**PQ\_Classinherit**

1. Create a class Box that uses a parameterized method to initialize the dimensions of a box. (dimensions are width, height, depth of double type). The class should have a method that can return volume. Obtain an object and print the corresponding volume in main() function.

(Class Box 1).

import java.util.\*;

class Box

{

double width;

double height;

double depth;

Box(){

Scanner sc=new Scanner(System.in);

System.out.print("Enter the width, height and depth of the box: ");

this.setWidth(sc.nextDouble());

this.setHeight(sc.nextDouble());

this.setDepth(sc.nextDouble());

}

void setWidth(double width){

this.width=width;

}

void setHeight(double height){

this.height=height;

}

void setDepth(double depth){

this.depth=depth;

}

double volume(){

return (width\*height\*depth);

}

}

class Test{

public static void main(String[] args) {

Box b=new Box();

System.out.print("The volume of the given box = " + b.volume());

}

}

2. Create a new class called Calculator which contains the following:

A static method called powerInt(int num1,int num2) that accepts two integers and returns num1 to the power of num2 (num1 power num2).

A static method called powerDouble(double num1,int num2) that accepts one double and one integer and returns num1 to the power of num2 (num1 power num2).

Call your method from another class without instantiating the class (i.e. call it like Calculator.powerInt(12,10) since your methods are defined to be static)

Hint: Use Math.pow(double,double) to calculate the power.

(Class Calculator 1)

import java.util.\*;

class Calculator

{

static int powerInt(int num1, int num2){

return (int)(Math.pow(num1, num2));

}

static double powerDouble(double num1, double num2){

return Math.pow(num1, num2);

}

}

class Test{

public static void main(String[] args) {

System.out.println("2 raised to 3 = "+Calculator.powerInt(2,3));

System.out.println("2.5 raised to 3.5 = "+Calculator.powerDouble(2.5,3.5));

}

}

3.Design a class that can be used by a health care professional to keep track of a patient’s vital statistics. Here’s what the class should do:

Construct a class called Patient. Store a String name for the patient. Store weight and height for patient as doubles. Write a method called BMI which returns the patient’s BMI as a double.

BMI can be calculated as BMI = ( Weight in Pounds / ( Height in inches x Height in inches ) ) x 703

Next, construct a class called 'Patients' and create a main method. Create a Patient object and assign some height and weight to that object. Display the BMI of that patient.

(Class Patient 1)

import java.util.\*;

class Vital

{

private String name;

private double weight;

private double height;

Vital(){

Scanner sc=new Scanner(System.in);

System.out.print("Enter the name of the patient: ");

this.setName (sc.nextLine());

System.out.print("Enter the weight (in kg) and height (in m): ");

this.setWeight (sc.nextDouble());

this.setHeight (sc.nextDouble());

}

void setName(String name){

this.name=name;

}

void setHeight(double height){

this.height=height;

}

void setWeight(double weight){

this.weight=weight;

}

String getName(){

return this.name;

}

double getBmi(){

return (this.weight/(this.height\*this.height));

}

}

class Patient{

public static void main(String[] args) {

Vital p1=new Vital();

System.out.print("\nName: "+p1.getName()+"\t BMI = "+p1.getBmi());

}

}

4. /\*Create a class named ‘Animal’ which includes methods like eat() and sleep().

Create a child class of Animal named ‘Bird’ and override the parent class methods.

Add a new method named fly(). Create an instance of Animal class and invoke the eat and sleep methods using this object.

Create an instance of Bird class and invoke the eat, sleep and fly methods using this object.\*/

(Class Animal 1)

import java.util.\*;

class Animal

{

void eat(){

System.out.println("Every animal eats");

}

void sleep(){

System.out.println("Every animal sleeps");

}

}

class Bird extends Animal{

void fly(){

System.out.println("Every bird can fly");

}

void eat(){

System.out.println("Every bird eats");

}

void sleep(){

System.out.println("Every bird sleeps");

}

}

class Test{

public static void main(String args[]){

Animal a1=new Animal();

a1.eat();

a1.sleep();

Bird b1=new Bird();

b1.eat();

b1.sleep();

b1.fly();

}

}