UNIT -2 – Lab Questions

1. Create a class named 'Box' with data members such as length, breadth and height. Get the values of length, breadth and height from the user and also calculate the volume of the box which is to be generated in the proper format using constructors.
2. Create a C++ program to construct the circle by getting two points such as x and y using parameterised constructor by getting the values in parameters. Also, how to access these points to display the values in the console mode.
3. Create a C++ program to construct the student database using copy constructor. Get the input such as  name, roll number and fees payment details. All necessary and additional details can also be get in the input format internally.
4. Consider a scenario where you are designing a software system for a library management

application. The system has two main entities: Book and LibraryMember. Each Book has

attributes such as ISBN, title, and author, while each LibraryMember has attributes like

member ID, name, and contact details. Assume that both entities need to be initialized

with different sets of information. Additionally, there is a requirement to manage dynamic memory for storing book titles. Design the class structures for Book and LibraryMember considering constructor overloading and destructor. Implement the necessary constructors to initialize the objects, ensuring dynamic memory management for book titles.

1. Write a C++ program to design a class 'Complex' with data members for real and

imaginary part. Provide default and parameterized constructors. Write a program

to perform arithmetic operations of two complex numbers using operator overloading(Addition, subtraction, multiplication and division) using member functions.

1. Elavenil is the working in Survey of India, The National Survey and Mapping Organization of the country under the Department of Science & Technology. Now Elavenil has been assigned the task of Collecting the Area and Density Information of all the states of India from the local authorities of the respective states and to consolidate in a common portal of Government of INDIA. Since the task assigned to her is highly complicated in nature she is seeking your help. Can you help her? Use the Concept of Constructor Overloading to complete the task.
2. Provide an example where a destructor is used to release dynamically allocated memory.
3. Sequence diagram exercise: Poker use case, Start New Game Round The scenario begins when the player chooses to start a new round in the UI. The UI asks whether any new players want to join the round; if so, the new players are added using the UI. All players' hands are emptied into the deck, which is then shuffled. The player left of the dealer supplies an ante bet of the proper amount. Next each player is dealt a hand of two cards from the deck in a round-robin fashion; one card to each player, then the second card. If the player left of the dealer doesn't have enough money to ante, he/she is removed from the game, and the next player supplies the ante. If that player also cannot afford the ante, this cycle continues until such a player is found or all players are removed.