*// A variable is a symbolic name for a value.*

*// Variables are declared with the let keyword:*

*let* x; *// Declare a variable named x.*

*// JavaScript supports several types of values*

x = 1; *// Numbers.*

x = 0.01; *// Numbers can be integers or reals.*

x = "hello world"; *// Strings of text in quotation marks.*

x = 'JavaScript'; *// Single quote marks also delimit strings.*

x = true; *// A Boolean value.*

x = false; *// The other Boolean value.*

x = null; *// Null is a special value that means "no value."*

x = undefined; *// Undefined is another special value like null.*

*// JavaScript's most important datatype is the object.*

*// An object is a collection of name/value pairs, or a string to value map.*

*let* book = { *// Objects are enclosed in curly braces.*

topic: "JavaScript", *// The property "topic" has value "JavaScript."*

edition: 7 *// The property "edition" has value 7*

}; *// The curly brace marks the end of the object.*

*// Access the properties of an object with . or []:*

book.topic *// => "JavaScript"*

book["edition"] *// => 7: another way to access property values.*

book.author = "Flanagan"; *// Create new properties by assignment.*

book.contents = {}; *// {} is an empty object with no properties.*

*// Conditionally access properties with ?. (ES2020):*

book.contents?.ch01?.sect1 *// => undefined: book.contents has no ch01 property.*

*// JavaScript also supports arrays (numerically indexed lists) of values:*

*let* primes = [2, 3, 5, 7]; *// An array of 4 values, delimited with [ and ].*

primes[0] *// => 2: the first element (index 0) of the array.*

primes.length *// => 4: how many elements in the array.*

primes[primes.length-1] *// => 7: the last element of the array.*

primes[4] = 9; *// Add a new element by assignment.*

primes[4] = 11; *// Or alter an existing element by assignment.*

*let* empty = []; *// [] is an empty array with no elements.*

empty.length *// => 0*

*// Arrays and objects can hold other arrays and objects:*

*let* points = [ *// An array with 2 elements.*

{x: 0, y: 0}, *// Each element is an object.*

{x: 1, y: 1}

];

*let* data = { *// An object with 2 properties*

trial1: [[1,2], [3,4]], *// The value of each property is an array.*

trial2: [[2,3], [4,5]] *// The elements of the arrays are arrays.*

};