

## LAB ASSIGNMENT 11

### FLYWEIGHT DESIGN PATTERN

Flyweight DP is a structural design pattern that lets you fit more objects into the available amount of RAM by sharing common parts of state between multiple objects instead of keeping all of the data in each object.

CODE:

- Instrument.java

```
package flyweightDP;

public interface Instrument {
    void play();
}
```

- Harmonium.java

```
public class Harmonium implements Instrument {
    private String wood;

    public Harmonium(String wood){
        this.wood = wood;
    }

    @Override
    public void play() {
        System.out.println(wood + "-wood Harmonium");
    }
}
```

- HarmoniumFactory.java

```
package flyweightDP;
import java.util.HashMap;

public class HarmoniumFactory {

    private static final HashMap hm = new HashMap();

    public static Instrument getHarmonium(String wood) {
        Harmonium p = (Harmonium)hm.get(wood);
    }
}
```

```

        if(p == null) {
            p = new Harmonium(wood);
            hm.put(wood, p);
            System.out.println("Creating Harmonium of wood type : " + wood);
        }
        return p;
    }
}

```

- FlyweightDP.java

```

public class FlyweightDP {
    private static final String choice[] = { "Mahogany", "Teak", "Maple" };
    public static void main(String[] args) {

        for(int i=0; i < 9; ++i) {
            Harmonium p = (Harmonium)
HarmoniumFactory.getHarmonium(getRandomChoice());
            p.play();
        }
    }
    private static String getRandomChoice() {
        return choice[(int)(Math.random()*choice.length)];
    }
}

```

## OUTPUT:

```

"C:\Users\Shruti Mishra\.jdk\openjdk-18.0.2.1\bin\java.exe" "-javaagent:C:\Program Files\
Creating Harmonium of wood type : Teak
Teak-wood Harmonium
Creating Harmonium of wood type : Maple
Maple-wood Harmonium
Maple-wood Harmonium
Maple-wood Harmonium
Maple-wood Harmonium
Teak-wood Harmonium
Teak-wood Harmonium
Maple-wood Harmonium
Creating Harmonium of wood type : Mahogany
Mahogany-wood Harmonium

```