SOLUCIÓN 8

```java
1  package clases;
2
3  public interface IGestionEstructuras {
4
5      public boolean estaVacia();
6
7      public Persona primero();
8
9      public Persona extraer();
10
11     public void mostrar();
12
13     public boolean insertar(Persona persona);
14 }
15
```

```java
public class Cola implements IGestionEstructuras {
    private Persona [] personas;
    private int indice=0;
    public Cola(int elementos) {
        personas = new Persona[elementos];
    }
    @Override
    public boolean insertar(Persona persona) {
        if (indice==personas.length)//llena
            return false;
        else {
            personas[indice++]=persona;
            return true;
        }
    }
    @Override
    public boolean estaVacia() {
        return (indice==0);
    }
    @Override
    public void mostrar() {
        for (Persona persona : personas) {
            if (persona!=null)
                System.out.println(persona);
        }
```

```java
        @Override
        public Persona primero() {
            return personas[0];
        }
        @Override
        public Persona extraer() {
            if (estaVacia())
                return null;
            else {
                Persona p = personas[0];
                for (int i = 0; i < indice; i++) {
                    personas[i]=personas[i+1];
                }
                personas[indice-1]=null;
                return p;
            }
        }
    }
}

public class App {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Cola cola = new Cola(10);

        System.out.println("Está vacía: " + cola.estaVacia());

        cola.insertar(new Persona(1, "Ronaldo"));
        cola.insertar(new Persona(2, "Nadal"));
        cola.insertar(new Persona(3, "Raúl"));


        cola.mostrar();
        System.out.println("***********************");
        System.out.println("Extraer: " + cola.extraer());
        System.out.println("***********************");
        cola.mostrar();
        //System.out.println("Está vacía: " + cola.estaVacia());
    }

}
```