

First year First Semester Course (M. Tech. [CS]) [2021-23]:
Introduction to Programming
Assignment-2

Deadline: 16-Jan-2022

Problem-1:

[Marks=10]

Write a program in C++ to show type conversion from string of numeric characters to integer, without using the built-in `atoi()` function. For example, if the string object S1 is "2021", it should be converted to 2021 as integer if we write **int i=S1;**

Problem-2:

[Marks=20]

Define an abstract class named **Shape** having the following members:

- i) *height* as protected data member,
- ii) *width* as protected data member,
- iii) two public member functions for setting the height and width, respectively,
- iv) *computeArea()* as a pure virtual function

Derive two other classes, namely **Rectangle** and **Triangle**, from the base class Shape and define the *computeArea()* function for these. Now apply the concept of runtime polymorphism while computing the area for Rectangle and Triangle objects, named R and T, respectively.

Problem-3:

[Marks=20]

Write a C++ program for developing **matrix** class which can handle integer matrices of different dimensions. Now overload the operator +, -, and ==, such that if M1 and M2 are the objects of the class matrix, then M1+M2, M1-M2, M1==M2 behaves as addition, multiplication, and comparison of the two matrices.

Submission Process:-

- At the beginning of any submitted program file, please write:
/*-----
Name:
Roll number:
Date:
Program description:
-----*/
- Please send the .cpp files as the attachment to your mail to pdsmttechcs2021@gmail.com. The subject of the mail should be as follows: "Assignment-2: Your Name, Roll No."