

COMP102 Fall 2006

**Assignment 3**

*Due: Thursday, November 2nd, 2006, 8:35 a.m.*

**For questions 2, 3, and 4, in addition to submitting a printout of your code, also send a single e-mail containing all 3 of your programs as 3 attachments to [sstolp@cs.mcgill.ca](mailto:sstolp@cs.mcgill.ca) with the subject "COMP102 Your First Name Your Last Name".** You must do this before the deadline to avoid a late penalty. All work you submit **MUST** be your own. *Short and well-organized solutions will be rewarded. Unnecessarily long and confusing solutions will be penalized.*

**1. Hunting for Bugs [6 marks]**

Each group of JavaScript statements below contains a mistake. Embed the statements in HTML and correct the most obvious mistake. Test that the mistake has been fixed by opening the file in a web browser. Print out and hand in the corrected code for parts (a), (b) and (c).

(a)

```
var x = prompt("Enter your favourite number", "")
if(x = 5)
{
    document.writeln("Wow, 5 is my favourite number too")
}
else
{
    document.writeln("My favourite number is not " + x + ", it's 5!")
}
```

(b)

```
var x = 5*(3+2)
document.writeln("According to my calculation, x is " + "x")
```

(c)

```
var n = 5
while(n > 0)
{
    n=n+1
}
document.writeln("The value of n now is " + n)
```

## 2. Five Numbers [10 marks]

Write a JavaScript program that asks the user to enter 5 numbers and then displays the average number entered as well as the highest and lowest number. The average number should be displayed in red, the highest number is blue and the lowest in green. Each of these numbers should appear on a separate line and no other output should be generated. Recall that the average of 5 numbers is obtained by adding these numbers together and dividing the sum by 5. You can assume that the user enters integer numbers when prompted. Print out your program and also attach it to the email for this assignment.

## 3. Grade Converter [14 marks]

Write a JavaScript function that converts a numerical grade to a letter grade. Then, write a program that continuously prompts the user for input (the numerical grade), uses your function to convert the numerical grade to a letter grade, and displays the letter grade to the screen, until the user no longer wishes to enter a grade. The user will click 'Cancel' in a popup window when he doesn't wish to continue.

You can assume that the user will always enter an integer, but it may be any integer. If the user enters in an invalid numerical grade (such as a number less than 0 or greater than 100), the program should just print out "Invalid input". For the purposes of this question, use the following letter grading scheme:

| Numerical Grade | Letter Grade |
|-----------------|--------------|
| 85-100          | A            |
| 80-84           | A-           |
| 75-79           | B+           |
| 70-74           | B            |
| 65-69           | B-           |
| 60-64           | C+           |
| 55-59           | C            |
| 50-54           | D            |
| 0-49            | F            |

Print out your program and also attach it to the email for this assignment.

## 4. String Processing [10 marks]

Write a JavaScript program that asks the user for input and then reports the number of occurrences of the (lowercase or uppercase) letter 'a' in the inputted string. Print out your program and also attach it to the email for this assignment.