without code inside it results in an error.
- Anonymous functions are used when functions are used as values eg. the code sample for **function expression** above.

Q: What is Named Function Expression?

Same as Function Expression but function has a name instead of being anonymous.

```
var b = function xyz() {  
  console.log("b called");  
}  
b(); // "b called"  
xyz(); // Throws ReferenceError:xyz is not defined.  
// xyz function is not created in global scope. So it can't be called.
```

Q: Parameters vs Arguments?

```
var b = function(param1, param2) { // labels/identifiers are parameters  
  console.log("b called");  
}  
b(arg1, arg2); // arguments – values passed inside function call
```

Q: What is First Class Function aka First Class Citizens?

We can pass functions inside a function as arguments and /or return a function(HOF). These ability are altogether known as First class function. It is programming concept available in some other languages too.

```
var b = function(param1) {  
  console.log(param1); // prints " f() {} "  
}  
b(function(){});  
  
// Other way of doing the same thing:  
var b = function(param1) {
```

```
    console.log(param1);
  }
  function xyz(){
  }
  b(xyz); // same thing as prev code

// we can return a function from a function:
var b = function(param1) {
  return function() {
  }
}
console.log(b()); //we log the entire fun within b.
```

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