

# Programming Assignment #1

## Command Parser

February 18, 2013

### 1 Objective

- to develop a program that reads user commands from the command prompt and react upon these commands.

### 2 Submission Instruction

You are expected to submit using the online submission system using the upload file(s) link.

**The submitted code file should be named A1.cpp  
if your file has a different name, it will not be considered  
in the evaluation.**

**Submission Deadline is March 3rd @ 5PM [Firm  
deadline].**

- Missing the deadline == No Marks for this assignment
- Submit even if your code is partially working
- Plagiarism in any of the assignments ==> -10 Marks

### 3 Detailed Operation

- In all the following, a1.exe is assumed to be the name of your executable file
- Typically in the command prompt we write  
a1.exe command [optional parameter(s)]
- Your task is to identify the command and its parameters if applicable then return the output as expected.
- ~~After executing a specific command, your program should NOT close unless it receives an exit command.~~
- A List of the commands and their expected output is shown below.  
**Your program should exit after executing each command**

#### 3.1 print command

- this command should print all the passed arguments separated by single spaces
- **Command Line:** a1.exe print third year students are honest and clever  
**Expected output:** third year students are honest and clever

### 3.2 reverse command

- this command should print the provided arguments in a reverse order separated by single spaces
- **Command Line:** a1.exe reverse Cats love rabbits but rabbits hate cats” should print  
**Expected output:** cats hate rabbits but rabbits love cats

### 3.3 lower command

- this command should print all the provided arguments with all characters lowercase
- **Command Line:** a1.exe lower CAIRO UNIVERSITY  
**Expected output:** cairo university

### 3.4 shuffleWord command

- this command should shuffle the characters of a provided word by swapping every pair of characters
- **Command Line:** a1.exe shuffle structure  
**Expected output:** tsurtrcue

### 3.5 shuffleStatement

- this command should shuffle the words of the provided statements
- **Command Line:** a1.exe shuffleStatement Democracy is good  
**Expected output:** is Democracy good

### 3.6 Add

- this command should add all the numbers after add and return the sum
- **Command Line:** a1.exe add 4 5 6 2  
**Expected output:** 17

### 3.7 Delete

- this command should delete one of the provided arguments and print the remaining arguments. The argument to be deleted is identified by the first parameter given after delete
- **Command Line:** a1.exe delete 3 12 5 6 8 3 9  
**Expected output:** 12 5 8 3 9
- Note that 3 represent an index for the third element in the list and the list starts at 12.
- Note also the list may contain any data type

### 3.8 Random

- this command should generate a sequence of random numbers give a specific range (min and max numbers) and a seed value. The length of the sequence is passed as a parameter
- **Command Line:** a1.exe random 10 1 10 4  
a1.exe random sequenceLength minNumber maxNumber seedValue  
  
**Expected output:** 8 2 10 3 10 1 7 8 7 1
- Use rand() and srand(...) functions in this part

### 3.9 ~~exit command~~

- ~~• this command should close the program.~~
- ~~• Note that this is the only command after which the program will close otherwise the program should be expecting to receive another command~~

### 3.10 ERROR Handling

- You should check for the correctness of every command (e.g. number of arguments).
- You may use the following error messages to reflect the reason of not performing the command
  - “Undefined Command”
  - “Incorrect Number of arguments”
- Note that Error messages are case sensitive.

## 4 Additional Information

For a quick tutorial on parsing command arguments have a look at [this link](#) or [this link](#)