Assignment #01

Due Date: 25 October 17, 2019

A note of warning: Start work on assignments as soon as they are given. Do not underestimate the demanding nature of this course. Expect the system to crash the night before your program is due. Aim to have it done the day before.

Submit the assignment on **slate.** Do not email me assignments after due date. It will not be accepted in any case. Students are required to submit actual content written in MS word or Pdf. Hand written/ Scanned assignments will not be accepted.

Note: Name of the file should start with your Roll number followed by your Name and at the end assignment number (**p190001NameAssign01**)

1. Write a program to ask a user to enter the date of birth and on the basis of input it display astrological sign associate with it.

♈	Aries, head......**ARI**	*Mar. 21–Apr. 20*
♉	Taurus, neck.....**TAU**	*Apr. 21–May 20*
♊	Gemini, arms ... **GEM**	*May 21–June 20*
♋	Cancer, breast....**CAN**	*June 21–July 22*
♌	Leo, heart......**LEO**	*July 23–Aug. 22*
♍	Virgo, belly .....**VIR**	*Aug. 23–Sept. 22*
♎	Libra, reins......**LIB**	*Sept. 23–Oct. 22*
♏	Scorpio, secrets...**SCO**	*Oct. 23–Nov. 22*
♐	Sagittarius, thighs .**SAG**	*Nov. 23–Dec. 21*
♑	Capricorn, knees .**CAP**	*Dec. 22–Jan. 19*
♒	Aquarius, legs .. **AQU**	*Jan. 20–Feb. 19*
♓	Pisces, feet......**PSC**	*Feb. 20–Mar. 20*

Expected Output:

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Input birthday: 15
Input month of birth (e.g. march, july etc): may
Your Astrological sign is : Taurus
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2. Input 10 numbers from the user and find:

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   1. Mean
   2. Median
   3. Mode
   4. Standard deviation
   5. Variance
   ```

3. Write a C program to read roll no, name and marks of three subjects and calculate the total, percentage and division.

   Test Data :
   Input the Roll Number of the student :784
   Input the Name of the Student :James
   Input the marks of Physics, Chemistry and Computer Application : 70 80 90

   Expected Output :
   Roll No : 784
   Name of Student : James
   Marks in Physics : 70
   Marks in Chemistry : 80
   Marks in Computer Application : 90
   Total Marks = 240
   Percentage = 80.00
   Division = First

4. Write a C++ program to accept a coordinate point in a XY coordinate system and determine in which quadrant the coordinate point lies.

5. Write a C++ program that ask the user to enter the age of a candidate and determine whether it is eligible for casting his/her own vote (age 20 or above is eligible)

6. Write a program to convert the time from 24-hour notation to 12-hour notation and vice versa. Your program must be menu driven, giving the user the choice of converting the time between the two notations. Furthermore, your program must contain at least the following option: to convert the time from 24-hour notation to 12-hour notation, to convert the time from 12-hour notation to 24-hour notation and display the results

accordingly. Ask the user until user press no or n (For 12-hour time notation, your program must display AM or PM.)

7. The cost to become a member of a fitness center is as follows: (a) Senior citizens discount is 30%, (b) If membership is bought and paid for 12 or more months, the discount is 15%, (c) If more than five personal training sessions are bought and paid for, the discount on each session is 20%. Write a program that determines the cost of a new membership. Your program must displays the general information about the fitness center and its charges; ask all of the necessary information from the user to determine the membership cost; and determine the membership cost