

CS19101 PDS laboratory

Assignment 3

Write programs for problems 1,2 and 3 in three different files named A3_1.<Roll no.>.c, A3_2.<Roll no.>.c and A3_3.<Roll no.>.c respectively (without the '<' and '>'). Put these three files into a compressed directory named A1.<Roll no.>.zip and submit it.

Example: If your roll number is 19DEP99999, then the names of your files should be A3_1_19DEP99999.c, A3_2_19DEP99999.c and A3_3_19DEP99999.c.

This is an assignment on loops. You are not allowed to use array or function.

1. Take integers n and k as inputs through the keyboard. Compute square root of n up to k digits of accuracy by the Babilonian method. You can read the method from here: <https://blogs.sas.com/content/iml/2016/05/16/babylonian-square-roots.html>. Use a variable of type **double** for the square root. Use 5 as your initial guess. Use **for loop**.

[20 marks.]

2. Ask the user for a date in in 2019 mmdd format. For example: February 8 will be represented as 0208. Once the user enters a date and presses enter, ask the user if she wishes to enter more date. If she types 'Y', then take one more date from her. If she types 'N', print the earliest and the latest of the dates that she has entered, in words (see sample output below).

Sample input/output:

```
Enter a date: 0105
Enter more dates? Y
Enter a date: 1226
Enter more dates? Y
Enter a date: 0819
Enter more dates? N
```

Earliest: January 5
Latest: December 26

[20 marks.]

3. Consider the following sequence of integers in which the first two terms are 1, and for $n > 2$, the n -th term $F(n)$ is given by the following recurrence:

$$F(n) = F(n - 1) + F(n - 2)$$

Take an integer n as input through the keyboard, and print the first n numbers of this sequence, separated by comma's.

Sample input and output:

Enter n: 8

1,1,2,3,5,8,13,21

[20 marks.]