

JS



# OBJECTS IN JAVASCRIPT

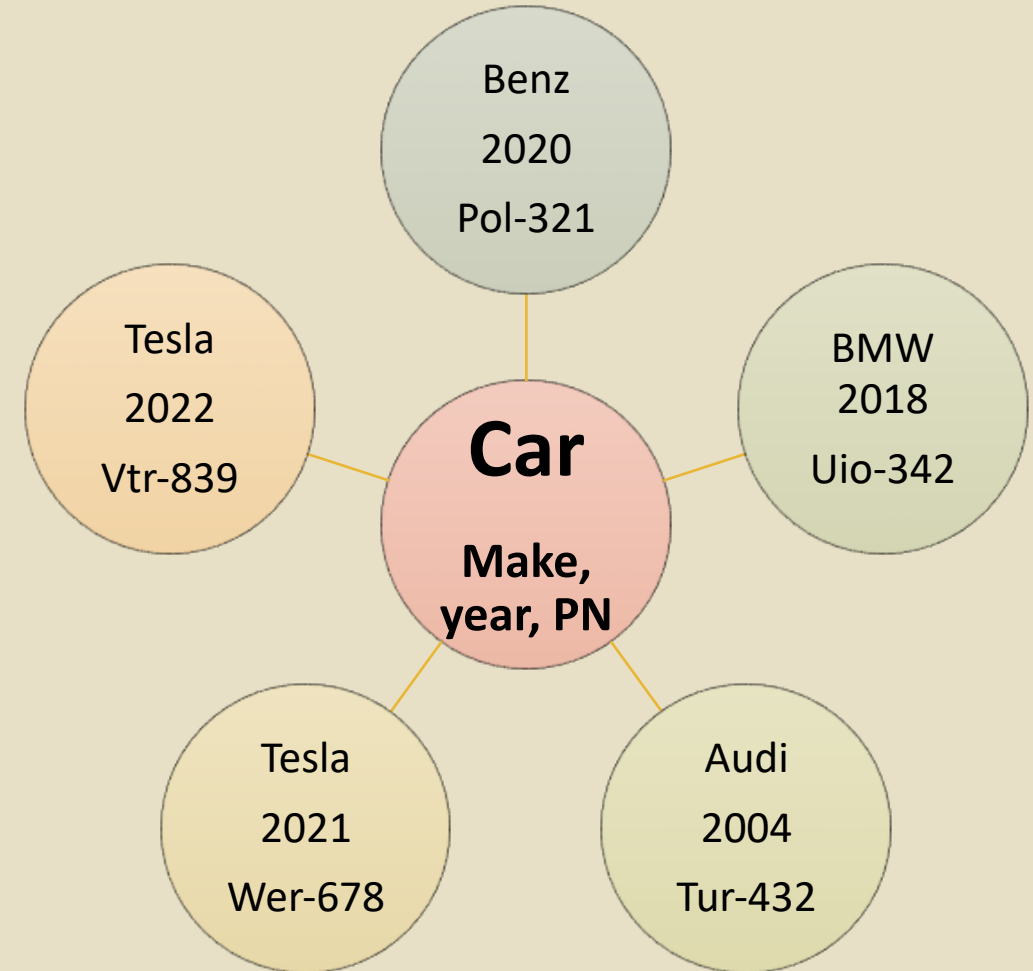
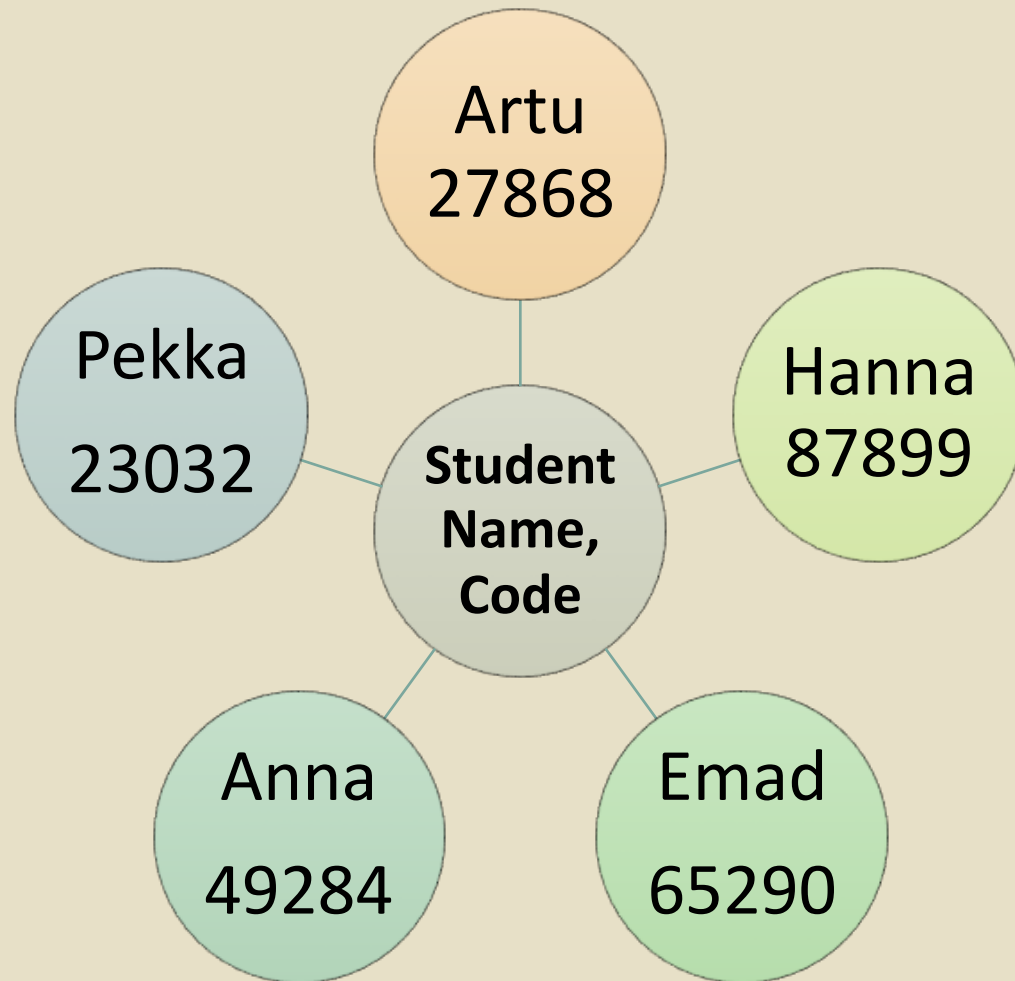
(PART 2)

2022H1 OSE (Kasper, Shokoofeh)

# Today's agenda

- Objects vs objects instances
- Creating objects dynamically
- Defining object methods
- Sample code (Library project)
- Warmup tasks
- Quiz review

# Object vs Object instances



# Object vs Object instances

```
var myCountry = {  
  name: "Finland",  
  population: 5501043  
};
```

```
var otherCountry = {  
  name: "Sweden",  
  population: 9747355  
};
```

Are these definitions Object or Object instances?

# Restrictions of creating objects using object literal?

- Needs to introduce object instances one by one!
- For each Object, introduce the pair of 'property name' and 'value' again and again.
- For each Object, introduce the methods again and again.

 **Repetitive task** 

 **Difficult to maintain the code** 

# A better mechanism to use Object in JS



# Define a template using Object constructor

Name of Object

Values for initializing the properties

```
function Student(stdName, stdCode, stdBirthYear) {  
    this.code = stdCode;  
    this.name = stdName;  
    this.birthYear = stdBirthYear;  
}
```

Referring to the  
properties of the  
object

Name of properties

# Creating object instances using **NEW** operator

```
var student1= new Student('Hanna', '65748', 2003);
```

```
var student2 = new Student('Artu', '12345', 2000);
```

```
console.log(student1.name + ", " + student1.birthYear);
```

```
console.log(student2.name + ", " + student2.birthYear);
```

Hanna, 2003

Artu, 2000



```
1  function Student(stdName, stdCode, stdBirthYear) {  
2      this.code = stdCode;  
3      this.name = stdName;  
4      this.birthYear = stdBirthYear  
5  }  
6  
7  var student1= new Student("Hanna", "65748", 2003);  
8  var student2 = new Student("Artu", "12345", 2000);  
9  
10 console.log(student1.name + ", " + student1.birthYear);  
11 console.log(student2.name + ", " + student2.birthYear);  
12
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

/usr/local/bin/node ./10.sample1.js

Hanna, 2003

Artu, 2000

# Methods in Objects

```
function Student(stdName, stdCode, stdBirthYear) {  
    this.code = stdCode;  
    this.name = stdName;  
    this.birthYear = stdBirthYear;  
  
    this.toString = function() {  
        return "name = " + this.name + ", code = " + this.code + ", Byear = " + this.birthYear ;  
    }  
  
    this.getAge = function(){  
        var age = 2022- this.birthYear;  
        return age;  
    }  
}
```

# Methods in Objects

```
console.log (student1.toString());  
var stdAge = student1.getAge();  
if(stdAge< 35)  
    console.log ('Eligible for study loan');
```

```

1  function Student(stdName, stdCode, stdBirthYear) {
2      this.code = stdCode;
3      this.name = stdName;
4      this.birthYear = stdBirthYear;
5
6      this.toString = function() {
7          return "name = " + this.name + ", code = " + this.code + ", Byear = " + this.birthYear ;
8      }
9
10     this.getAge = function(){
11         var age = 2022- this.birthYear;
12         return age;
13     }
14 }
15
16 var student1= new Student("Hanna", "65748", 2003);
17 var student2 = new Student("Artu", "12345", 2000);
18
19 console.log (student1.toString());
20 var stdAge = student1.getAge();
21 if(stdAge< 35)
22     console.log('Eligible for study loan');

```

PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL

Filter (e.g. text, !exclude)

```

/usr/local/bin/node ./10.sample1.js
name = Hanna, code = 65748, Byear = 2003
Eligible for study loan

```