

COM1008: Web and Internet Technology

Exercise sheet 4: JavaScript

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Aims

The aim of this exercise sheet is to practise JavaScript programming. Start by downloading the JavaScript examples from the last lecture. These are available on the module Web site. Read through the lecture notes and make sure you understand each of the JavaScript examples. You should have run some of the downloaded JavaScript programs before you attempt the following exercises.

In each of the following exercises, use the `prompt` command to get user input (as illustrated in lectures). We will cover the use of forms at a later date in lectures.

A few hints:

- The function `parseFloat` can be used to convert a string into a floating point number, e.g.:

```
var fahrenheit =  
    parseFloat(prompt("Fahrenheit?"));
```


(See https://developer.mozilla.org/en/JavaScript/Reference/Global_Objects/parseFloat.)
There is also a `parseInt` function.
- The function `toFixed` can be used to display a floating point number using fixed point notation (See https://developer.mozilla.org/en/JavaScript/Reference/Global_Objects/Number/toFixed.)
- `²` and `³` may be useful for exercise 4, and `£` may be useful for exercise 5. (See http://en.wikipedia.org/wiki/List_of_XML_and_HTML_character_entity_references.)

1. The tasks

Exercise 1: Write a JavaScript program that reads a temperature in Fahrenheit from the keyboard and displays the equivalent in Celsius (centigrade). The formula for the conversion is: $C = (F - 32) * 5 / 9$. Your program should display the temperature in Celsius to an accuracy of 4 decimal places. (See the following for a discussion of the division operator in JavaScript in comparison to Java: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Operators/Arithmetic_Operators#Division)

Exercise 2: Write a JavaScript program that reads two numbers (call them `x` and `y`) input by the user and copies them into variables called `largest` and `smallest`, such that `largest` contains the larger of `x` and `y`, and `smallest` contains the smaller of `x` and `y`. Your program should display a message stating which number is the larger and which is the smaller.

Exercise 3: Write a JavaScript program that reads a number input by a user and then displays the string 'Hello' that number of times, e.g. if the user inputs 5, then 'Hello' will be displayed 5 times.

Exercise 4: Write a JavaScript program that displays a table of the integers between 1 and 10, their squares (i.e. x^2) and their cubes (i.e. x^3).

Exercise 5: Write a JavaScript program that reads three numbers: an initial sum of money, a desired sum of money and an annual rate of interest (expressed as a percentage). Your program should use a `while` loop to determine how many years it will take the investment to grow from the initial sum into the desired sum.