

# JavaScript Objects

# Objects store information

Think of them like...a lookup table. Or dictionaries. Or card catalogs.

They are made up of keys and values.

An object can't have two keys with the same name.  
Each key has to be unique.

# How to create a new object

```
let person = {  
  name: "Amari",  
  favoriteColor: "green",  
  job: "Software developer"  
}
```

```
console.log(person.name)  
// "Amari"  
console.log(person.favoriteColor)  
// "green"  
console.log(person.job)  
// "Software developer"  
console.log(person.hometown)  
// undefined
```

# Dot notation vs bracket notation

Both work to retrieve data from objects.

Bracket notation is useful when your key is in a variable or if the key is a string.

```
let lookupKey = "job"
```

```
console.log(person[lookupKey])  
// "Software developer"
```

# What can objects hold?

```
let person = {  
  name: "Amarî",  
  address: {  
    street: "4400 Nightingale Ct.",  
    city: "Sassboro",  
    state: "NC"  
  },  
  skills: ["Python", "JavaScript", "SQL", "AWS"],  
  cool: true,  
  birthdate: new Date(1981, 2, 4)  
}
```

# When do I use arrays and when do I use objects?

- *Arrays* are for lists of things, usually alike
- *Objects* are for grouping details about one thing
- You often combine them:
  - arrays of objects
  - objects with arrays as values

## Array of objects

```
let team = [  
  { name: "Amari", yearsOfExperience: 4},  
  { name: "Niki", yearsOfExperience: 1},  
  { name: "Lennon", yearsOfExperience: 2},  
]
```

```
let totalYearsOfExperience = 0  
for (let member of team) {  
  totalYearsOfExperience += member.yearsOfExperience  
}
```

# Object with arrays

```
let student = {  
  name: "Ryan",  
  testScores: [91, 83, 88, 79, 95]  
}
```

```
let course = {  
  title: "Advanced Juggling",  
  students: [  
    {  
      name: "Ryan",  
      testScores: [91, 83, 88, 79, 95]  
    },  
    {  
      name: "Gray",  
      testScores: [89, 92, 90, 94, 87]  
    }  
  ]  
}
```



## Exercise: Find people by city

Write a function called `findPeopleByCity` that takes two arguments, `city` and `people`. `people` will be an array of objects with the keys `name` and `city`. It should return an array of people who live in the specified city.

```
let people = [
  {name: "Autumn", city: "Durham"},
  {name: "Parker", city: "Raleigh"},
  {name: "Kerry", city: "Durham"},
]

findPeopleByCity("Durham", people)
// [
//   {name: "Autumn", city: "Durham"},
//   {name: "Kerry", city: "Durham"},
// ]

findPeopleByCity("Raleigh", people)
// [{name: "Parker", city: "Raleigh"}]
```