

ES6

ECMAScript 6

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**আমি ধরেই নিচ্ছি
আপনি বিগিনার**

What is ES6 ?

ES6
ECMAScript 6

General Concept:

- ES6 is a modern update of JavaScript
- Widely known as JS6
- This is version of JavaScript

IN Depth:

- ES6 or ECMAScript 6 is a scripting language.
- ECMAScript is generally used for client-side scripting
- used for writing server applications and services by using Node.js

Why should I learn ES6 ?

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- For React JS
- For React Native
- For Vue js
- For Electron JS
- Or Any Node.js dependent development

What I Cover?

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- ES6 Basic's
- ES6 Function's
- ES6 Array's
- ES6 Object
- ES6 Class
- ES6 String
- ES6 Advance Feature's

Tools

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- Node.js
- WebStrom / VS Code

My First ES6 Program

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- Hello World

ES6 Basic Syntax

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The syntax is the set of rules which defines the arrangements of symbols.

Literals: A literal can be defined as a notation for representing the fixed value within the source code. Generally, literals are used for initializing the variables.

```
int x = 1;  
string str = "hello";
```

Variables: A variable is the storage location that is identified by the memory address.

Keywords: In Computer programming, a keyword is a word that has a special meaning in a specific context. It cannot be used as an identifier like the variable name, function name, or label.

Operators: Operators are symbols that define the processing of operands.

ES6 Syntax

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Case-Sensitive: uppercase characters and lowercase characters are different

Semicolons :The use of semicolons is optional in JavaScript.

ES6 Syntax

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Semicolons :The use of semicolons is optional in JavaScript.

The Strict Mode - পুলিশ

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পুলিশঃ চুরি করলে আপনাকে দমন করবে

- Preventing you from using undeclared variables

পুলিশঃ আপনি অন্ধ হলে রাস্তা পাড় করে দিবে।

- Removes some of the JavaScript silent errors by changing them to throw errors.
- Fixes the mistakes, That is difficult for JS Engine to overcome

```
"use strict";  
MyName();  
function MyName() {  
    name= "Rabbil Hasan";  
}
```

ES6 Spread Operator

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- Spread= প্রসার, বিস্তার
- three dots (...).
- Array কে প্রশস্ত করে নতুন ভেলু যোগ করে

```
let poorCountry = ['Bangladesh', 'Sirilanka'];
```

```
let richCountry = ['China', 'Canada', 'America'];
```

```
let richCountry = [...poorCountry, 'China', 'Canada', 'America'];
```

Without using spread operator

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```
let poorCountry=['bangladesh','sirilanka'];  
  
let richCounry=[...poorCountry,'America','Canda','Italy'];  
  
console.log(richCounry)
```

```
let poorCountry=['bangladesh','sirilanka'];  
let richCounry=['America','Canda','Italy'];  
richCounry.push(poorCountry);
```

ES6 Rest Parameter

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- Using rest parameter, a function can be called with any number of arguments.
- Rest parameter is prefixed with three dots (...).

```
function show(...numbers) {  
  let sum = 0;  
  for (let i of numbers) {  
    sum += i;  
  }  
  console.log("Sum = "+sum);  
}  
show(1, 2, 2);
```

Dynamic function

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- Functions by using the function constructor.

```
var f = function (){  
  
};
```

Using let:

- let keyword is assigned the block scope
- let cannot be re-declared.
- can be reassigned a value.

Using const:

- It cannot be reassigned a value.
- It is block scoped.
- A constant cannot be re-declared.

Using var

- let can be re-declared.
- can be reassigned a value.

Variable Scope

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Global Scope: In the global scope, the variable can be accessed from any part of the JavaScript code.

Local Scope: In the local scope, the variable can be accessed within a function where it is declared.

Variable Hoisting

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Hoisting মানে উত্তোলন
Value assign আগে,
Declare পরে

simple for loop

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```
var i;  
var sum=0;  
for(i=1;i<=10;i++)  
{  
  console.log(i);  
}
```

The for...of loop

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```
var nameArray = ['Kamal', 'Jamal', 'Tomal', 'Malalmal'];  
for(let oneName of nameArray)  
{  
  console.log(oneName);  
}
```

Object

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The for...in loop

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```
var myself = {firstname:"Rabbil", lastname:"Hasan", age:29,city:"Dhaka"};
for (props in myself) {
  console.log(myself[props]);
}
```

ES6 Decision-Making

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নতুন কিছু নেই -

- Simple Function
- Parameterized functions
- Rest Parameters
- Returning functions
- Anonymous function
- Parameterized Anonymous function
- Arrow functions
- The Function Constructor

Anonymous function

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- A function without a name
- It can be declared dynamically at runtime
- An anonymous function can be assigned within a variable.

ES6 Arrow Function

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- To write smaller function syntax.
- Arrow functions make your code more readable and structured.
- Arrow functions are anonymous functions
- Can declare without the function keyword.

-
- Arrow functions cannot be used as the constructors.

ES6 Arrays

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- ES6 Arrays
- ES6 Array Methods
- ES6 Array destructuring
- ES6 Map
- ES6 Set

ES6 Arrays

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- Simple Array

```
var MyArray = new Array(1,2,3,4,5);
```

```
var MyArray = [1,2,3,4,5];
```

- ES6 Multidimensional Arrays

```
var one=["A","B","C","D","E"]
```

```
var two=["A","B","C","D","E"]
```

```
var three=["A","B","C","D","E"]
```

```
var total=[one,two,three]
```

ES6 Map

- Map is a collection of data

```
var map = new Map();
```

```
map.set('key1', 'Bangladesh');
```

```
map.set('key2', 'India');
```

```
map.set('key3', 'Canada');
```

```
map.set('key4', 'America');
```

```
console.log(map.values());
```

```
console.log(map.keys());
```

ES6 Arrays

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ES6 Map

- Loop For Map Values and Keys

ES6 Map

- `delete(key)`
- `get(key)`
- `clear()`
- `has(key)`

ES6 Set

- Set is a collection of data
- Set is almost like array
- But it does not contain any duplicates.

```
var mySet= new Set();  
mySet.add("Green")  
mySet.add("Red")  
mySet.add("Orange")  
console.log(mySet);
```

```
let colors = new Set(['Green', 'Red', 'Orange', 'Yellow', 'Red']);  
console.log(colors);
```

ES6 Set

```
for(mySet of mySet){  
  console.log(mySet);  
}
```

ES6 Set

- **.clear()**
- **.delete(value)**
- **.has(value)**
- **.values()**
- **Set.size**

ক্লাস কেনো দরকার ?

- Before ES6, it was hard to create a class in JavaScript.
- But in ES6, we can create the class by using the class keyword

ES6 Class And Object

ES6 Class Constructor

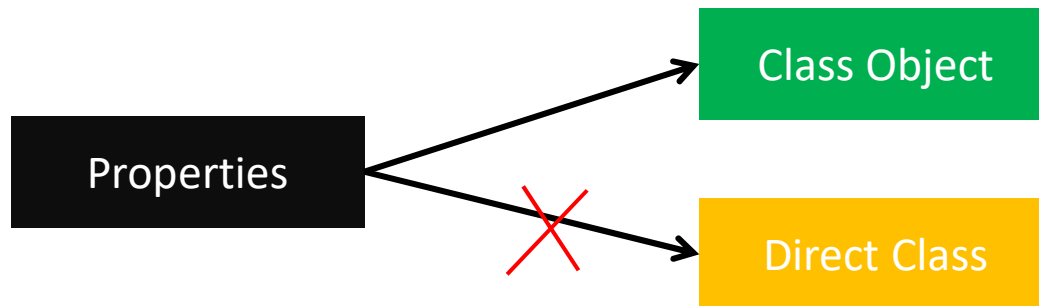
- Constructor হচ্ছে ক্লাসের নিজস্ব মেথড/ফাংশন
- ক্লাস অবজেক্ট তৈরি হলেই, Constructor অটো কল হয়
- অন্য ফাংশনের মতোই Constructor কাজ করে
- কিন্তু Constructor রিটার্ন করতে পারে না

ES6 Class

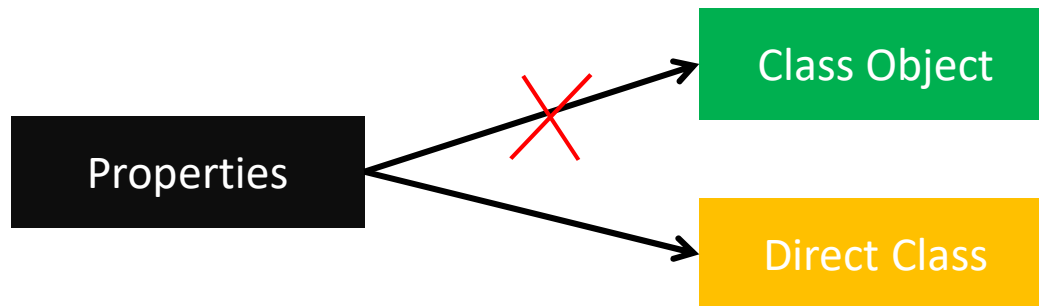
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Static Keyword:

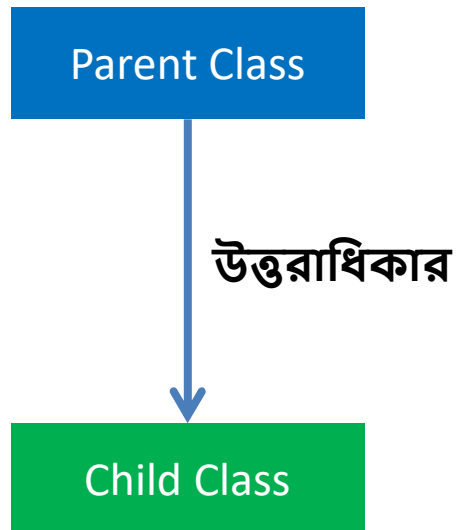
Without Static Keyword:



With Static Keyword:



Class Inheritance



Class Inheritance

- বাবার ক্ষমতা
- ছেলের ক্ষমতা

Super Keyword

- Module – জোট,একত্রিত কিছু
- ES6 Module Export – ES6 Module Import
- Modules make it easy to maintain the code
- Debug the code
- Reuse the piece of code

Module Export Import

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- Class Export
 - Function Export
 - Variable Export
 - Class Import
 - Function Import
 - Variable Import
-
- Named : Export-Import By Using Same Name
 - Default: Export – Import By Using Any Name