JSON

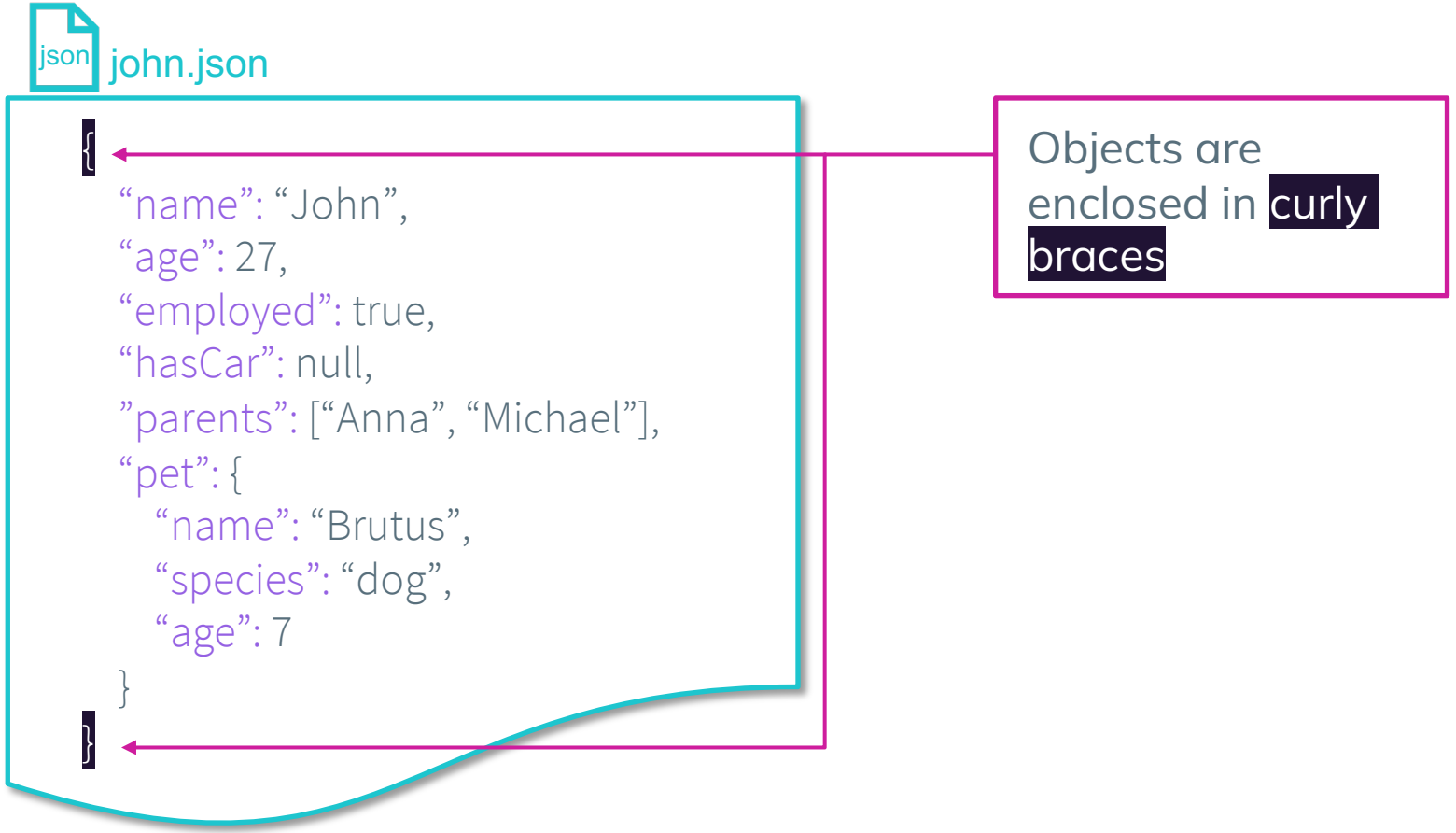
step-by-step

The JSON object

john.json

```
{
   “name”: “John”,
   “age”: 27,
   “employed”: true,
   “hasCar”: null,
   ”parents”: [“Anna”, “Michael”],
   “pet”: {
      “name”: “Brutus”,
      “species”: “dog”,
      “age”: 7
   }
}
```

The JSON object



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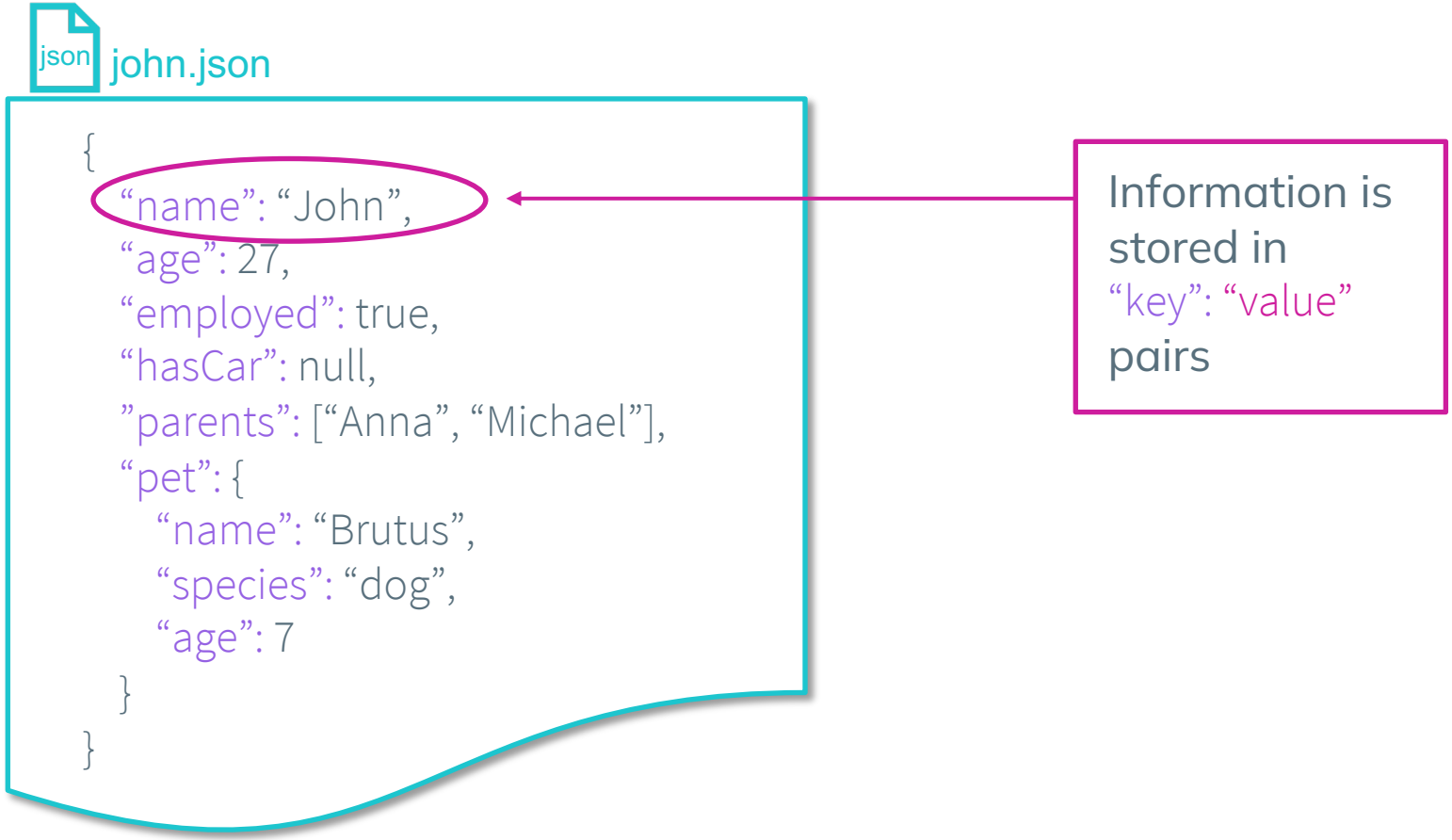

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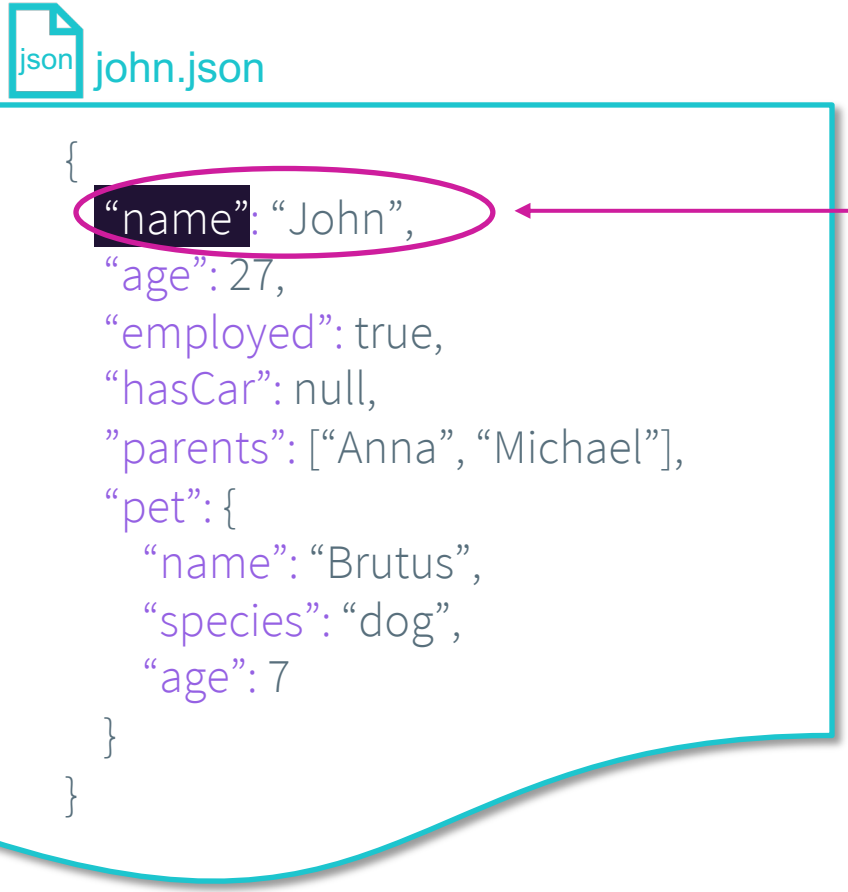

Information is stored in "key": "value" pairs

keys are of datatype **string**

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values **must be** one of the following data types:

- string
- number
- boolean
- null
- array
- object

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strings are any kind of characters **enclosed in “ “**

- “word”
- “This is also a string.”
- “7 bananas”

t be one
ving

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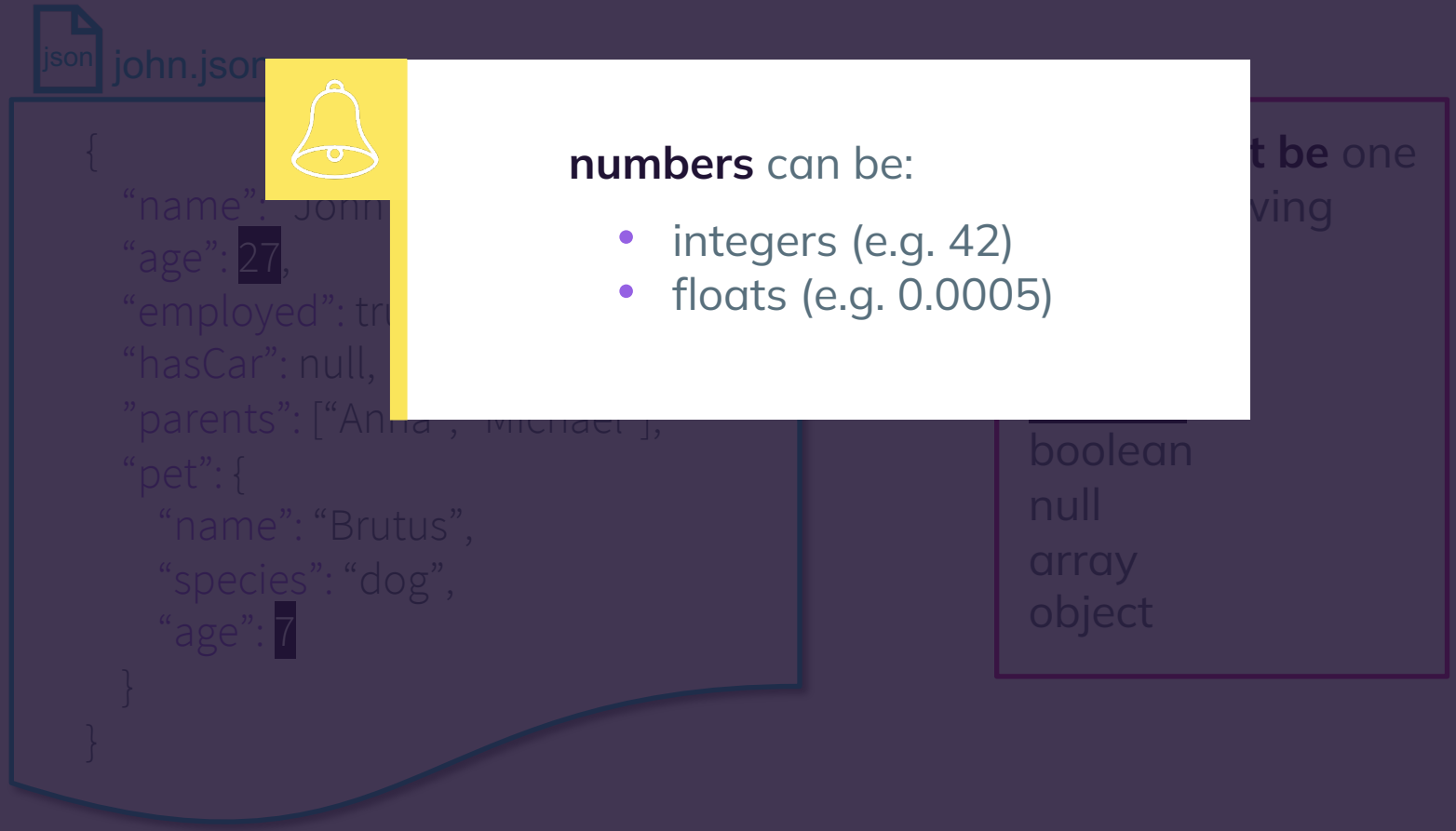

numbers can be:

- integers (e.g. 42)
- floats (e.g. 0.0005)

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```

a **boolean** has one of two possible values

- true / false
- 1 / 0

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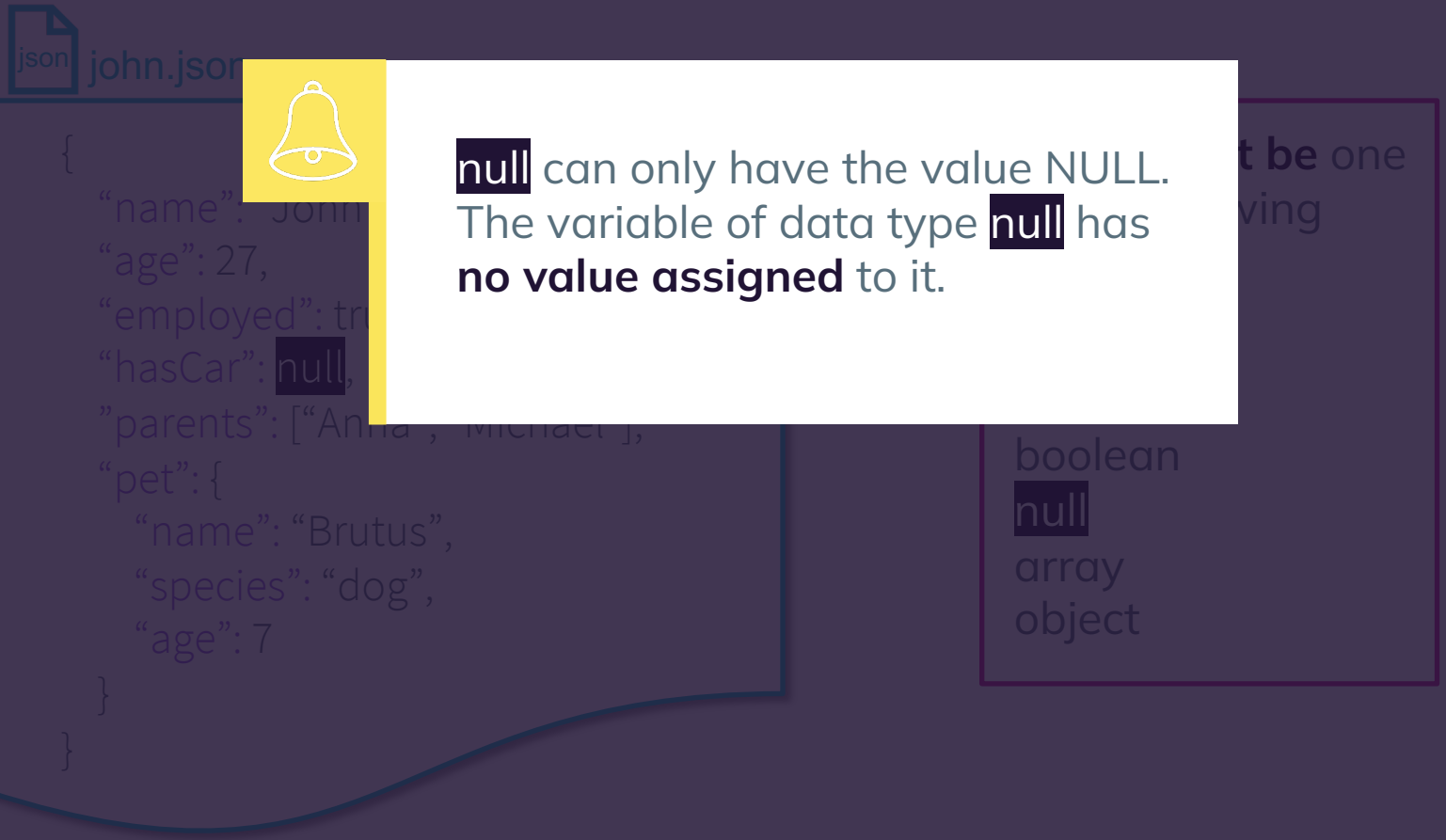

null can only have the value NULL. The variable of data type **null** has **no value assigned** to it.

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  }
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```

An **array** is a collection of elements.
Can be understood as a list.

- [“Bibi”, “Tina”]
- [1,2,3]
- [“some string”, 0.5, true]

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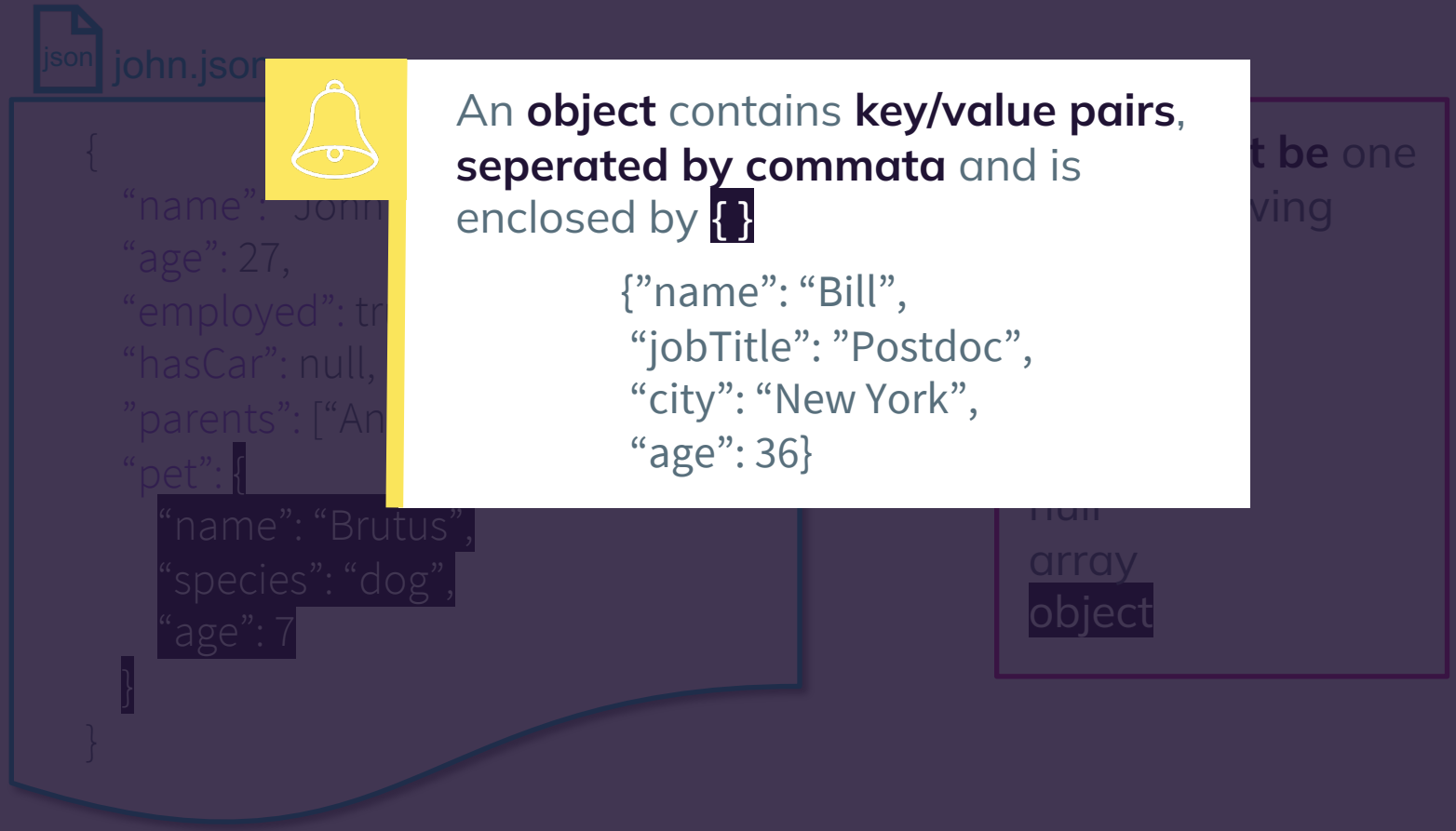
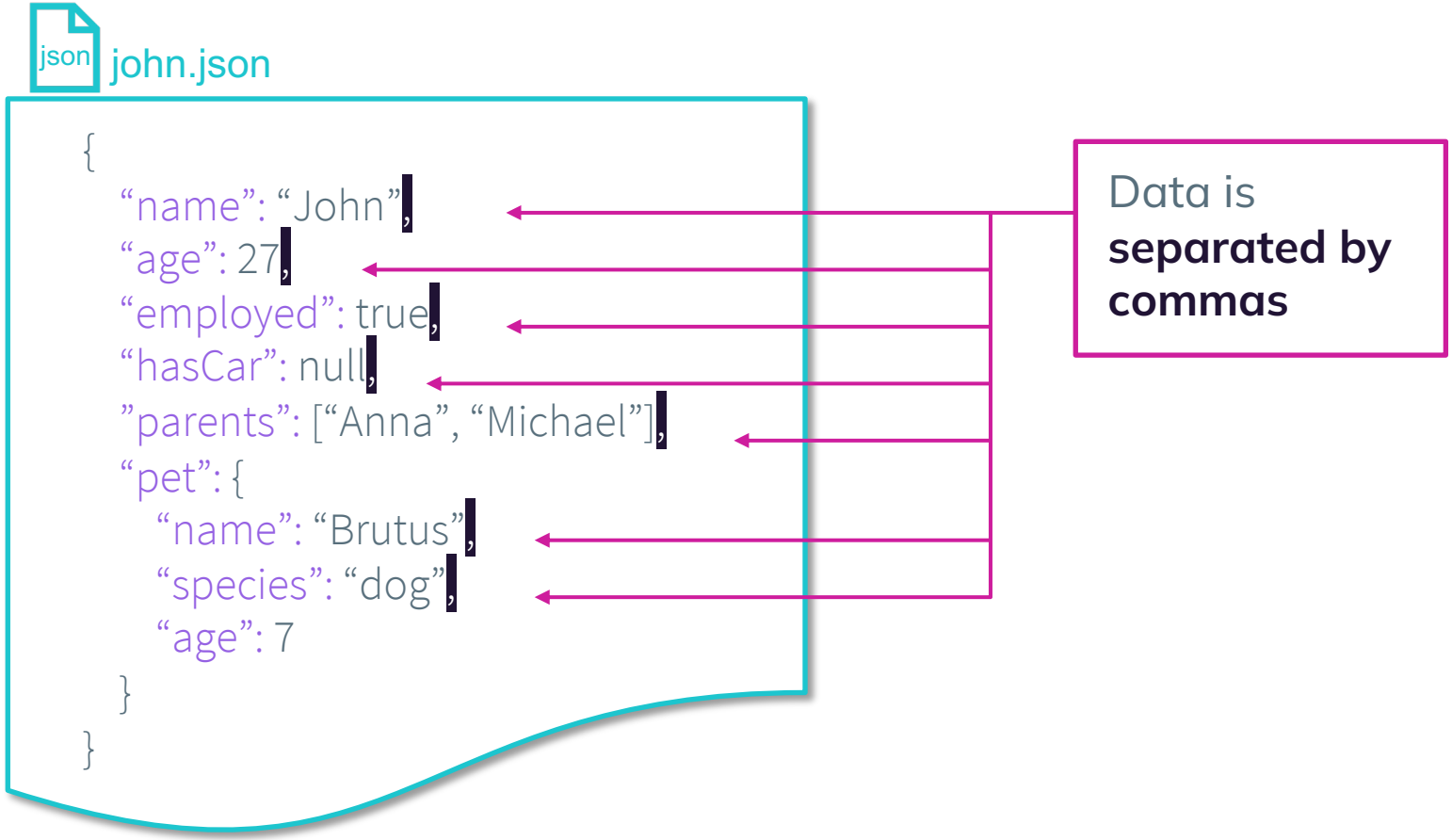
The JSON object



An **object** contains **key/value pairs**, **seperated by commata** and is enclosed by { }

```
{"name": "Bill",
 "jobTitle": "Postdoc",
 "city": "New York",
 "age": 36}
```

The JSON object



The JSON object - indentation

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   }
}
```

Structured metadata – JSON vs. XML

json john.json

```
{
  “name”: “John”,
  “age”: 27,
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  “hasCar”: null,
  ”parents”: [“Anna”, “Michael”],
  “pet”: {
    “name”: “Brutus”,
    “species”: “dog”,
    “age”: 7
  }
}
```

xml john.xml

```
<name>John</name>
<age>27</age>
<employed>TRUE</employed>
<hasCar>NULL</hasCar>
<parents>Anna</parents>
<parents>Michael</parents>
<pet>
  <name>Brutus</name>
  <species>dog</species>
  <age>7</age>
</pet>
```

Structured metadata

XML

```
<example>
    <superhero>Wonder Woman</superhero>
    <publisher>DC Comics</publisher>
    <identities>
        <identity>Princess Diana</identity>
        <identity>Diana Prince</identity>
    </identities>
    <pet>
        <name>Jumpa</name>
        <species>kangaroo</species>
    </pet>
</example>
```

JSON

```
{
 "superhero": "Wonder Woman",
 "publisher": "DC Comics",
 "identities": [
    "Princess Diana",
    "Diana Prince"
 ],
 "pet": {
    "name": "Jumpa",
    "species": "kangaroo"
 }
}
```

YAML

```
---
superhero: Wonder Woman
publisher: DC Comics
identities:
- Princess Diana
- Diana Prince
pet:
    name: Jumpa
    species: kangaroo
```

if you are interested in YAML,
also see https://yaml.org/


Questions?

DISCLAIMER

This slide deck is part of the Lesson

Fundamentals of Scientific Metadata: Why Context Matters

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