**BÀI THỰC HÀNH TUẦN 5**

**Họ Tên : NGUYỄN CÔNG LUÂN**

**Lớp:12\_ĐH\_CNTT2**

**MSSV:1250080108**

**B1:**

import java.util.\*;

abstract class nv {

    private String manv;

    private String tennv;

    private String td;

    private double lcb;

    public nv() {

        manv = "";

        tennv = "";

        td = "";

        lcb = 0;

    }

    public void nhap() {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap ma nv: ");

        manv = sc.nextLine();

        System.out.print("nhap ten nv: ");

        tennv = sc.nextLine();

        System.out.print("nhap td: ");

        td = sc.nextLine();

        System.out.print("nhap lcb: ");

        lcb = sc.nextDouble();

    }

    public void xuat() {

        System.out.println("ma: " + manv + ", ten: " + tennv + ", td: " + td + ", lcb: " + lcb);

    }

    public double getlcb() {

        return lcb;

    }

    public abstract double tinhluong();

}

class ql extends nv {

    private String cm;

    private double pccv;

    public void nhap() {

        super.nhap();

        Scanner sc = new Scanner(System.in);

        sc.nextLine(); // chống trôi lệnh

        System.out.print("nhap cm: ");

        cm = sc.nextLine();

        System.out.print("nhap pccv: ");

        pccv = sc.nextDouble();

    }

    public void xuat() {

        super.xuat();

        System.out.println("cm: " + cm + ", pccv: " + pccv);

    }

    public double tinhluong() {

        return getlcb() + pccv;

    }

}

class nc extends nv {

    private String cm;

    private double pcdh;

    public void nhap() {

        super.nhap();

        Scanner sc = new Scanner(System.in);

        sc.nextLine();

        System.out.print("nhap cm: ");

        cm = sc.nextLine();

        System.out.print("nhap pcdh: ");

        pcdh = sc.nextDouble();

    }

    public void xuat() {

        super.xuat();

        System.out.println("cm: " + cm + ", pcdh: " + pcdh);

    }

    public double tinhluong() {

        return getlcb() + pcdh;

    }

}

class pv extends nv {

    public void nhap() {

        super.nhap();

    }

    public void xuat() {

        super.xuat();

    }

    public double tinhluong() {

        return getlcb();

    }

}

public class B1 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        nv[] ds = new nv[3];

        System.out.println("nhap ql");

        ds[0] = new ql();

        ds[0].nhap();

        System.out.println("nhap nc");

        ds[1] = new nc();

        ds[1].nhap();

        System.out.println("nhap pv");

        ds[2] = new pv();

        ds[2].nhap();

        System.out.println("\n---thong tin nv---");

        for (int i = 0; i < ds.length; i++) {

            ds[i].xuat();

            System.out.println("luong: " + ds[i].tinhluong());

            System.out.println("----------------");

        }

    }

}

**B2:**

import java.util.\*;

interface hinh {

    float pi = 3.14f;

    void nhap();

    void xuat();

    float dientich();

}

class hinhvuong implements hinh {

    private float canh;

    public void nhap() {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap canh: ");

        canh = sc.nextFloat();

    }

    public void xuat() {

        System.out.println("hinh vuong, canh = " + canh);

    }

    public float dientich() {

        return canh \* canh;

    }

}

class hinhchunhat implements hinh {

    private float dai, rong;

    public void nhap() {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap dai: ");

        dai = sc.nextFloat();

        System.out.print("nhap rong: ");

        rong = sc.nextFloat();

    }

    public void xuat() {

        System.out.println("hinh chu nhat, dai = " + dai + ", rong = " + rong);

    }

    public float dientich() {

        return dai \* rong;

    }

}

class hinhtron implements hinh {

    private float bankinh;

    public void nhap() {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap ban kinh: ");

        bankinh = sc.nextFloat();

    }

    public void xuat() {

        System.out.println("hinh tron, ban kinh = " + bankinh);

    }

    public float dientich() {

        return pi \* bankinh \* bankinh;

    }

}

public class B2 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        hinh[] ds;

        int n;

        System.out.print("nhap so luong hinh: ");

        n = sc.nextInt();

        ds = new hinh[n];

        for (int i = 0; i < n; i++) {

            System.out.println("\nchon loai hinh cho vi tri " + (i + 1));

            System.out.println("1. hinh vuong");

            System.out.println("2. hinh chu nhat");

            System.out.println("3. hinh tron");

            System.out.print("lua chon: ");

            int chon = sc.nextInt();

            switch (chon) {

                case 1:

                    ds[i] = new hinhvuong();

                    break;

                case 2:

                    ds[i] = new hinhchunhat();

                    break;

                case 3:

                    ds[i] = new hinhtron();

                    break;

                default:

                    System.out.println("khong hop le, chon hinh vuong mac dinh");

                    ds[i] = new hinhvuong();

                    break;

            }

            ds[i].nhap();

        }

        System.out.println("\n=== thong tin va dien tich cac hinh ===");

        for (int i = 0; i < n; i++) {

            ds[i].xuat();

            System.out.println("dien tich: " + ds[i].dientich());

            System.out.println("------------------------");

        }

    }

}

**B3:**

class shape {

    protected String color;

    protected boolean filled;

    public shape() {

        color = "red";

        filled = true;

    }

    public shape(String color, boolean filled) {

        this.color = color;

        this.filled = filled;

    }

    public String getcolor() {

        return color;

    }

    public void setcolor(String color) {

        this.color = color;

    }

    public boolean isfilled() {

        return filled;

    }

    public void setfilled(boolean filled) {

        this.filled = filled;

    }

    public double getarea() {

        return 0;

    }

    public double getperimeter() {

        return 0;

    }

    public boolean equals(shape s) {

        return this.color.equals(s.color) && this.filled == s.filled;

    }

    public String tostring() {

        return "color=" + color + ", filled=" + filled;

    }

}

class circle extends shape {

    private double radius;

    public circle() {

        radius = 1.0;

    }

    public circle(double radius) {

        this.radius = radius;

    }

    public circle(double radius, String color, boolean filled) {

        super(color, filled);

        this.radius = radius;

    }

    public double getradius() {

        return radius;

    }

    public void setradius(double radius) {

        this.radius = radius;

    }

    public double getarea() {

        return 3.14 \* radius \* radius;

    }

    public double getperimeter() {

        return 2 \* 3.14 \* radius;

    }

    public boolean equals(circle c) {

        return this.radius == c.radius;

    }

    public String tostring() {

        return "circle[radius=" + radius + ", " + super.tostring() + "]";

    }

}

class rectangle extends shape {

    protected double width;

    protected double length;

    public rectangle() {

        width = 1.0;

        length = 1.0;

    }

    public rectangle(double width, double length) {

        this.width = width;

        this.length = length;

    }

    public rectangle(double width, double length, String color, boolean filled) {

        super(color, filled);

        this.width = width;

        this.length = length;

    }

    public double getwidth() {

        return width;

    }

    public void setwidth(double width) {

        this.width = width;

    }

    public double getlength() {

        return length;

    }

    public void setlength(double length) {

        this.length = length;

    }

    public double getarea() {

        return width \* length;

    }

    public double getperimeter() {

        return 2 \* (width + length);

    }

    public boolean equals(rectangle r) {

        return this.width == r.width && this.length == r.length;

    }

    public String tostring() {

        return "rectangle[width=" + width + ", length=" + length + ", " + super.tostring() + "]";

    }

}

class square extends rectangle {

    public square() {

        super(1.0, 1.0);

    }

    public square(double side) {

        super(side, side);

    }

    public square(double side, String color, boolean filled) {

        super(side, side, color, filled);

    }

    public double getside() {

        return width;

    }

    public void setside(double side) {

        width = side;

        length = side;

    }

    public void setwidth(double side) {

        setside(side);

    }

    public void setlength(double side) {

        setside(side);

    }

    public boolean equals(square s) {

        return this.getside() == s.getside();

    }

    public String tostring() {

        return "square[side=" + getside() + ", " + super.tostring() + "]";

    }

}

public class B3 {

    public static void main(String[] args) {

        square s1 = new square(5, "blue", true);

        square s2 = new square(5, "blue", true);

        System.out.println(s1.tostring());

        System.out.println("dien tich: " + s1.getarea());

        System.out.println("equals s2? " + s1.equals(s2));

    }

}

**B4:**

interface movable {

    void moveup();

    void movedown();

    void moveleft();

    void moveright();

}

class movablepoint implements movable {

    int x, y;

    int xspeed, yspeed;

    public movablepoint(int x, int y, int xspeed, int yspeed) {

        this.x = x;

        this.y = y;

        this.xspeed = xspeed;

        this.yspeed = yspeed;

    }

    public void moveup() {

        y += yspeed;

    }

    public void movedown() {

        y -= yspeed;

    }

    public void moveleft() {

        x -= xspeed;

    }

    public void moveright() {

        x += xspeed;

    }

    public String tostring() {

        return "movablepoint[x=" + x + ", y=" + y + ", xspeed=" + xspeed + ", yspeed=" + yspeed + "]";

    }

}

class movablecircle implements movable {

    int radius;

    movablepoint center;

    public movablecircle(int x, int y, int xspeed, int yspeed, int radius) {

        this.center = new movablepoint(x, y, xspeed, yspeed);

        this.radius = radius;

    }

    public void moveup() {

        center.moveup();

    }

    public void movedown() {

        center.movedown();

    }

    public void moveleft() {

        center.moveleft();

    }

    public void moveright() {

        center.moveright();

    }

    public String tostring() {

        return "movablecircle[radius=" + radius + ", center=" + center.tostring() + "]";

    }

}

public class B4 {

    public static void main(String[] args) {

        movablecircle c = new movablecircle(0, 0, 2, 3, 5);

        System.out.println("ban dau: " + c.tostring());

        c.moveup();

        c.moveleft();

        System.out.println("sau khi move up & left: " + c.tostring());

        c.moveright();

        c.movedown();

        System.out.println("sau khi move right & down: " + c.tostring());

    }

}

**B5:**

import java.util.\*;

class connguoi

{

    protected String hoten;

    protected int namsinh;

    public void nhap()

    {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap ho ten: ");

        hoten = sc.nextLine();

        System.out.print("nhap nam sinh: ");

        namsinh = sc.nextInt();

    }

    public void xuat()

    {

        System.out.println("ho ten: " + hoten + ", nam sinh: " + namsinh);

    }

}

class hocvien extends connguoi

{

    private float diem1, diem2, diem3;

    public void nhap()

    {

        super.nhap();

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap diem 1: ");

        diem1 = sc.nextFloat();

        System.out.print("nhap diem 2: ");

        diem2 = sc.nextFloat();

        System.out.print("nhap diem 3: ");

        diem3 = sc.nextFloat();

    }

    public void xuat()

    {

        super.xuat();

        System.out.println("diem 1: " + diem1 + ", diem 2: " + diem2 + ", diem 3: " + diem3);

    }

}

class phongkhoaban

{

    private String maphong, tenphong;

    public void nhap()

    {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap ma phong: ");

        maphong = sc.nextLine();

        System.out.print("nhap ten phong: ");

        tenphong = sc.nextLine();

    }

    public void xuat()

    {

        System.out.println("ma phong: " + maphong + ", ten phong: " + tenphong);

    }

}

class nhanvien extends connguoi

{

    private double luong;

    private String ngaylamviec;

    private phongkhoaban pbk;

    public void nhap()

    {

        super.nhap();

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap luong: ");

        luong = sc.nextDouble();

        sc.nextLine();

        System.out.print("nhap ngay lam viec: ");

        ngaylamviec = sc.nextLine();

        pbk = new phongkhoaban();

        pbk.nhap();

    }

    public void xuat()

    {

        super.xuat();

        System.out.println("luong: " + luong + ", ngay lam viec: " + ngaylamviec);

        pbk.xuat();

    }

}

public class B5

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.print("nhap so hoc vien: ");

        int sohocvien = sc.nextInt();

        hocvien[] dshv = new hocvien[sohocvien];

        for (int i = 0; i < sohocvien; i++) {

            System.out.println("\n nhap hoc vien thu " + (i + 1) );

            dshv[i] = new hocvien();

            dshv[i].nhap();

        }

        System.out.print("\nnhap so nhan vien: ");

        int sonhanvien = sc.nextInt();

        nhanvien[] dsnv = new nhanvien[sonhanvien];

        for (int i = 0; i < sonhanvien; i++)

        {

            System.out.println("\n nhap nhan vien thu " + (i + 1) );

            dsnv[i] = new nhanvien();

            dsnv[i].nhap();

        }

        System.out.println("\n danh sach hoc vien");

        for (int i = 0; i < sohocvien; i++) {

            System.out.println("\nHoc vien " + (i + 1) + ":");

            dshv[i].xuat();

        }

        System.out.println("\n danh sach nhan vien ");

        for (int i = 0; i < sonhanvien; i++) {

            System.out.println("\nNhan vien " + (i + 1) + ":");

            dsnv[i].xuat();

        }

    }

}