Programming Fundamental(CS111)
Assignment # 01
[CLO-1, Taxonomy Level-C2, PLO-2]

Course: BSCS-1   **Semester: 1st** (Fall 2023)

Due Date: 17/10/2023   **Total** Marks**:** 30

Instructions

1. *Plagiarism, copy & past material will lead to the cancellation of your assignment.*
2. *Write your* Name, Reg# on the first page (title page) of your submission.
3. No late submission

Program Design is the pivotal stage in computer program development, where programmers define input, processing, and output requirements and establish the program's logic. Thoroughly documented design steps facilitate future maintenance by other programmers. Algorithms and flowcharts are employed for a comprehensive understanding of the program's structure prior to coding.

Q.1 **Covert** each of the following scenarios into the most appropriate Algorithm and Flowchart (Note: using Flowgorithm for flowcharting, MS World for Algorithm). Identify the number and type of variables required in each case. (Mark: 5+ 5+10+10)

1. Develop a computer program that takes as input given lengths expressed in feet and inches. The program should then calculate the length in centimeters and display it on the console.

2. Develop a program that inputs a student name followed by five quizzes marks (out of 100). The program should output the student's name, the five marks, and the average marks.

3. Develop a program that takes as input any change expressed in Rupees(PKR). It should then compute the number of 100Rs Notes, 50Rs Notes, 20Rs Notes, and 10Rs Notes to be returned, returning as many 100Rs notes as possible, then 50Rs, 20Rs, and 10Rs that order. For example, 260 Rs should be returned as two 100Rs notes, one 50Rs note, and one 10Rs note.

4. You need to develop a computer program that calculates a customer's bill for a local Cable TV company. There are two types of customers: members and non-members. There are two different rates for calculating a bill: one for members and one for non-members. The following rates will be applied:

Membership holder:

- Bill processing fee: 100 PKR
- Basic Service fee: 200 PKR
- Premium channels: 50 PKR per channel

Non-Member

- Bill processing fee: 150 PKR
- Basic Service fee: 300 PKR
- Premium channels: 80 PKR per channel

Helping material:

- http://flowgorithm.org/index.html (download)