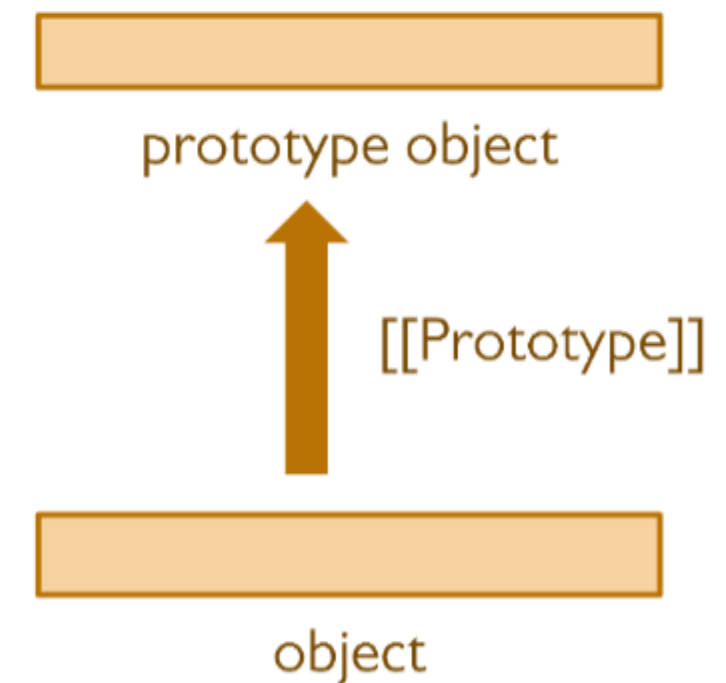


Prototypal Inheritance

- Prototypal inheritance involves enhancing an object by attaching new properties and functions to it.
- Every object possesses a unique hidden property known as `[[Prototype]]`, which can be null or linked to a different object, referred to as a prototype.
- If an object lacks a specific property, JavaScript will retrieve that property from the object's prototype by default. This mechanism is referred to as "prototypal inheritance" in programming.



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Prototypal Inheritance Example

Code :

```
<script>
  let Friend = {
    have: "iPhone"
  };
  let Person = {
    owns: "OnePlus"
  };

  Person.__proto__ = Friend; // sets Person.[[Prototype]] = Friend
  document.write(Person.have);
</script>
```

After using `__proto__`
Person is able to access Friend
object's properties

Person doesn't have access to
have property of Friend class

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Date Object

- The Date object is a data type built into the JavaScript language.
- The Date object offers a range of functionalities to work with dates and times, including getting and setting specific parts of a date, formatting dates, and calculating differences between dates.



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Date Object (contd.)

There are four ways to create the Date object:

- **New Date ()**: Creates a new date object with the current date and time.

- **New Date(year, month, day, hours, minutes, seconds, milliseconds)**: Creates a new date object with a specified date and time.

JavaScript counts months from 0 to 11, where January is 0 and December is 11.

```
//New Date()
var d = new Date();

// New Date(year, month, day, hours, minutes, seconds, milliseconds)
var d = new Date(2024, 2, 24, 10, 33, 30, 0);
```

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Date Object (contd.)

- **New Date(date string)**: Creates a new date object from a date String.
- **New Date(milliseconds)**: Creates a new date object as zero time plus milliseconds.

Example: 01, 1970 00:00:00 UTC.

```
// New Date(date string)
var d = new Date("January 15, 2024, 11:15:00");

// New Date(milliseconds)
var d = new Date(1000000000000);
```


Methods of Date Object

Method	Description
Date()	Returns today's date and time.
getDate()	Returns the day of the month for the specified date according to local time.
getDay()	Returns the day of the week for the specified date according to local time.
getFullYear()	Returns the year of the specified date according to local time.
getHours()	Returns the hour in the specified date according to local time.
getMilliseconds()	Returns the milliseconds in the specified date according to local time.
getMinutes()	Returns the minutes in the specified date according to local time.
getMonth()	Returns the month in the specified date according to local time.
getSeconds()	Returns the seconds in the specified date according to local time.

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Math Object

- In JavaScript, **Math** object allows you to perform mathematical tasks.
- It provides properties and methods to perform these tasks.
- All the properties and methods of Math objects are static in nature.
- All the properties and methods of a Math object can be called by using the keyword **Math** as an object.

Syntax:

```
Math.propertyname  
| | | OR  
Math.Methodname()
```

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Math Object Example - I

Code:

```
<script>
  var x = 2.4
  document.write("Ceil of " + x + " = " + Math.ceil(x) + "<br/>");
  document.write("Floor of " + x + " = " + Math.floor(x) + "<br/>");
  document.write("Square root of " + x + " = " + Math.sqrt(x) + "<br/>");
</script>
```

Example:

Ceil of 2.4 = 3
Floor of 2.4 = 2
Square root of 2.4 = 1.5491933384829668

Using Math Object

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Math Object Example - 2

Code:

```
<script>
  var radius = 2.4
  var Area = (Math.PI) * (Math.pow(radius, 2));
  document.write("Area of Circle is " + radius + " = " + Area + "</br>");
</script>
```

Using Math Object

Example:

Area of Circle is 2.4 = 18.09557368467721

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