Indian Institute of Technology Bombay, Mumbai Department of CSE, Kanwal Rekhi Building CS101 – Computer Programming Autumn Semester 2014-2015

Special Makeup Lab 1 – Handout Tuesday, 7 October 2014

General Instructions: *Please read the instructions carefully before proceeding further.*

Read the entire lab handout carefully and understand it.

This lab requires you to **download, execute, and submit** one program today before you leave the lab.

The code snippet (splab1.cpp) is uploaded under '**Special Lab**' on course page on <u>http://www.cse.iitb.ac.in/~cs101/labs.html</u>

- I. **Download this splab1.cpp** file: Right click on **splab1.cpp** > click '**Save link as**' > Go to the desired directory and click '**Save**'.
- II. Load this .cpp in Code::Blocks
- III. Fill up the necessary blocks of the code
- IV. Compile and execute the splab1.cpp file
- V. Submit **only a single file** (splab1**.cpp**). The instructions for submitting/uploading a file are given below:

Goto <u>http://www.cse.iitb.ac.in/~cs101</u>

- 1. Click on 'Lab Assignment Submission' link.
- 2. Write your roll number in the text box.
- 3. Enter your CC (Computer Centre) LDAP password for authentication purposes
- 4. Click the 'Choose File' button.
- 5. Browse through your directory by navigating to the folder in which you have created the project. Select the program i.e. '.cpp' file, from your project directory.
- 6. Click the 'Submit' button.
- 7. A new page will open with the message 'Upload Successful. Click here to go back'
- 8. Perform these steps (1 to 7) for all the programs that you have written.
- VI. Please note that your IP address is being logged. So, only the lab assignment submissions made from the lab will be evaluated. **Submissions made from the hostel or outside the lab will <u>NOT</u> be considered.**
- VII. Since the .cpp file that you submit will be evaluated using an auto-grader, <u>**DO NOT**</u> write any cout statements, else your code **may not pass the auto-grader checks**

<u>Note:</u> Copying code from others amounts to violation of the honor code, and if detected, will lead to severe penalties, which could include award of the <u>FR</u> grade.

Objective: In this lab, you are required to solve practice problems based on conditional execution

Programs to be Submitted Online

The program splab1.cpp has 3 blocks of code that needs to be filled up. The first is Q1, second is Q2, and third is Q3 (Bonus Question and optional).

For Q1, you need to fill in the code within the BEGIN and END statement of the first empty block, which is 'DONT_ERASE_02_01'

For Q2, you need to fill in the code within the BEGIN and END statement of the second empty block, which is 'DONT_ERASE_03_01'

For Q3, you need to fill in the code within the BEGIN and END statement with a 'BONUS' tag of the third block, which is 'DONT_ERASE_04_01'

Take help of your TA if you have difficulty in indentifying the blocks of code.

Use of any Loops is not allowed. Usage of 'if', 'if-else', 'switch' is only permitted.

Q1) Arithmetic Operations

Accept two integer numbers from the user. Accept a character input from the user ('A' or 'S' or 'M' or 'D'). Check whether only the following characters have been entered. Based on this input, perform either Addtion, or Subtraction, or Multiplication, or Division of the two numbers.

Q2) Palindrome Number

Enter a 3 digit integer number. Check whether the number entered is a palindrome or not. A palindrome is a number that will read the same from left to right or right to left. E.g. 121, 242, 676 are examples of a 3 digit plaindrome number. 123, 211, 345, 322 are examples of numbers which are not palindrome.

Q3) Bonus Question – Optional

Accept integer number 'age' from the user and print whether the person is a Baby, Junior, Teenager, Adult, Elderly, Senior Citizen

String to be printed	Condition for Age
Invalid	Less than 0
Baby	0 to 5
Junior	6 to 12
Teenager	13 - 19
Adult	20 to 50
Elderly	51 to 60
Senior Citizen	61 to 101
Invalid	Greater than 101

Programs for Practice – Not to be submitted

Q4) Leap Year

Write a program which accepts an integer number as input from the user, denoting the year, and check and print whether the year is a 'leap year' or 'not a leap year'.

Q5) Vowel or Other Characters

Write a program that accepts a character as input from the user, and prints '1' if it is a vowel and '0' otherwise.

Q6) Print numbers in non-decreasing order

Write a program that accepts 3 integer numbers from the user and prints them in non-decreasing order.

Q7) Print numbers in non-decreasing order

Write a program that accepts 4 integer numbers from the user and prints them in non-decreasing order.