

# REVISION SHEET 3:

This revision sheets contains point-wise discussions that were held in the class. Therefore merely reading this document may NOT be much helpful and you HAVE TO recall the examples and classroom's whiteboard content along with these points.

## How to find if your algorithm is correct:

Some advice about the exercise questions given after the last revision session

“Question 1: Agriculture fields in Pakistan are measured in acres. One acre is of 43,560 square feet. Write an algorithm/pseudo code that takes input of length and width of a farmer's field in yards from the user and displays area of the field in acres.”

Process is “Dry run” and entire changes during Dry-Run are stored in Trace table in a fixed format

- One column for Line Number
- one column for each of the variable
- one column for each of the condition
- one column for Actual behavior

Algorithm/pseudo code is tracked as if it is being executed by machine (Computer/Mobile device etc.) and results, that are new or changed while executing that line, are recorded in the Trace Table;

## How to improve your programming efficiency:

Do not hesitate to trace an algorithm/pseudocode about which you fear that it “may” be correct. Tracing an algorithm that produces wrong results is equally good for improving the speed of your algorithmic thinking and improving the logic.

## How to be confident in programming:

Try to solve problems that you see being solved in other softwares. For example some softwares can detect if an entered data is correct or not; try to write pseudocode or source code that takes input a date and verifies if it is correct. Some software automatically correct the case (Names in proper case, conversion of first character of every sentence into upper-case, etc.); data entry of incorrect ISBN is rejected; a date associated with a file is stored in two bytes – how these two bytes store a data that seems to be much larger than two bytes – for example today’s date is “23-June-2020” need 12 bytes (one byte for each character) or in American format it is “6-23-2020” that need 9 bytes .Word-processors, like Libre-Office, MS Word or KingSoft’s WPS-Writer displays number of words characters and paragraphs in the text – try to write a program that can tell these three pieces of information about any text. These are just few examples of algorithms that are not hypothetical and you are seeing them as part of applications that you use frequently.

## Some more sources of exercise questions are given in the following list;

1. Jean-Paul Tremblay, Paul G. Sorenson; An introduction to Computer Science: an algorithmic approach; 2<sup>nd</sup> edition; 1984; McGraw-Hill Book Company
2. Yashwant Kanetkar; Let Us C;  
( “Let Us C” is about C and there is also a C/C++ version. A large number of exercise questions do not require C or C++ specific features, hence can be used in our context also.)

## EXERCISE QUESTIONS:

Suggested Exercise Numbers from the book

(The Python Workbook: A brief introduction with exercises and solutions, 2014) by Ben Stephenson, are given below;

61, 65, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78

