JavaScript (JS)

Literals vs Variables

```
console.log("The answer is");

var message = "The answer is";

console.log(message); // Outputs "The answer is"

console.log("message"); // Outputs "message"
```

STRING LITERAL

```
console.log("The answer is");
```

STRING LITERAL

```
var message = "The answer is";
```

STRING VARIABLE

```
console.log(message); // Outputs "The answer is"
```

STRING VARIABLE

```
console.log("message"); // Outputs "message"
```

STRING LITERAL

NUMBER LITERAL

```
console.log(42);
```

NUMBER LITERAL

```
var num = 42;
```

NUMBER VARIABLE

```
console.log(num); // Outputs "42"
```

NUMBER VARIABLE

```
console.log("num"); // Outputs "num"
```

STRING LITERAL

~~document.write~~

document.write

- Typically only used in very specific situations
- Can override existing HTML
- Hard to use with complicated HTML

Objects

```
console.log("Hi!");
document.write("<img src='party-time.gif'>");
```


OBJECT TYPE: HOTEL
OBJECT TYPE: CAR
OBJECT TYPE: CAR
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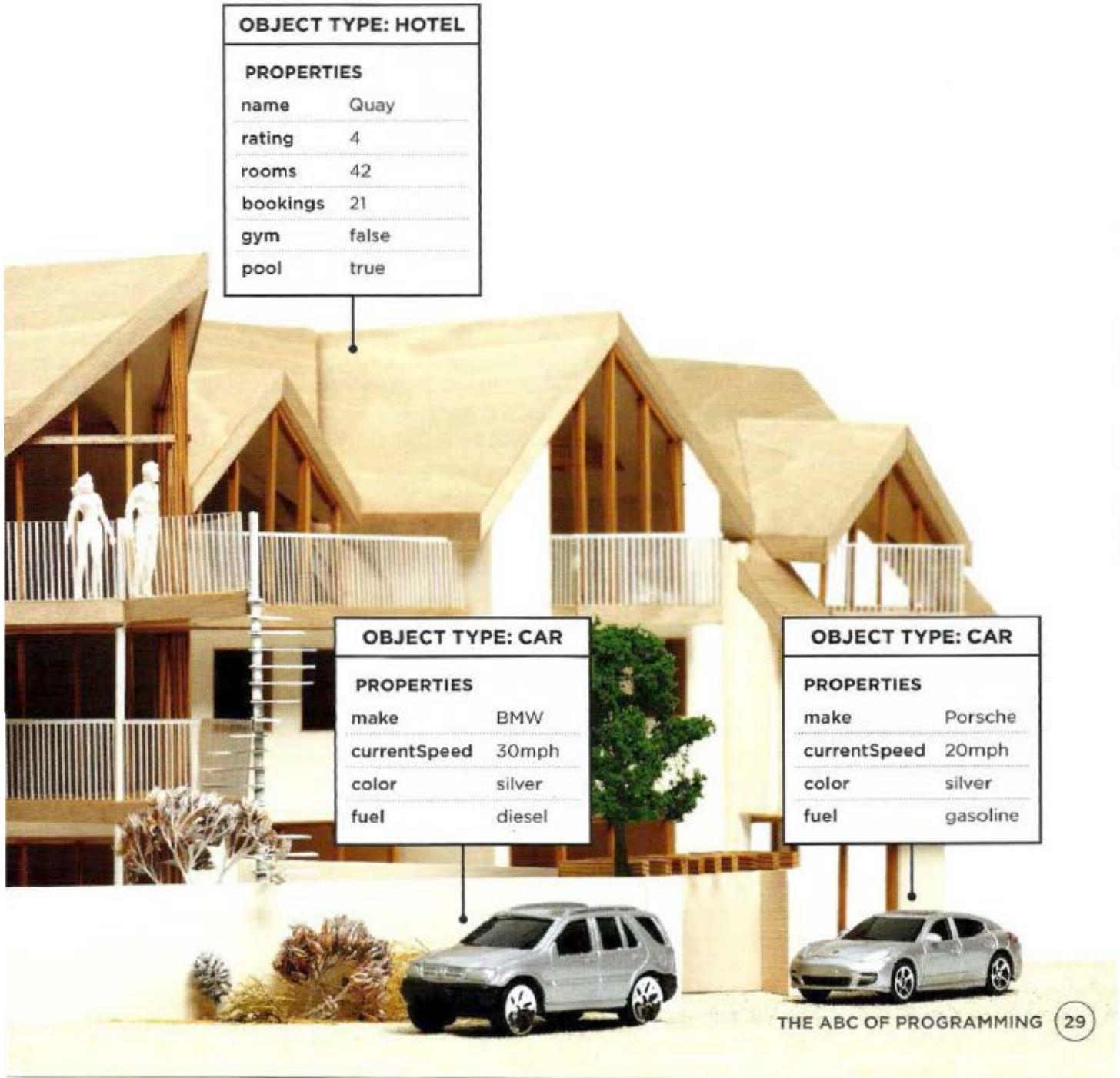
OBJECT TYPE: HOTEL
PROPERTIES
name Quay
rating 4
rooms 42
bookings 21
gym false
pool true
OBJECT TYPE: CAR
PROPERTIES
make BMW
currentSpeed 30mph
color silver
fuel diesel
OBJECT TYPE: CAR
PROPERTIES
make Porsche
currentSpeed 20mph
color silver
fuel gasoline
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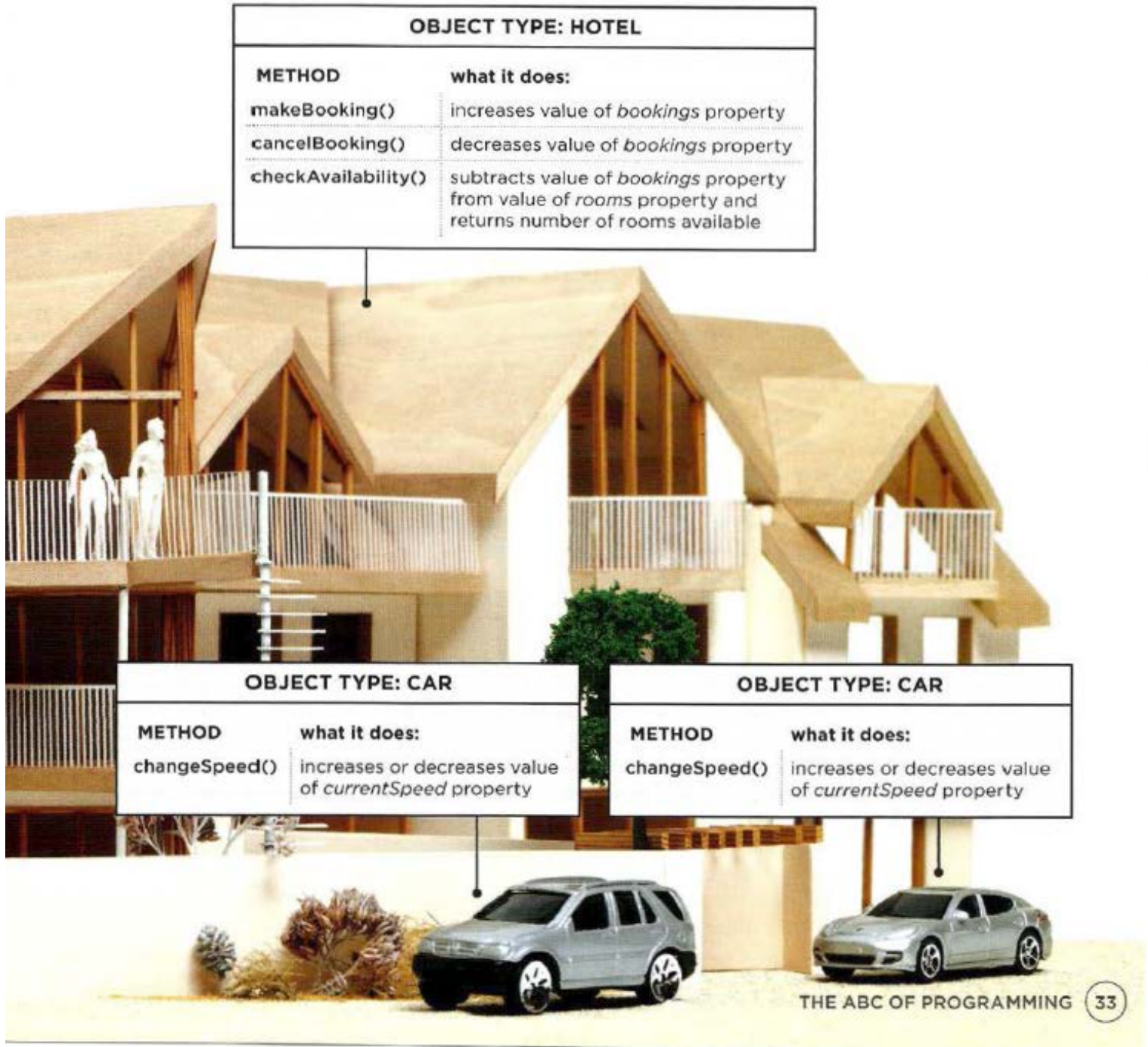
OBJECT TYPE: HOTEL
METHOD
what it does:
makeBooking()
increases value of bookings property
cancelBooking()
decreases value of bookings property
checkAvailability()
subtracts value of bookings property from value of rooms property and returns number of rooms available
OBJECT TYPE: CAR
METHOD
what it does:
changeSpeed()
increases or decreases value of currentSpeed property
OBJECT TYPE: CAR
METHOD
what it does:
changeSpeed()
increases or decreases value of currentSpeed property
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Creating Elements

```
var newHeader = document.createElement("h1");
```

STORE ELEMENT IN VARIABLE

CREATES AND RETURNS A NEW ELEMENT

Element === Object

- Element MDN Reference
- Element objects have properties (variables) for:
  - id – the element's id attribute
  - className – the element's class attribute
  - textContent – the text inside of the element's tags
  - style – the style attribute
  - Etc.

```
var newHeader = document.createElement("h1");
newHeader.textContent = "Hello";
// newHeader now looks like this: <h1>Hello</h1>
```

Adding Element to the Page

```
var newHeader = document.createElement("h1");
newHeader.textContent = "Hello";
document.body.appendChild(newHeader);

// The page now looks like:
// <body>
//   <h1>Hello</h1>
// </body>
```

```
document.createElement(...) // Function
document.body // Variable
```

Repetition

Loops && Loops

LOOP HEADER

```
for (var counter = 0; counter < 10; counter = counter + 1) {
    console.log(counter);
}
```

LOOP BODY

CONDITION

```
(var counter = 0; counter < 10; counter = counter + 1)
```

INITIALIZATION

UPDATE

Loop Flow

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

1 → 2

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

2

3

4

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

3

5 ← 4

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

5

6

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

8 ← 7

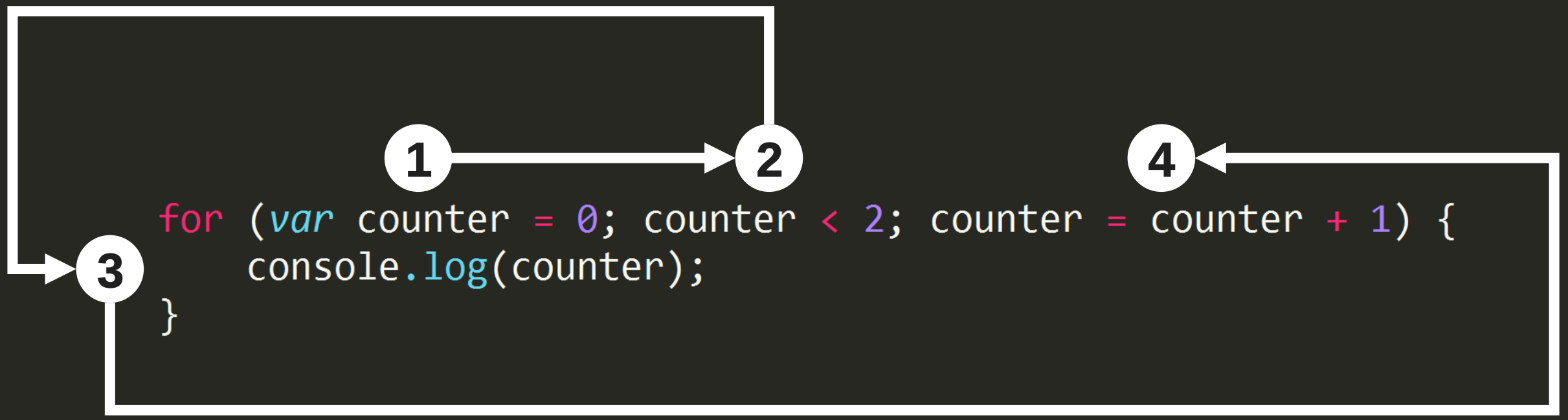
```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

8

```
for (var counter = 0; counter < 2; counter = counter + 1) {
    console.log(counter);
}
```

LOOP OVER

Overall Flow


1
2
4
3
for (var counter = 0; counter < 2; counter = counter + 1) {
console.log(counter);
}

Loop Shorthand

```
for (var counter = 0; counter < 10; counter = counter + 1) {
    console.log(counter);
}

for (var i = 0; i < 10; i += 1) {
    console.log(i);
}

for (var i = 0; i < 10; i++) {
    console.log(i);
}
```

```
i = i + 1
i = i - 1

i += 1
i -= 1

i++
i--
```

While Loops

```
for (var i = 0; i < 10; i += 1) {
    console.log(i);
}
```

```
var i = 0;
while (i < 10) {
    console.log(i);
    i += 1;
}
```