

JavaScript Objects

as data structures

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.

```
let person = {  
  name: "Amar",  
  favoriteColor: "green",  
  job: "Software developer"  
}  
  
console.log(person.name)  
// "Amar"  
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: "Amar", 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: [91, 83, 88, 79, 95]  
    }  
  ]  
}
```


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"}]
```