NodeJS

LABA

CLASSES & OOP

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CLASSES

In object-oriented programming, a class is an extensible program-code-template for creating objects, providing initial values for state (member variables) and implementations of behavior (member functions or methods).

```
class MyClass {
  // class methods
  constructor() { /* ... */ }
  method1() { /* ... */ }
  method2() { /* ... */ }
  method3() { /* ... */ }
  /* ... */
}
```

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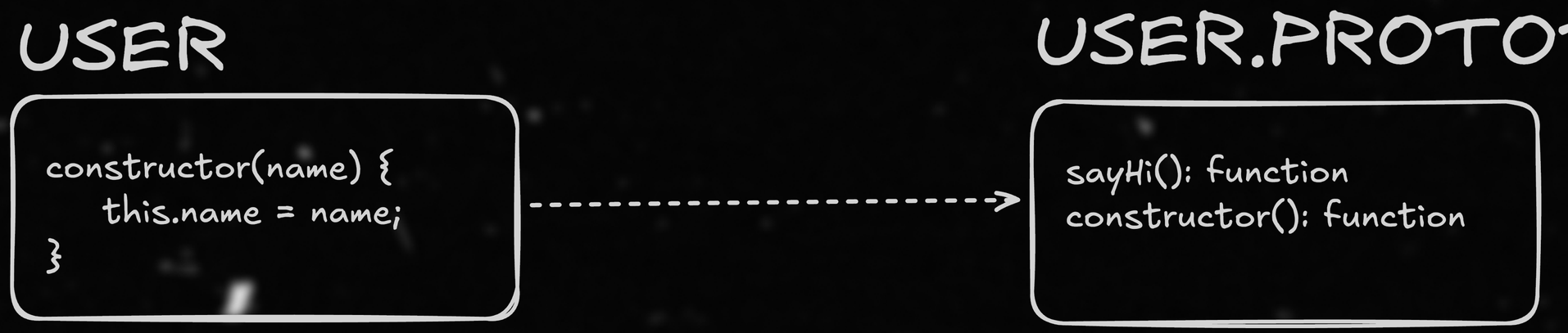
CLASSES




```
class User {
  constructor(name) {
    this.name = name;
  }

  sayHi() {
    console.log(`Hi ${this.name}!`);
  }
}
```

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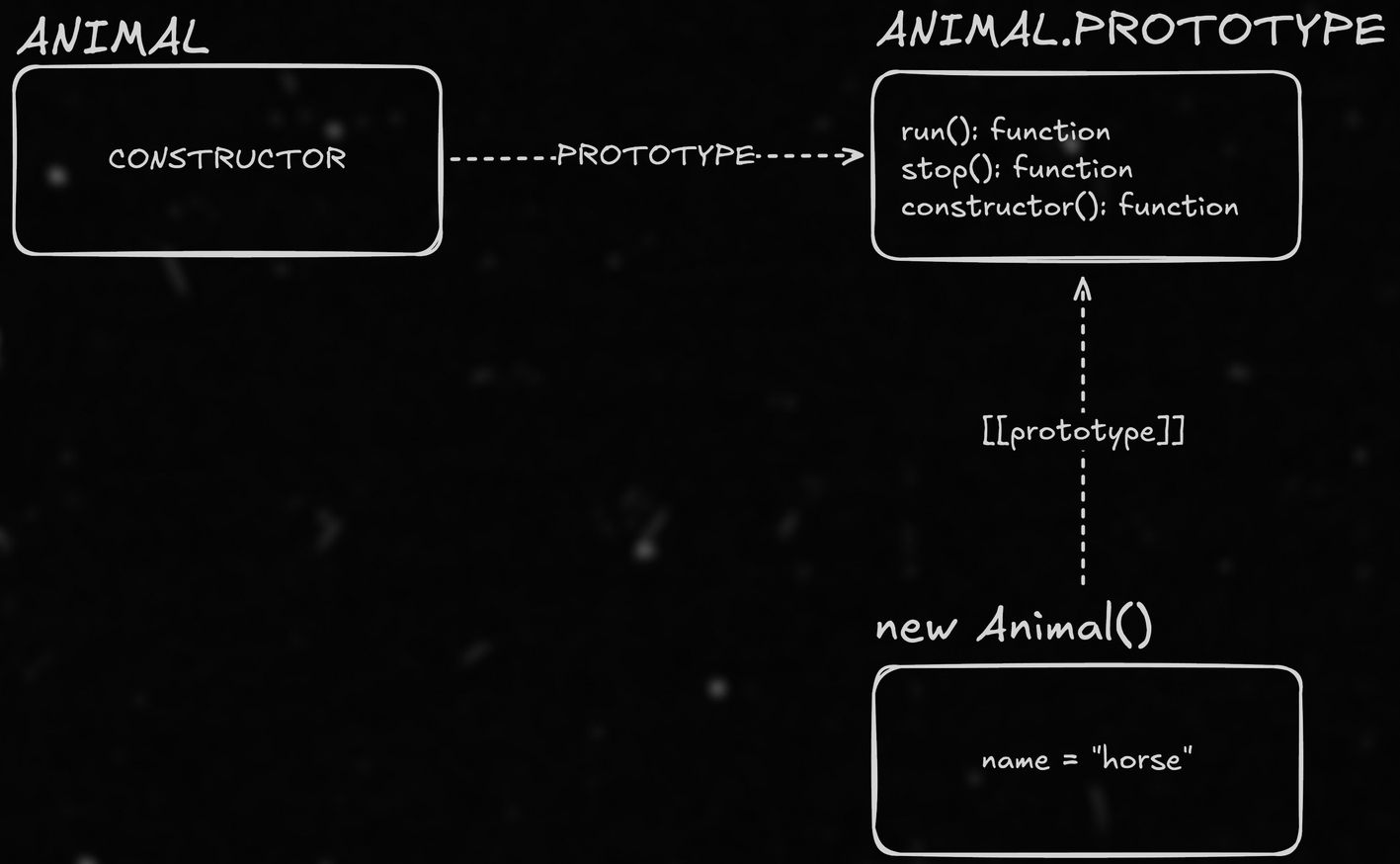
CLASSES VS FUNCTIONS

Differences:

1. A function created by class is labelled by a special internal property `[[IsClassConstructor]]: true`. So it's not entirely the same as creating it manually. The language checks for that property in a variety of places.
2. Class methods are non-enumerable. A class definition sets enumerable flag to false for all methods prototypes.
3. Classes always use strict.

CLASSES VS FUNCTIONS



CLASSES VS FUNCTIONS

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SUPER

Classes provide "super" keyword for that.

- super.method(...) to call a parent method.
- super(...) to call a parent constructor (inside our constructor only).

GENERATED CONSTRUCTOR

```
class Rabbit extends Animal {
  // generated for extending classes without own constructors
  constructor(...args) {
    super(...args);
  }
}
```

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CONSTRUCTORS

In JavaScript, there’s a distinction between a constructor function of an inheriting class (so-called “derived constructor”) and other functions. A derived constructor has a special internal property `[[ConstructorKind]]: “derived”.`, That affects its behavior with new.

- When a regular function is executed with new, it creates an empty object and assigns it to this.
- But when a derived constructor runs, it doesn’t do this. It expects the parent constructor to do this job.

ACCESS MODIFIERS

In object-oriented programming, properties and methods are split into two groups:

- Internal interface – methods and properties, accessible from other methods of the class, but not from the outside.
- External interface – methods and properties, accessible also from outside the class.

ACCESS MODIFIERS

In JavaScript, there are two types of object fields (properties and methods):

- Public: accessible from anywhere. They comprise the external interface.
- Private: accessible only from inside the class. These are for the internal interface.