**MSc-ISem : C#.NET Lab Programs List2025**

**Write C# program**

1. To input a list of numbers using command line parameters sort in ascending order using bubble sort & search for a number using binary search.
2. To transpose a matrix of order N\*M and check whether it is symmetric or not.
3. To implement a Stack and to perform Push and Pop operations.
4. To implement the following operations on a Queue
   * 1. Add an Element
     2. Delete an Element
     3. Display the contents of the queue
5. To implement the following on a Singly Linked list
6. Create a List
7. Add a Node to the Front of a list
8. Add a Node to the Back of a List
9. Delete a specified Node
10. Display a list
11. To

i) Create class MyUtils which has static methods to calculate the areas of a triangle, square and circle (area function overloaded), also to find the maximum and minimum of 2 numbers. To Store the pai value have a static readonly variable and set the value through static constructor.

ii) Use these static functions in an executable class.

(Program to demonstrate Static constructors, static methods, read only fields)

1. To handle both system and custom exceptions using ‘try’ and ‘catch’.
2. To demonstrate Indexer overloading.
3. To create
   1. interface Book with methods getBook(), calculate(), display(), discount().
   2. interface Cassette with methods getCassette(), calculate(), display(), commission().
   3. class Media where you implement the two interfaces and has data elements itno, title, author, singer, nopages, duration and price. In getBook() accept book details. In getCassette() accept cassette details. In calculate of books, increment the price by 5% of the price. In calculate of cassette increment the price by 4%. In displayBook() display book details. In displayCassette() display cassette details. In discount() reduce the price by 2%. In commission() return 3% of the price.
   4. In an executable class, in main(), display menu

<1>Sell Book

<2>Sell Cassette

Accept choice. Depending on the choice call appropriate functions defined in Test class and pass an object of Media type. In the methods receive the Media object into the appropriate interface reference variable and call the object’s methods.

1. Develop a windows application to implement a basic calculator.
2. Develop a windows application to implement a Login form.
3. Play 2 players game Tic Tac Toe.
4. Overload +, and - to perform addition and subtraction of 2 matrices and also overload unary operators ++ and -- to increment and decrement all the values of a matrix by 1.
5. Illustrate shallow copy and deepcopy .
6. To demonstrate different ways of passing parameter to a method.
7. Implement Publisher/Subscriber pattern using events and delegates.
8. Demonstrate implicit and explicit custom type conversions, (Conversion between METER and KILOMETER class types).
9. ) Create class Student which has private fields rollno, name, class, m1, m2, m3, grade, named properties to all the fields(for grade have read only property) and a method to calculate the grade (if average is >=35 and <60 ‘C’, >=60 and <80 ‘B’, >80 ‘A’ , else ‘F’).

ii) In an executable class create array of students depending upon the number of students. Read the information of all the students, calculate the grade and display all the details.

(Program to demonstrate named property)

1. Program to find the second largest and second smallest in one-dimensional array.
2. Program To Enter 3\*3 Matrix And To Find The Sum Of Each Row
3. To implement a C# application that performs its payrollcalculations polymorphic way.

a. Design the class Diagram.

b. Implement the code to fulfil the requirement.

c. Calculation must be done in polymorphic way usingthe below given information

A company pays its employees weekly. Theemployees are of four types:

1. Salaried employees are paid a fixed weekly salaryregardless of the number of hours worked

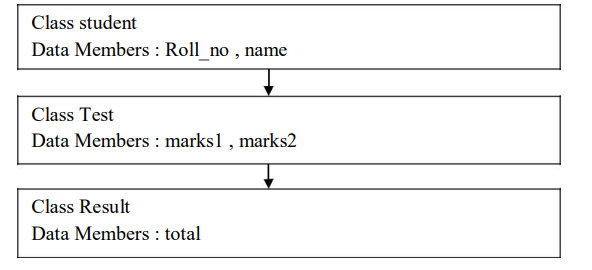
2. Hourly employees are paid by the hour and receiveovertime pay for all hours worked more than 40 hours

3. Commission employees are paid a percentage of theirsales

4. Salaried-Commission employees receive a base salaryplus a percentage of their sales.

For the current pay period, the company has decided toreward salariedcommission employees by adding 10% totheir base salaries.

**22.** Write a program to implement multilevel inheritance from following figure. Accept and display data for one student.



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