```
/*
    1. let and const
*/

//ES5
// var name5 = 'Jane Smith';
// var age5 = 23;
// name5 = 'Jane Miller';
// console.log(name5);

// //ES6
// const name6 = 'Jane Smith';
// let age6 = 23;
// name6 = 'Jane Miller';
// console.log(name6);

//var -> function scope
//let & const -> block scope

//ES5
// function driversLicence5(passedTest) {
//     if (passedTest) {
//         console.log(firstName);
//         var firstName = 'John';
//         var yearOfBirth = 1990;
//     }
//     console.log(firstName + ', born in ' + yearOfBirth +
//         ', is now offically allowed to drive a car');
// }

// driversLicence5(true);

// //ES6
// function driversLicence6(passedTest) {
//     const firstName = 'John';
//     let yearOfBirth;

//     if (passedTest) {
//         yearOfBirth = 1990;
//     }
//     console.log(firstName + ', born in ' + yearOfBirth +
//         ', is now offically allowed to drive a car');
// }
// driversLicence6(true);

// let i = 23;

// for (let i = 0; i < 5; i++) {
//     console.log(i);
// }

// console.log(i);

/*
    2. Strings
*/
```

```
// let firstName = 'John';
// let lastName = 'Smith';
// const yearOfBirth = 1990;

// function calcAge(year) {
//     return 2020 - year;
// }

// //ES5
// console.log('This is ' + firstName + ' ' + lastName +
//     '. He was born in ' + yearOfBirth + '. Today, he is ' +
//     calcAge(yearOfBirth) + ' years old');

// //ES6
// console.log(`This is ${firstName} ${lastName}. He was born in
${yearOfBirth}. Today, he is ${calcAge(yearOfBirth)} years old`);

/*
    3. Arrow Function
*/

//ES5
// var calcAge = function (year) {
//     return 2020 - year;
// }

//ES6
// const calcAge = () => {
//     let age = 2020 - 1987;
//     console.log(age);
// }

// const calcAge = year => {
//     let age = 2020 - year;
//     console.log(age);
// }

// const calcAge = (year, currentYear) => {
//     let age = currentYear - year;
//     console.log(age);
// }

// let years = [1990, 1982, 1987, 1999];
// //For
// // for (let i = 0; i < 4; i++) {
// //     console.log(years[i]);
// // }

// //ES5
// //forEach
// years.forEach(function (item, index) {
//     console.log(item, index);
// })

// //ES6
// years.forEach(el => console.log(2020 - el))
```

```
// let age6 = years.map((el, index) => `${2020 - el} ${index}`);
// console.log(age6);


// Change to ES6 Syntax
// var whatDoYouDo = function (job, firstName) {
//     switch (job) {
//         case 'teacher':
//             return firstName + ' is a teacher';
//         case 'driver':
//             return firstName + ' is a driver';
//         case 'designer':
//             return firstName + ' is a designer';
//         default:
//             return firstName + ' does something else';
//     }
// }

// const whatDoYouDo = (job, firstName) => {
//     switch (job) {
//         case 'teacher':
//             return `${firstName} is a teacher`;
//         case 'driver':
//             return `${firstName} is a driver`;
//         case 'designer':
//             return `${firstName} is a designer`;
//         default:
//             return `${firstName} does something else`
//     }
// }

/*
    4. Map
*/

// let numbers = [1, 2, 3, 4, 5];
// let result = [];
// //for loop
// // for (let i = 0; i < numbers.length; i++) {
// //     result[i] = numbers[i] * 2;
// // }
// // console.log(result);

// //map
// //ES5
// var res1 = numbers.map(function (number, index) {
//     console.log(index);
//     return number * 2;
// })
// console.log(res1);

// //ES6
// let res2 = numbers.map(number => number * 2);
// console.log(res2);

// let smartphones = [{
```

```
//     name: 'Iphone',
//     price: 1000
// }, {
//     name: 'Nokia',
//     price: 200
// }, {
//     name: 'Samsung',
//     price: 500
// }];

// //ES5
// let price5 = smartphones.map(function (item) {
//     return item.price;
// })
// console.log(price5);

// //ES6
// let price6 = smartphones.map(item => item.price);
// console.log(price6);


/*
    5. Destructuring
*/

//Destructuring Array

//ES5
// var john5 = ['John', 28, true];
// var firstName5 = john5[0];
// var age5 = john5[1];
// var isMarried5 = john5[2];

// console.log(firstName5, age5, isMarried5);

// //ES6
// let john6 = ['John', 28, true];
// const [firstName6, age6, isMarried6] = john6;
// console.log(firstName6, age6, isMarried6);

//Destructuring object

// let obj = {
//     firstName: 'John',
//     age: 28,
//     isMarried: true
// }

// //ES5
// var firstName5 = obj.firstName;
// var age5 = obj.age;
// var isMarried5 = obj.isMarried;

// console.log(firstName5, age5, isMarried5);

// //ES6
// const {
```

```
//     firstName,
//     age,
//     isMarried
// } = obj;

// console.log(firstName, age, isMarried);

// const {
//     firstName: namaDepan,
//     age: umur,
//     isMarried: sudahMenikah
// } = obj;
// console.log(namaDepan, umur, sudahMenikah);

// Destructuring array object
// const cars = [
//     {name: 'Toyota Agya', color: 'White'},
//     {name: 'Daihatsu Xenia', color: 'Black'},
//     {name: 'Pajero', color: 'Silver'}
// ];

// let [
//     {color: c1, name: n1},
//     {color: c2, name: n2},
//     { color: c3, name: n3}
// ] = cars;

// console.log(c1, c2, c3);
// console.log(n1, n2, n3);


// let numbers = [1, 2, 3];

// let [one, two, three] = numbers.map(number => number);

// console.log(one, two, three);

/*
    6. Rest and Spread Operator
*/

//Rest
//ES5
// const addNumbers5 = function(a, b, c, d, e, f, g, h, i, j){
//     let numbers = [a, b, c, d, e, f, g, h, i, j];
//     let sum = 0;
//     for(let i = 0; i < 5; i++){
//         sum += numbers[i];
//     }
//     return sum;
// }

// console.log(addNumbers5(1,2,3,4,5,6))

// const addNumbers6 = (...numbers) => {
//     console.log(numbers);
//     let sum = 0;
```

```
//     numbers.forEach(number => sum += number)
//     return sum;
// }

// console.log(addNumbers6(1,2,3,4,5,6,7,8,9,10,11,12,13))

// let numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

// let [one, two, three, ...rest] = numbers;
// console.log(one, two, three)
// console.log(rest);

//Spread Operator
// let color = ['Red', 'Green', 'Blue'];
// let favoriteColor = ['Pink', 'Yellow', 'Purple'];
// let defaultColor = ['Black', 'Silver'];

// //ES5
// let combineColor5 =
color.concat(favoriteColor.concat(defaultColor));
// console.log(combineColor5);

// //ES6
// let combineColor6 = [...color, 'Magenta', ...favoriteColor,
...defaultColor];
// console.log(combineColor6);

/*
    7. Default Function Argument
*/

// const makeAjaxRequest = (url = 'www.google.com', method = 'GET') =>
{
//     // if (!method) {
//     //     method = 'GET';
//     // }
//     console.log(url, method);
// }

// makeAjaxRequest();
// makeAjaxRequest('www.facebook.com')
// makeAjaxRequest(undefined, 'POST');

/*
    8. Clasess
*/

// class Polygon {
//     constructor(height, weight) {
//         console.log("Constructor is running");
//         this.height = height;
//         this.weight = weight;
//     }
//     calcArea() {
//         return this.height * this.weight;
//     }
```

```
// }

// const polygon = new Polygon(10, 10);
// console.log(polygon.calcArea());


class Car {
    constructor({ title }) {
        console.log('Constructor class Car is running');
        this.title = title;
    }
    getTitle() {
        return this.title;
    }
}

class Toyota extends Car {
    constructor({ color }) {
        super({ title: 'Toyota' });
        this.color = color;
        console.log('Constructor class Toyota is running');
    }
    getColor() {
        return this.color;
    }
}

const car = new Car({ title: 'Toyota' });
console.log(car.getTitle());
const toyota = new Toyota({ color: 'White' });
```