Programming Fundamentals

Dated: 14-2-2020 **BS-SE'19, Morning**

Deadline: Monday, 17-2-2020, before 8:30 am

Warm-up assignment 0

Design a flowchart for a campus management system (CMS) for Fall'19 students. The CMS is assumed to be designed for students only. Each student is enrolled in **five** subjects: 1) PF, 2) DLD, 3) Electronics, 4) Discrete Maths, and 5) Probability and stats. Short attendance report should be displayed for those students only that have less than 75% of attendance. Following functionality must be incorporated:

1) Find average GPA
2) Print short Attendance report
3) Perform self-assessment test

At the start, **choice** should be taken as an input from the user. **Choice** can only be '1', '2', and '3'. If the users enters any number other than 1,2 or 3 then error message "Invalid option" should be displayed and choice is again taken as an input from the user. If the correct choice is entered then the program should implement the relevant functionality. That is, e.g. if choice=1 then "Find average GPA" functionality should be executed. The functionality must adhere to the details mentioned as under:

1) Find average GPA
   Take GPA for five subjects as an input from the user. The program should then find the average GPA and print it.
2) Print short Attendance report
   Initialize ***total number of lectures*** with 15. Take ***number of lectures attended*** as an input from the user. The program should then find if there is a short attendance case or not. In case of short attendance, message "Your name is in the short attendance list" should be displayed. Otherwise, display the message "No short attendance issue".
3) Perform self-assessment test
   Take **base, power,** and **solution** as an input from the user. **solution** is basically the answer found/guessed by the user for the problem ($\mathbf{base^{power}}$). The program should then find the solution for $\mathbf{base^{power}}$ and store the answer to variable **correct_solution.** The user specified solution is then compared with the correctly calculated solution. If both solutions are equal then display the message "Correct answer", otherwise "Wrong answer".

After implementing any of the three functionalities, the program should end. That is, assume if **choice=1** then only find average GPA functionality should be executed and program should end right away.