Practice 17 [Inheritance]

1. Write an Employee class that keeps data attributes for the following pieces of information:
   - Employee name
   - Employee number

Next, write a class named ProductionWorker that is a subclass of the Employee class. The ProductionWorker class should keep data attributes for the following information:

- Shift number (an integer, such as 1, 2, or 3)
- Hourly pay rate

The workday is divided into two shifts: day and night. The shift attribute will hold an integer value representing the shift that the employee works. The day shift is shift 1 and the night shift is shift 2. Write the appropriate accessor and mutator methods for each class. Once you have written the classes, write a program that creates an object of the ProductionWorker class and prompts the user to enter data for each of the object's data attributes. Store the data in the object, then use the object's accessor methods to retrieve it and display it on the screen.

2. Create a base class named Rectangle that includes data members for the length and width of a Rectangle, as well as functions to assign and display those values. Derive a class named Block that contains an additional data member to store height, and contains functions to assign and display the height. Write a *main()* function that demonstrates the classes by instantiating and displaying the values for both a Rectangle and a Block.

3. Create a base class named Book. Data fields include title and author; functions include those that can set and display the fields. Derive two classes from the Book class: Fiction, which also contains a numeric grade reading level, and NonFiction, which contains a variable to hold the number of pages. The functions that set and display data field values for the subclasses should call the appropriate parent class functions to set and display the common fields, and include specific code pertaining to the new subclass fields. Write a *main()* function that demonstrates the use of the classes and their functions.

4. A CollegeCourse class includes fields representing department, course number, credit hours, and tuition. Its child, LabCourse, includes one more field that holds a lab fee charged in addition to the tuition. Create appropriate functions for these classes, and write a *main()* function that instantiates and uses objects of each class.