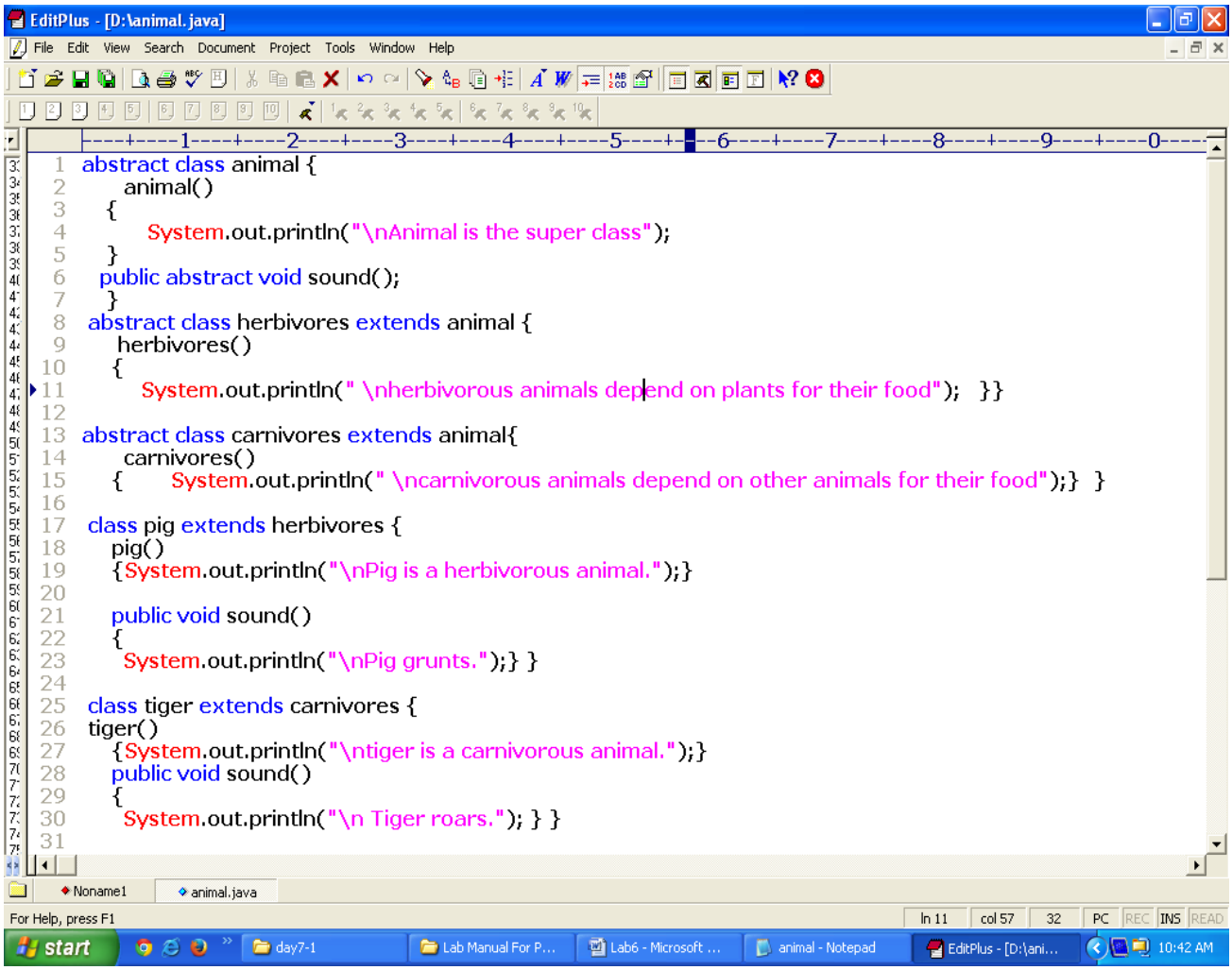
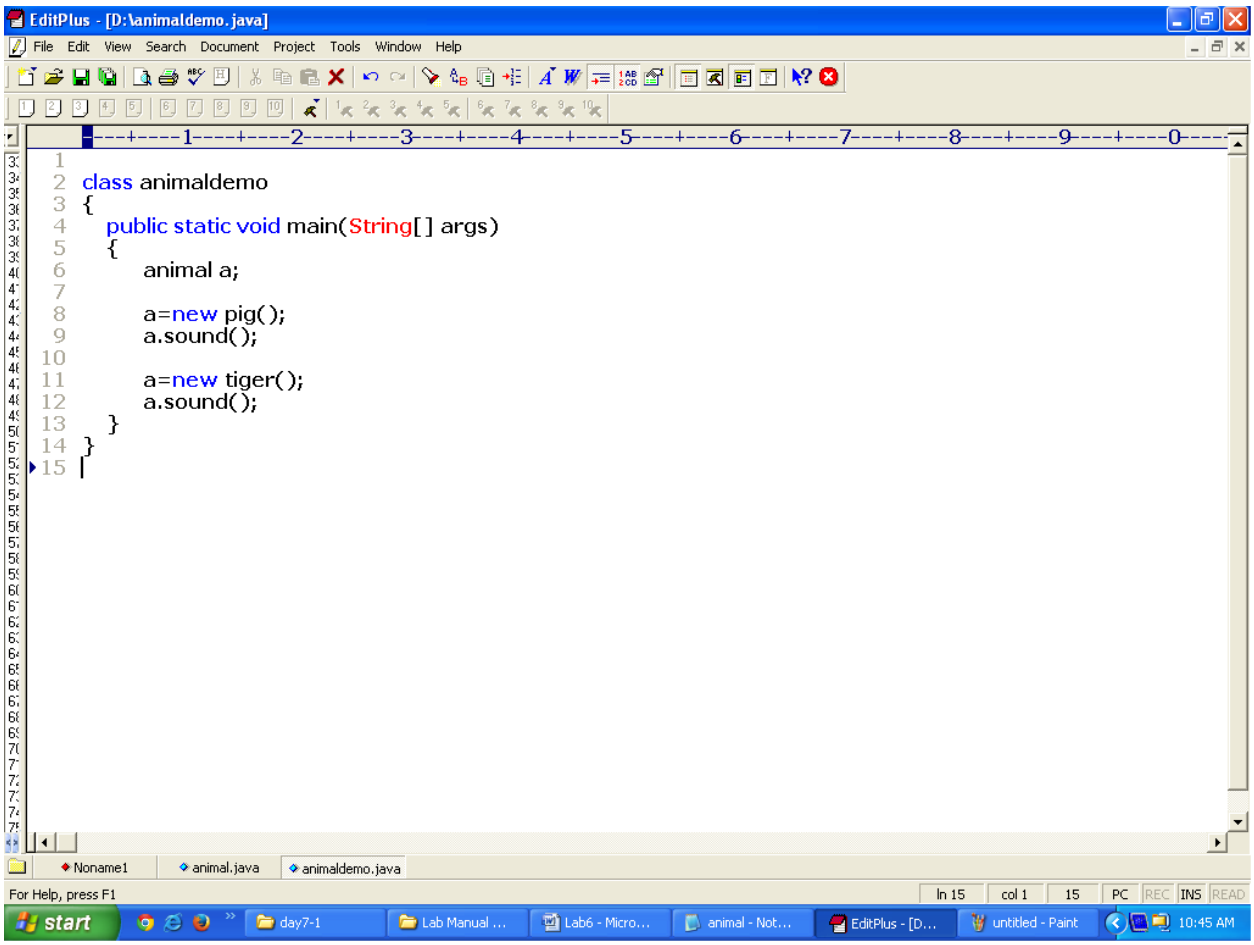
Lab-6 Assignments

Introducing Abstract class

Demo for Abstract class



Save as animal.java



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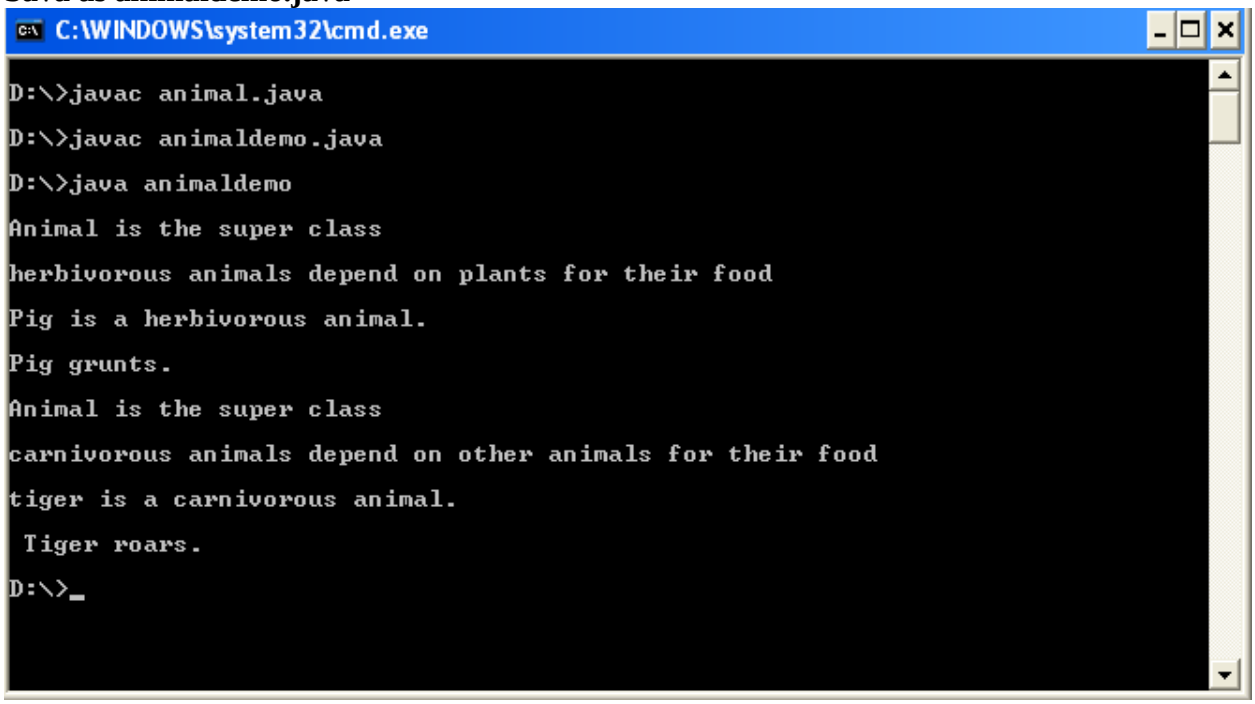


Assignments To Solve

1. Create an abstract class Instrument which is having the abstract function play.
   Create three more sub classes from Instrument which is Piano, Flute, Guitar.
   Override the play method inside all three classes printing a message .
   “Piano is playing tan tan tan tan ” for Piano class
   “Flute is playing toot toot toot toot” for Flute class
   “Guitar is playing tin tin tin ” for Guitar class

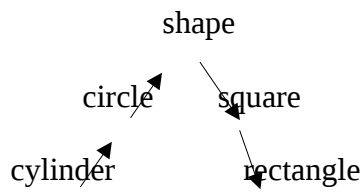
You must not allow the user to declare an object of Instrument class.
Create an array of 10 Instruments.
Assign different type of instrument to Instrument reference.
Check for the polymorphic behavior of play method.
Use the instanceof operator to print that which object stored at which index of instrument array.

2. Create a class Medicine to represent a drug manufactured by a pharmaceutical company. Provide a function displayLabel() in this class to print Name and address of the company.

   Derive Tablet, Syrup and Ointment classes from the Medicine class. Override the displayLabel() function in each of these classes to print additional information suitable to the type of medicine. For example, in case of tablets, it could be “store in a cool dry place”, in case of ointments it could be “for external use only” etc.
   Create a class TestMedicine . Write main function to do the following:
   Declare an array of Medicine references of size 10
   Create a medicine object of the type as decided by a randomly generated integer in the range 1 to 3.
   Refer Java API Documentation to find out random generation feature.
   Check the polymorphic behavior of the displayLabel() method.

3. Create an abstract class shape with abstract method
   void area();

   create 4 more classes circle, cylinder, square and rectangle



   Override the area() in all the classes
   Create an array of references of type shape in TestShape class and print the area of different types of shapes.