

Data types and Variables

- JavaScript has three “primitive” types: **number**, **string**, and **boolean**
- Numbers are always stored as floating-point values
- Strings may be enclosed in single quotes or double quotes
- Booleans are either **true** or **false**

Variables

- A **variable** is a **named element** in a program, used **to store and retrieve information**
- Name must start with a letter
- Case sensitive: “A” and “a” are different!
- No space allowed in name
- No “special characters” like \$ or # or @
- Underscore is OK to join parts of name.

Variables

- Variables are declared with a `var` statement:
 - `var pi = 3.1416, x, y, name = "Dr. Dave" ;`
 - Variable names are case-sensitive
 - The word `var` is optional (but it's good style to use it)
- Variables declared within a function are local to that function (accessible only within that function)
- Variables declared outside a function are global (accessible from anywhere on the page)

Valid variable names

- `tempInFahr`
- `temp_in_fahrenheit`
- `TEMP_IN_FAHR`
- `current_age`
- `Sum2Date`

Invalid variable names

- `$pay_amount` ← **\$ not valid in name**
- `2hotForU` ← **Can't start with a digit**
- `Count#` ← **# not valid in name**
- `count of widgets` ← **Blanks in name**
- `final` ← **Reserved word**

Reserved words (Pg. 63)

Reserved Words That Shouldn't Be Used as Variable Names

abstract	delete	function	null	throw
boolean	do	goto	package	throws
break	double	if	private	transient
byte	else	implements	protected	true
case	enum	import	public	try
catch	export	in	return	typeof
char	extends	instanceof	short	var
class	false	int	static	void
const	final	interface	super	volatile
continue	finally	long	switch	while
debugger	float	native	synchronized	with
default	for	new	this	

[Types of variables]

- **Numeric:** 13, 22.3, -3.1415, 5.1E2 (5.1×10^2)
- **String:** any group of characters **within quotation marks**. “This is a string”, ‘another string’, ‘3.14’, “” (the empty string)
- **Boolean:** can only be **true** or **false**
`var is Ok = true;`

[Addition and Concatenation]

result = var1 + var2

- If **both** are **number** variables:
 - Adds var1 to var2
 - Assigns the result to the variable **result**
 - **result is a number variable**
- If **at least one** of the two **is a string**:
 - Concatenate var1 and var2
 - Assigns the result to the variable **result**
 - **result is a string variable**

[Keep in mind ...]

- JavaScript is **case sensitive.**
- Each JavaScript **command line must end with a semi-colon (;)**
- **One-line comment:** `// comment`
- **Multi-line comment:** `/* comment */`

Operators, I

- Arithmetic operators:

+ - * / % ++ --

- Comparison operators:

< <= == != >= >

- Logical operators:

&& || !

- Assignment operators:

+= -= *= /= %= <<= >>= >>>= &= ^= |=