Bahria University,

Karachi Campus



LAB ASSIGNMENT NO.

**07**

LIST OF TASKS

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| TASK NO | OBJECTIVE |
| 1. | **You are working on an application that have utility to turn flashlight of smartphone On/Off and have a requirement to add ringtones and effects for flashlight in an application, Implement Decorator pattern for adding ringtone functionality in an application that have a basic functionality of flashlight only. Decorate an application with ringtones and flashlight effects using Decorator.** |
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Submitted On:

**-May-2022**

**Task 1: You are working on an application that have utility to turn flashlight of smartphone On/Off and have a requirement to add ringtones and effects for flashlight in an application, Implement Decorator pattern for adding ringtone functionality in an application that have a basic functionality of flashlight only. Decorate an application with ringtones and flashlight effects using Decorator.**

**Main:**

static void Main(string[] args) {

IFlashLight flash\_obj = new FlashLight();

IFlashLight ring\_obj = new Ringtone\_Effect(new FlashLight());

IFlashLight obj\_1 = new Ringtone\_Effect(new FlashLight());

Flash\_Light\_Effect effect\_obj = new Flash\_Light\_Effect();

Ringtone\_Effect ringtone\_obj = new Ringtone\_Effect();

Console.WriteLine("Basic Functionality of Flash Light:");

flash\_obj.Functionality();

Console.WriteLine("---------------------------------------------");

Console.WriteLine("Choose option to see its Decortaion effect:");

Console.WriteLine("1: Flash Light Effect");

Console.WriteLine("2: Ringtone Effect");

Console.WriteLine("---------------------------------------------");

int option = int.Parse(Console.ReadLine());

switch (option){

case 1:{

Console.WriteLine("\nDecorated with rigntone:");

ringtone\_obj.new\_basic\_function();

break;}

case 2:{

Console.WriteLine("\nDecorated with flashlight effect:");

effect\_obj.new\_basic\_function();

break;}}}

**Interface:**

public interface IFlashLight{

void Functionality();}

**Abstract Class Decorator:**

abstract class FlashLightDecorator : IFlashLight{

public IFlashLight decorated\_function;

public FlashLightDecorator()

{ }

public FlashLightDecorator(IFlashLight decorated\_function){

this.decorated\_function = decorated\_function;}

public void Functionality(){

decorated\_function.Functionality();}}

**Flash Light Class:**

class FlashLight : IFlashLight{

public FlashLight()

{ }

public void Functionality(){

Console.WriteLine("Simple Flash Light");}

**Ring Tunes:**

class Ringtone\_Effect : FlashLightDecorator{

public FlashLightDecorator Decorated\_Fun;

public Ringtone\_Effect()

{ }

public Ringtone\_Effect(IFlashLight Decorated\_Fun){

this.decorated\_function = Decorated\_Fun;}

public void new\_basic\_function(){

Set\_Ringtune\_Effect();}

private void Set\_Ringtune\_Effect(){

Console.WriteLine("Ringtone has been added.\n");

Console.WriteLine("Sea Breeze Ringtone .........");

Console.ReadLine();}}

**Flash Light:**

class Flash\_Light\_Effect : FlashLightDecorator

{

public FlashLightDecorator Decorated\_Fun;

public Flash\_Light\_Effect()

{ }

public Flash\_Light\_Effect(IFlashLight Decorated\_Fun)

{

this.decorated\_function = Decorated\_Fun;

}

public void new\_basic\_function()

{

Set\_FL\_Effect();

}

private void Set\_FL\_Effect()

{

Console.WriteLine("Flash Light has been added.\n");

Console.WriteLine("Blinking Effect.........");

Console.ReadLine();

}

}

**Output:**



