CS2211a Assignment 2

Issued on: Tuesday, October 6, 2015

Due by: 11:55 p.m. on Tuesday, October 13, 2015

- For this assignment, ***only electronic submission*** ***in pdf format*** at owl.uwo.ca is required.
- ONLY use ***Courier New*** (***size = 11 pts.***)
- ***Start each question in a NEW PAGE***
- ***Write the question number is a separate line followed by an empty line***
- After finishing the assignment, you have to do the following:
  - ❖ Type your report and convert it to the PDF format (*no handwriting*),
  - ❖ The report should include:
    - o Answers to *all* questions/requirements in the assignment
    - o Test cases (as well as sample outputs) to demonstrate and cover all possible options in your program
    - o A copy of all programs that you have written
    - o One *flowchart for Q3*
  - ❖ Prepare a soft-copy submission, including:
    - o A copy of your *typed* report
    - o All programs that you wrote (*each program in a file*)—*3 in total* (use meaningful program names)
  - ❖ Upload the soft-copy submission file-by-file (*4 in total*), or as an archived directory.

Failure to follow the above format may cost you 10% of the total assignment mark.

- Late assignments are strongly discouraged
  - o 10% will be deducted from a late assignment (up to 24 hours after the due date/time)
  - o After 24 hours from the due date/time, late assignments will receive a zero grade.

QUESTION 1 (25 marks)

Write a Bourne shell script **lastarg**, which takes 0 or more arguments and prints the last (rightmost) argument in the argument list. ***You can assume that arguments will be made up of letters and digits only.***

Note that, the number of arguments can be more than 10. For example, the output of

```
lastarg arg1 arg2 arg3 arg4 arg5 arg6 arg7 arg8 arg9 arg10 arg11
```

should be

```
arg11
```

If no argument is provided, simply return nothing.

You should write enough inline comments inside your shell script to explain each part of it.
In your report, you should include actual test cases (as well as sample outputs) to demonstrate all possible options in your program.

If ***lastarg*** *is placed in your home directory, what will happen if you execute the following command? Show the output and explain why you got this output.*

```
cd; lastarg .*
```

QUESTION 2 (25 marks)

Write a Bourne shell script **odd_prn**, which echoes ***its shell script file name*** as well as ***the values of its odd arguments***. Even arguments should be ignored. Each value should be echoed in a separate line. ***You can assume that arguments will be made up of letters and digits only.*** Note that, the number or arguments can be even or odd. Note also that, the number of arguments can be more than 10. For example, the output of:

```
odd_prn to C or not to C that is the question
```

should be

```
odd_prn
to
or
to
that
the
```

If no argument is provided, simply return the shell script file name only.

You should write enough inline comments inside your shell script to explain each part of it.
In your report, you should include actual test cases (as well as sample outputs) to demonstrate all possible cases in your program.

If ***odd_prn*** *is placed in your home directory, what will happen if you execute the following command? Show the output and explain why you got this output.*

```
cd; odd_prn .*
```

QUESTION 3 (50 marks)

Draw a ***flow chart*** and write a ***Bourne shell script*** that causes the following output (below) to be displayed. Note that, there is a single space between each value.

The number of column should be taken as an input during execution.

For example, if the input to the program is **6**, the program should produce the following output:

```
0
0 1
0 1 2
0 1 2 3
0 1 2 3 4
0 1 2 3 4 5
0 1 2 3 4
0 1 2 3
0 1 2
0 1
0
```

You should write enough inline comments inside your shell script to explain each part of it.

In your report, you should include actual test cases (as well as sample outputs) to demonstrate all possible cases in your program.