LAB ASSIGNMENT 13

ITERATOR DESIGN PATTERN

ITERATOR DP is a structural design pattern in which client does not know the internal data structure of concrete containers instead it uses iterator.

CODE:

- iIterator.java

```java
package iteratordp;

public interface iIterator {
    public boolean hasnext();
    public Object next();
}
```

- iContainer.java

```java
package iteratordp;

public interface iContainer {
    public iIterator getIterator();
}
```

- MusicContainer.java

```java
package iteratordp;
public class MusicContainer implements iContainer{
    private String instruments[] = {"Piano","Guitar","Violin","Drum"};

    @Override
    public iIterator getIterator() {
        return new MusicIterator();
    }

    private class MusicIterator implements iIterator{
        private int index;

        @Override
        public boolean hasnext() {
            if (index < instruments.length){
                return true;
            }
            else {return false;}
        }
        @Override
        public Object next() {
            if (this.hasnext()){
                return instruments[index++];
            }else {
                return null;
            }
        }
    }
}
```

- Client.java

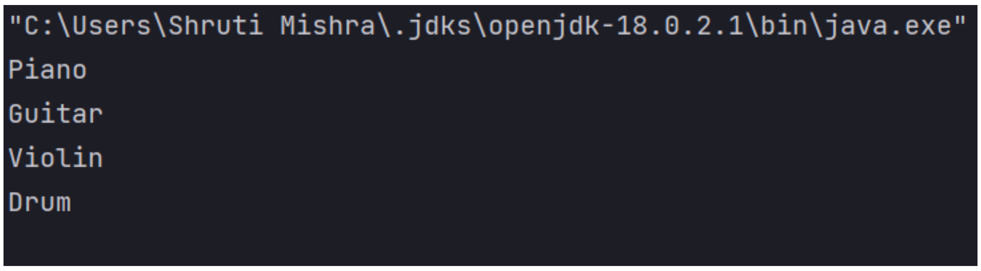
```
package iteratordp;
public class Client {

    public static void main(String[] args) {

        iContainer container = new MusicContainer();
        iIterator iterator = container.getIterator();
        while (iterator.hasnext()){
            Object obj = iterator.next();
            System.out.println(obj);
        }

    }
}
```

OUTPUT:



```
"C:\Users\Shruti Mishra\.jdks\openjdk-18.0.2.1\bin\java.exe"
Piano
Guitar
Violin
Drum
```