Main:

```
package com.torryharris.cancas;
import com.torryharris.circlepack.circle;
public class Main {

    public static void main(String[] args) {
   // write your code here
        circle circle1 = new circle();
        System.out.println(circle1);

        circle circle2 = new circle (4.5);
        System.out.println(circle2);

        circle circle3 = new circle("red");
        System.out.println(circle3);

        circle circle4 = new circle (5,"black");
        System.out.println(circle4);

    }
}
class:
```

```
package com.torryharris.circlepack;

public class circle {
    private double radius;
    private String colour;

    public circle(double radius, String colour) {
        this.radius = radius;
        this.colour = colour;
    }

    public circle() {
        this(3.5,"blue");
    }
    public circle(double radius){
        this(radius,"brown");
    }
    public circle(String colour)
    {
        this(6.5,colour);
    }

    @Override
    public String toString() {
        return "circle{" +
                "radius=" + radius +
                ", colour='" + colour + '\'' +
                '}';
```

```
    }
}
```

Output:

```
circle{radius=3.5, colour='blue'}

circle{radius=4.5, colour='brown'}

circle{radius=6.5, colour='red'}

circle{radius=5.0, colour='black'}
```

==========

Main:

```
package com.torryharris.mainpack;

public class Main {

    public static void main(String[] args) {
   // write your code here
        address addrs=new address(77,"mainstreet","bengaluru","karnataks",562157);
        person pers1=new person(1000,"varun",addrs);
        System.out.println(pers1);

    }
}
```

address class:

```
package com.torryharris.mainpack;

public class address {
    private int doorno;
    private String street;
    private String city;
    private String state;
    private int pincode;

    public address(int doorno, String street, String city, String state, int pincode) {
        this.doorno = doorno;
        this.street = street;
        this.city = city;
        this.state = state;
        this.pincode = pincode;
    }

    @Override
    public String toString() {
        return "address{" +
                "doorno=" + doorno +
                ", street='" + street + '\'' +
                ", city='" + city + '\'' +
                ", state='" + state + '\'' +
```

```
                ", pincode=" + pincode +
                '}';
    }
}
```

person class:

```
package com.torryharris.mainpack;

public class person {
    private int personid;
    private String personname;
    private address addrs;

    public person(int personid, String personname, address addrs) {
        this.personid = personid;
        this.personname = personname;
        this.addrs = addrs;
    }

    @Override
    public String toString() {
        return "person{" +
                "personid=" + personid +
                ", personname='" + personname + '\'' +
                ", addrs=" + addrs +
                '}';
    }
}
```

output:

```
person{personid=1000, personname='varun', addrs=address{doorno=77, street='mainstreet',
city='bengaluru', state='karnataks', pincode=562157}}
```

==========

Main:

```
package torryharris.stadium;
import com.torryharris.mainpack.player;
public class Main {
    public static void main(String[] args){
        player p1 = new player();
        int p1score = p1.play();
        int p1d1score = p1.getd1score();
        int p1d2score = p1.getd2score();

        System.out.println("p1 scored : "+p1score);
        System.out.println("p1d1 score : "+p1d1score+" "+"p1d2 score : "+p1d2score);
        player p2 = new player();
        int p2score = p2.play();
        int p2d1score = p2.getd1score();
        int p2d2score = p2.getd2score();
```

```
        System.out.println("p2 scored : "+p2score);
        System.out.println("p2d1 score : "+p2d1score+" "+"p2d2 score : "+p2d2score);

        if(p1score>p2score)
        {
            System.out.println("p1 won the game. ");
        }
        else
        {
            if(p1score==p2score)
            {
                System.out.println("game draw!");
            }
            else
            {
                System.out.println("p2 won the game. ");
            }
        }

    }
}
```

dice class:

```
package com.torryharris.mainpack;
import java.util.Random;
public class dice {
    private int fvalue;
    public int roll()
    {
        Random rand = new Random();
        fvalue = ((int)rand.nextInt(5)+1);
        return fvalue;
    }
    public int getfvalue()
    {
        return fvalue;
    }

}
```

player class:

```
package com.torryharris.mainpack;

public class player {
    dice d1;
    dice d2;

    public player(){
```

```
        d1 = new dice();
        d2 = new dice();
    }
    public int play()
    {
        return(d1.roll()+d2.roll());
    }
    public int getd1score()
    {
        return(d1.getfvalue());
    }
    public int getd2score()
    {
        return(d2.getfvalue());
    }
}
```

output:

```
p1 scored : 7

p1d1 score : 2 p1d2 score : 5

p2 scored : 4

p2d1 score : 2 p2d2 score : 2

p1 won the game.
```

==========

Main:

```
package com.torryharris.mainpack;
import com.torryharris.utility.average;
import com.torryharris.utility.summation;
import com.torryharris.utility.tax;

public class Main {

    public static void main(String[] args) {
   // write your code here
        /*summation sob = new summation();
        System.out.println(sob.add(10,20));
        System.out.println(sob.add(5,6.5F,3.11));
        System.out.println(sob.add("good","afternoon"));*/

        /*tax tab = new tax();
        System.out.println("tax calculated for consultant: "+tab.calc_tax(20000,'c'));
        System.out.println("tax calculated for employee: "+tab.calc_tax(20000));*/

        average avgob = new average();
        System.out.println(avgob.calc_avg(10,15));
        System.out.println(avgob.calc_avg(10,15,20,25));
```

```
        System.out.println(avgob.calc_avg(10.5,10,20,30));
        System.out.println(avgob.calc_avg(10,15521,15.5,20.5,20,5));



    }
}
```

average class:

```
package com.torryharris.utility;

public class average {
    public double calc_avg(int... numbers) {
        int sum = 0;
        for (int n : numbers) {
            sum += n;
        }
        return (sum / numbers.length);
    }

    public double calc_avg(double d, int... numbers) {
        double sum = d;
        for (int n : numbers) {
            sum += n;
        }
        return (sum / (numbers.length + 1));
    }

    public double calc_avg(int d, long l, double... numbers) {
        double sum = d + l;
        for (double x : numbers) {
            sum += x;
        }
        return (sum / (numbers.length + 2));
    }
}
```

tax class:

```
package com.torryharris.utility;

public class tax {
    public double calc_tax(long amt,char status)
    {
        return(amt*0.1);
    }
    public int calc_tax(long amt)
    {
        return((int)(amt*0.25));
    }
}
```

Summation class:

```
package com.torryharris.utility;

public class summation {
    public int add(int x,int y)
    {
        return(x+y);
    }
    public double add(int x,float y,double z)
    {
        return(x+y+z);
    }
    public String add(String str1,String str2)
    {
        return(str1+" "+str2);
    }
}
```

output:

```
12.0

17.0

17.625

2598.6666666666665
```

==========

Main:

```
package com.torryharris.mainpack;

import com.torryharris.spack.person;

public class Main {

    public static void main(String[] args) {
   // write your code here
        person p1 = new person(100,"varun");
        person p2 = new person(101,"suhas");
        System.out.println(p1);
        System.out.println(p2);
        System.out.println(person.getCount());
        System.out.println(person.count);
    }
}
```

Person class:

```
package com.torryharris.spack;

public class person {
    public static int count;
```

```
    private int pid;
    private String pname;

    static{
        count=0;
    }

    public person(int pid, String pname) {
        this.pid = pid;
        this.pname = pname;
        ++count;
    }

    @Override
    public String toString() {
        return "person{" +
                "pid=" + pid +
                ", pname=" + pname +
                '}';
    }

    public static int getCount() {
        return count;
    }
}
```

Output:

```
person{pid=100, pname=varun}

person{pid=101, pname=suhas}

2

2
```