

COMP 233-04B

Internet Applications

Assignment 5

The goal of this project is to experiment with regular expressions, trying different expressions that might be useful in validating data in web pages. As always, you should experiment as much as possible. Use the regular expression testing web page presented in class, or better, write your own.

Your task is to write regular expressions to check that text entered in a text box is as required. There are several exercises, some developed in stages. For each stage, you should develop a regular expression and check (i) that it accepts examples of required text, and (ii) that it rejects a range of examples of incorrect text.

On your hand-in page, you are asked to write down the regular expressions at each stage, and for the last stage (or the last stage you reach if you do not get to the end of an exercise) to write down some examples that your regular expression accepts and some that it rejects. You should choose your examples to be representative of the range of possibilities that might occur.

Hint. Make sure that your regular expressions are *anchored* at the beginning and end. You should always match the complete input, and not just substrings of the input.

Exercise 1 (5 marks)

Three words.

- a) The words Red, Green, or Blue—exactly as written here.
- b) The same words—but the first letter may be a capital or small.
- c) The same words—but letters may be capital or small in any pattern. Valid examples are: RED, bLuE.

Exercise 2 (5 marks)

A user name.

- a) The user has been asked to enter their user identification, a string consisting of exactly eight lower case letters.
- b) Modify your regular expression to allow user names with six to eight characters.
- c) Modify your regular expression so that the first character must be an upper case letter, followed by five to seven lower case letters.

Exercise 3 (6 marks)

A person's name.

- a) Names are written in standard American format, with a first name, a middle initial and a last name, separated by exactly one space. The first and last name may only consist of letters, with the first letter being a capital and the rest lower case.

First I. Last

- b) Allow for the middle initial to be omitted, or for more than one middle initial.
- c) Allow the first and last name also to include the characters '-' and "'", but not as the first or last letter. If any of these are used, the character following them must be a capital letter.

John-Ross O'Neill

- d) Can you think of a proper name that is not captured by the above? Can you extend your regular expression to cover that name also?

Exercise 4 (4 marks)

An interest rate expressed as a percentage. I'll leave you to make up your own stages here. It is usually best to build regular expressions in stages. They are too difficult to read when they get big.

- a) The interest value must be less than 100, i.e., no more than two digits. There may be any number of decimal places. A leading number zero may be omitted if there are decimal places. The % sign is optional. Valid examples are: 99.2094, 3.99%, 7%.

Hand-in Page — COMP 233-04B — Assignment 5

Family Name: _____ Family Name: _____

First Name: _____ First Name: _____

Student ID: _____ Student ID: _____

You are allowed and encouraged to work on this assignment in groups of two students.

Please write your regular expressions into the space below. For each exercise, add four representative examples of acceptable strings and four representative examples of illegal strings for the last stage you reached.

Put the completed hand-in page into the box marked COMP233B in front of room G 1.15. You are only asked to hand in written answers. No printouts of examples are required.

Due date: Friday, 20th August 2004, 12:00

1. a)

b)

c)

Good examples:

Bad examples:

2. a)

b)

c)

Good examples:

Bad examples:

3. a)

b)

c)

Good examples:

Bad examples:

d) Can you think of a proper name that is not captured by the above?

Can you extend your regular expression to cover that name also?

4. (Please write down the development stages you used and explain them briefly.)

1)

2)

3)

4)

Good examples:

Bad examples: