## Objectives

After performing this lab, students shall be able to:

* Class declaration
* Data members and member functions
* Setter and getter functions
* Default and parameterized constructors

**TASK 1:**

Define a class student with the following specifications:

**Data Members:**

* Name
* Eng, Math, Science
* Total

**Public Members:**

* ***Take\_data( )*** - A function to accept values for Ali, Ahmed, eng, science and invoke

***ctotal( )*** to calculate total.

* ***Show\_data( )*** - A function to display all the data members on the screen.
* ***ctotal( )*** - A function to calculate Eng + Math + Science with float return type.

**TASK 2:**

A phone number, such as (212) 767-8900, can be thought of as having three parts: The Area code (212), the exchange (767), and the number (8900). Write a program that uses a ***CLASS*** to store these three parts of a phone number separately. Call the class Phone. Create two class variables of type phone. Initialize one, and have the user Input a number for the other one. Then display both numbers. The interchange might Look like this:

**For Example:**

|  |
| --- |
| **INPUT:**  Enter your area code, exchange, and number: 415 555 1212  **OUTPUT:**  My number is (212) 767-8900  Your number is (415) 555-1212 |

**TASK 3:**

**Exercise 1:**

* Create a class Date having following private data members:

Int Day

Int Month

Int Year

* Create an object of Date “date1” and run your program

**Exercise 2** [Default Constructor]:

* Write a default Constructor of Date that initializes the object to 1st January 1926 and prints “Default Constructor Called” in start.
* Now run your program and test what does date1 prints?

**Exercise 3** [Print Function]:

* Implement a function Print in Date class which prints a date in following format: dd/mm/yyyy (e.g. 1/1/1926 for date1)
* Print object date1 in your main function and run the program.
* What does it print and how can we initialize the data of date1 at the time of creation?

**Exercise 4** [Input Function]:

* Write a function Input in your Date class that takes input from user to populate a Date object.
* Call “date1.Input()” and “date1.Print()” in your driver program and test it.

**Exercise 5** [Setters]:

* Create an object xmasDay using default constructor.
* Print xmasDay and see what it prints.
* Write Setters i.e. SetDay, SetMonth and SetYear in your class.
* Now set xmasDay to 25/12/2020 using Setters in main.

**Exercise 6** [Getters]:

* Write Getters i.e. GetDay, GetMonth and GetYear in your date class.

Now print xmasDay using Getters in your Driver program.

**TASK 4:**

Consider the definition of the following class:

class Sample{

private:

int x;

double y;

public:

Sample( ); //Constructor 1

Sample(int); //Constructor 2

Sample(int , int);//Constructor 3

Sample(int, double); //Constructor 4

};

1. Write the definition of constructor 1 so that the private data members are initialized to 0.
2. Write the definition of constructor 2 so that the private data member x is initialized according to the value of the parameter, and the private data member y is initialized to 0.
3. Write the definition of constructor 3 and 4 so that the private data members are initialized to according to the values of parameters.