1. Create a Company class with attributes called no_of_employee, no_of_dept, employee_id, employee_name and a function set_value() to initialize the attributes. Create another class HR with attributes, address, salary, contact and a function set_value() to set the values. Now create an Employee class which inherits Company class and HR class. Now call the functions of the parent class with the child's object.
2. Create a class named Shape with a function that prints "This is a shape". Create another class named Polygon inheriting the Shape class with the same function that prints "Polygon is a shape". Create two other classes named Rectangle and Triangle having the same function which prints "Rectangle is a polygon" and "Triangle is a polygon" respectively. Again, make another class named Square having the same function which prints "Square is a rectangle". Now, try calling the function by the object of each of these classes.
3. We want to calculate the total marks of each student of a class in Physics,Chemistry and Mathematics and the average marks of the class. The number of students in the class are entered by the user. Create a class named Marks with data members for roll number, name and marks. Create three other classes inheriting the Marks class, namely Physics, Chemistry and Mathematics, which are used to define marks in individual subjects of each student. Roll number of each student will be generated automatically. Create some more questions like this.
4. Create a class named Library with attributes such as lib_name and location. Add a function set_library() to initialize the attributes. Derive a class Section that inherits the Library class, with attributes section_name and section_code. Add a function set_section() to initialize its attributes. Further, derive another class Book from the Section class, with attributes book_name, author, and isbn. Add a function display_info() to display all details about a book. Implement the concept of multilevel inheritance and display the attributes using the most derived class's object.
5. Create a class Department with attributes dept_name and dept_code. Add a function set_dept() to initialize the attributes. Create a separate class Professor with attributes prof_name and prof_id. Add a function assign_department() to assign a department to a professor. Derive a class HOD (Head of Department) from Professor, which includes additional attributes hod_start_date and hod_end_date. Implement the functionality to display all details.