Class and objects

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Hands-on Assignment** | **Topics Covered** | **Status** |
| 1 | Create a class Box that uses a parameterized constructor to initialize the dimensions of a box.The dimensions of the Box are width, height, depth. The class should have a method that can return the volume of the box. Create an object of the Box class and test the functionalities.  **package** A;  **class** Box {  **double** w=0,h=0,d=0;  Box(**double** width,**double** height,**double** depth){  **this**.w=width;  **this**.h=height;  **this**.d=depth;  }  **public** **double** show()  {  **return** w\*h\*d;  }  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  Box ob=**new** Box(2.8,3.7,4.7);  **double** k=ob.show();  System.***out***.println(k+" volume of the Box");  }  } | Classes and Objects, Constructor |  |
| 2 | Create a new class called Calculator with the following methods:  1. A static method called powerInt(int num1,int num2)  This method should return num1 to the power num2.  2. A static method called powerDouble(double num1,int num2).  This method should return num1 to the power num2.  3. Invoke both the methods and test the functionalities.  Hint: Use Math.pow(double,double) to calculate the power.  **package** A;  **class** Calculator {  **static** **double** powerInt(**int** num1,**int** num2)  {  **return** Math.*pow*(num2, num1);  }  **static** **double** powerDOuble(**double** num1,**double** num2)  {  **return** Math.*pow*(num2, num1);  }  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  Calculator ob=**new** Calculator();  **double** k=ob.*powerInt*(1, 2);  System.***out***.println(k);  **double** l=ob.*powerDOuble*(3.2, 2.4);  System.***out***.println(l);  }  } | Classes and Objects, Constructor, static |  |
| 3 | Design a class that can be used by a health care professional to keep track of a patient’s vital statistics. The following are the details.  Name of the class - Patient  Member Variables - patientName(String),height(double),width(double)  Member Function - double computeBMI()  The above method should compute the BMI and return the result. The formula for computation of BMI is weight (in kg) ÷ height\*height(in metres).  Create an object of the Patient class and check the results.  **package** A;  **import** java.util.\*;  **class** Patient {  Scanner sc=**new** Scanner(System.***in***);  **double** height =sc.nextDouble();  **double** weight =sc.nextDouble();  String patientname=sc.nextLine();  **public** **double** computeBMI()  {  **return** weight/(height\*height);  }  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  Patient ob=**new** Patient();  **double** k=ob.computeBMI();  System.***out***.println((ob.patientname)+" BMI is "+k);  }  } | Classes and Objects, Constructor, static |  |