

```

package ec.edu.espe.poo6382exam2.view;

import java.util.ArrayList;
import java.util.Arrays;
import ec.edu.espe.poo6382exam2.model.A;
import ec.edu.espe.poo6382exam2.model.B;
import ec.edu.espe.poo6382exam2.model.C;
import ec.edu.espe.poo6382exam2.model.D;
import ec.edu.espe.poo6382exam2.model.E;
import ec.edu.espe.poo6382exam2.model.F;
import ec.edu.espe.poo6382exam2.model.G;
import ec.edu.espe.poo6382exam2.model.H;
import ec.edu.espe.poo6382exam2.model.J;

/**
 *
 * @author Darian M. Martinez ESPE DCCO
 */
public class SystemManager {

    public static void main(String[] args) {
        // TODO code application logic here
        J j = new J();
        G g = new G();
        g.m(j);

        ArrayList<H> hs = new ArrayList<>();
        hs.add(g);
        B b = new B(hs);

        E e1 = new E();
        E e2 = new E();
        E e3 = new E();
        E e4 = new E();
        E e5 = new E();

        E[] es = new E[5];
        es[0]= e1;
        es[1]= e2;
        es[2]= e3;
        es[3]= e4;
        es[4]= e5;

        F f = new F();
        F f2 = new F();
        ArrayList<F> fs = new ArrayList<>();
        fs.add(f);
        fs.add(f2);

        D d = new D(es,fs);
    }
}

```

```

        ArrayList<E> listE = new ArrayList<>();
        listE.add(e1);
        listE.add(e2);
        listE.add(e3);

        C c = new C(listE);

        ArrayList<A> as = new ArrayList<>();
        as.add(b);
        as.add(c);
        as.add(d);

        System.out.println(Arrays.toString(as.toArray()));

    }

}

```

```

public class A {

    private ArrayList<A> as;

    public ArrayList<A> getAs() {
        return as;
    }

    public void setAs(ArrayList<A> as) {
        this.as = as;
    }

    @Override
    public String toString() {
        return "A{" + "as=" + as + '}';
    }

}

```

```

public class B extends A{

    private ArrayList<H> hs;

    public B(ArrayList<H> hs) {
        this.hs = hs;
        System.out.println("Create B");
    }

    public ArrayList<H> getHs() {
        return hs;
    }

}

```

```

    public void setHs(ArrayList<H> hs) {
        this.hs = hs;
    }

    @Override
    public String toString() {
        return "B{" + "hs=" + hs + super.toString();
    }
}

```

```

public class C extends A{

    private ArrayList<E> es;

    public C(ArrayList<E> es) {
        System.out.println("Create C");
        this.es = es;
    }

    public ArrayList<E> getEs() {
        return es;
    }

    public void setEs(ArrayList<E> es) {
        this.es = es;
    }

    @Override
    public String toString() {
        return "C{" + "es=" + es + super.toString();
    }
}

```

```

public class D extends A{

    private E[] es = new E[5];
    private ArrayList<F> fs ;

    public D(E[] es, ArrayList<F> fs) {
        System.out.println("Create D");
        this.fs = fs;
        this.es = es;
    }

    public E[] getEs() {
        return es;
    }
}

```

```

    public void setEs(E[] es) {
        this.es = es;
    }

    public ArrayList<F> getFs() {
        return fs;
    }

    public void setFs(ArrayList<F> fs) {
        this.fs = fs;
    }

    @Override
    public String toString() {
        return "D{" + "es=" + es + ", fs=" + fs + '}';
    }

}

```

**public class E {**

```

    public E() {
        System.out.println("New E");
    }

    @Override
    public String toString() {
        return "E objectc";
    }
}

```

**public class F {**

```

    public F() {
        System.out.println("New F");
    }

    @Override
    public String toString() {
        return "F Object";
    }

}

```

**public class G implements H{**

```

    public G() {
        System.out.println("New G");
    }
}

```

```

    }

    public void m(J j){
        System.out.println("Method m of G with J param");
    }

    @Override
    public String toString() {
        return "Object C implements H";
    }
}

```

```

public interface H {

}

```

```

public class J {

    public J() {
        System.out.println("New J");
    }
}

```

```

run:
New J
New G
Method m of G with J param
Create B
New E
New E
New E
New E
New E
New F
New F
Create D
Create C
[B[hs=[Object C implements H]A{as=null}, C[es=[E objectc, E objectc, E objectc]A{as=null}, D[es=[Lec.edu.espe.poo6382exam2.model.E;@15db9742, fs
BUILD SUCCESSFUL (total time: 0 seconds)

```