

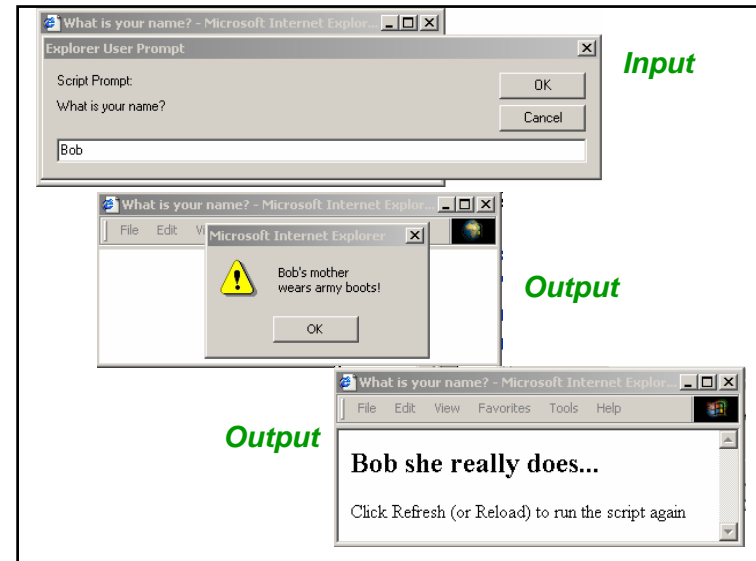
## JavaScript Prompt for Input Data

- ❖ **window.prompt(prompt, default)**
  - ◆ Return the string entered to assigned variable

```

<head>
<title>What is your name?</title>
<script type="text/javascript">
  var FirstName; // String of characters entered variable
  FirstName = window.prompt( "What is your name?", "" );
  window.alert(FirstName + "\'s mother\nwears army boots!");
  document.writeln("<h2>" + FirstName + " she really does...</h2>");
</script>
</head>
<body>
<p>Click Refresh (or Reload) to run the script again</p>
</body>
    
```

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## JavaScript Variables

- ❖ A **Variable** is a container of data
- ❖ Variables **declared** with **var** statement
  - ◆ **var i;** // Single variable declaration
  - ◆ **var firstEntry, secondEntry, j, M;** // Multiple variables
  - ◆ **var i=0, j=0;** // Variables can be initialized to a value
- ❖ Declaration statements end with semicolon (;)
- ❖ Multiple variable declaration comma separated
- ❖ Variable name can be any valid **identifier**.
  - ◆ An identifier is a name for a variable of function
  - ◆ Consisting of letters, digits, "\_" and "\$"
  - ◆ Can NOT begin with a digit
  - ◆ Can NOT have spaces or symbols other than \_ and \$
  - ◆ Can NOT be a JavaScript keyword

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## JavaScript Keywords

- ❖ JavaScript has only 22 keywords that can NOT be used for an identifier name.
 

break	case	continue	delete	do
else	false	for	function	if
in	new	null	return	switch
this	true	typeof	var	void
while	with			
- ❖ Twelve other keywords also can not be used for identifiers
 

catch	class	const	debugger	default
enum	export	extends	finally	import
super	true			

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## JavaScript Data Types and Values

- ❖ JavaScript is "loosely" typed language
- ❖ Simple Data Types
  - ◆ String of text
    - ◆ Symbolized using "abc123" or 'abc123'
    - ◆ Special Characters may be used \n \t \b \\' \'
  - ◆ Number
    - ◆ 8 byte (64 bit) floating point format  $\pm 1.8 \times 10^{\pm 308}$
    - ◆ `parseInt( string )`
      - Converts string to integer (whole number)
      - Drops all fractional part to right of decimal point
    - ◆ `parseFloat( string )`
      - Converts string to floating point (real number)
      - Keeps fractional part to right of decimal point

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## JavaScript Arithmetic Operators

- ❖ Used to perform arithmetic operations on numbers and data contained in variables, with the result usually assigned to variable
- ❖ Order of precedence determines which order the operations will be performed
- ❖ Note that the assignment operator = is defined last and precedence is last
- ❖ For readability insert parenthesis if order of operation not apparent in code

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## Arithmetic Operators Precedence

(Highest to Lowest)

- ( ) Defines order of operation
- Negative (unary)
- \* / % Multiply, Division, Remainder
- + - Addition, Subtraction
- = Assignment

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## Operator Evaluation Examples

```

<head>
<title>Test Score</title>
<script type="text/javascript">
  var Remainder, AvgScore;
  var Score = 93, ScoreCount = 1, TotalScore;
  TotalScore = Score;
  Score = 78;
  TotalScore = TotalScore + Score;
  ScoreCount = ScoreCount + 1;
  AvgScore = TotalScore / ScoreCount;
  document.writeln("<p>" + TotalScore % ScoreCount + "</p>");
  document.writeln("<p>Average = " + AvgScore
    + "<br /> F &lt;" + AvgScore / 2 + "</p>");
</script>
</head>
<body>
</body>
    
```

1  
Average = 85.5  
F < 42.75

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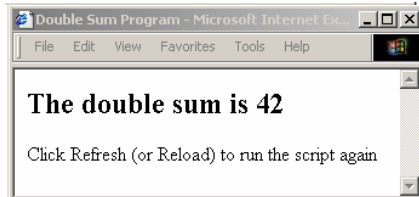
## Exams Average Example

```
<head>
<title>Test Score</title>
<script type="text/javascript">
  var AvgScore, Score, TotalScore = 0;
  Entry = window.prompt( "Enter Exam 1 Score", "0" );
  Score = parseFloat(Entry);
  TotalScore = TotalScore + Score;
  Entry = window.prompt("Enter Exam 2 Score", "0" );
  Score = parseFloat(Entry);
  TotalScore = TotalScore + Score;
  Entry = window.prompt("Enter Exam 3 Score", "0" );
  Score = parseFloat(Entry );
  TotalScore = TotalScore + Score;
  document.writeln("Average Score = " + TotalScore / 3);
</script>
</head>
<body>
</body>
```

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```
<head>
<title>Double Sum Program</title>
<script type="text/javascript">
  var firstEntry, secondEntry; // Strings entered by user
  var Number1, Number2,      // Converted number entries
      Sum, Double;          // sum of number1 and number2
  //Prompt and Receive numbers
  firstEntry = window.prompt( "Enter first number", "0" );
  secondEntry = window.prompt( "Enter second number", "0" );
  // Convert numbers from strings to integers
  Number1 = parseInt( firstEntry );
  Number2 = parseInt( secondEntry );
  // Add the numbers
  Sum = Number1 + Number2;
  Double = Sum * 2;
  // Display the results
  document.writeln( "<h2>The double sum is " + Double + "</h2>" );
</script>
</head>
<body>
<p>Click Refresh (or Reload) to run the script again</p>
</body>
```

## GUI and Double Sum Shorter Program



```
<head> <title>Double Sum Program</title>
<script type="text/javascript">
  var Num1, Num2;      // Converted number entries
  Num1 = parseFloat(window.prompt( "Enter first number", "0" ));
  Num2 = parseFloat(window.prompt( "Enter second number", "0" ));
  document.writeln( "<h2>The double sum is " + (Num1+Num2)*2 + "</h2>" );
</script>
</head>
<body> <p>Click Refresh (or Reload) to run the script again</p>
</body>
```

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## Coding Exercise

1. Create a JavaScript program that will prompt for an integer number and display in the browser window:
  - ◆ This number with color blue and 18 pt font size
  - ◆ Square of the number in red and font size 14
  - ◆ Cube of the number in green and and font size 14
  - ◆ Also display your name in the browser window