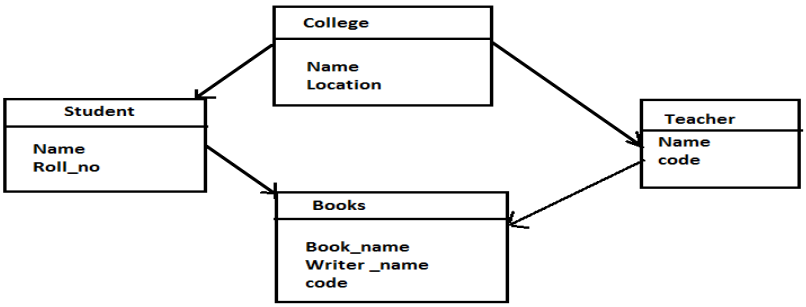
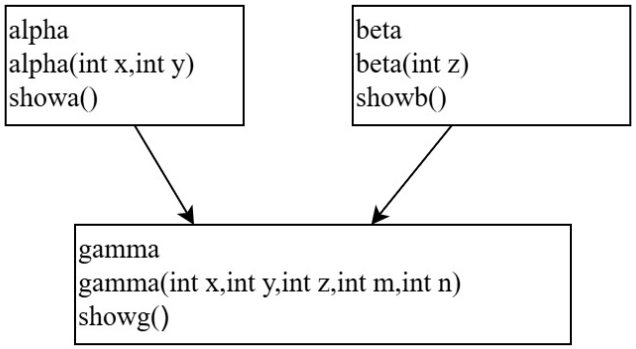
C++ Lab Exam Questions

1. Create two classes named Vehicle1 and Vehicle2, each having a private data member named price. Add a member function setPrice() in each class to assign a value of price. Also, define a friend function max() that has access to both classes. The max() function should compare the price values and display the maximum price.
2. Write a program to swap the values of two different classes using friend function.
3. Write a program to find sum of two complex number using friend class.
4. Write a program to illustrate the concept of dynamic constructor.
5. Using class write a program that receives inputs principle amount, time and rate. Keeping rate 8% as the default argument, calculate simple interest for three customers.
6. Write a program to input n numbers and find their sum using dynamic memory allocation.
7. Write a program to illustrate the use of static member function.
8. Create a class time with data members hours, minutes and seconds. Now perform the addition of two times object by passing object as an function arguments. Use constructor to initialize the object of time class.
9. Write a program to illustrate the concept of virtual base class/multipath inheritance/diamond problem.
10. Write a program to illustrate the concept of composition.
11. Consider the class network of the following figure



The **Books** class derives information from both the **Student** and **Teacher** classes, which in turn derive information from the **College** class. Define all four classes with at least one parameterized constructor and a **void display()** method in each class. In the **main()** function, create an object of the **Books** class, initialize all data members, and display them.

12. Write a complete program based on the provided figure. Note that alpha, beta and gamma are the class names and showa( ) ,showb( ) and showg( ) are the functions that display the data members of their respective classes.



13. Write a program that illustrate the concept of runtime polymorphism.
14. Write a program to overload unary minus(-) operator.
15. Write a complete program to convert the polar coordinates into rectangular coordinates using suitable type conversion method.
16. Write a complete program to convert the rectangular coordinates into polar coordinates using suitable type conversion method.
17. Write a program to read height of person in meter and convert into feet and inches using suitable type conversion method. [Hint: 1 feet=12 inches and 1 meter =3.28084 feet]
18. Write a program that illustrates the concept of exception handling.
19. Write a program to illustrates the multiple catches/Handling Multiple Exceptions.
20. Create a function template to find sum and product of two integers and two float values.
21. Create a function template to swap two integers, two floating point data and two characters.
22. Write a program that prompts the user to enter their name and age. Write the entered data into a file named “userinfo.txt”, read details from “userinfo.txt” and display the data on console
23. Write a C++ program to illustrate reading and writing into multiple files.
24. Create a class named Employee with data members: emp_id, name, position and salary. Now, input the records of n employees and store them in a file named “employee.dat”. After writing the data to the file, read the records from the file and display the information of those employees whose salary is greater than 25,000.