Bahria University

Karachi Campus

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Description automatically generated

LAB EXPERIMENT NO.

07

LIST OF TASKS

|  |  |
| --- | --- |
| 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. |

Submitted On:

1-06-2023

(Date: DD/MM/YY)

(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.

**Program Class**

using System;

namespace Decorator

{

public class HelloWorld

{

public static void Main(string[] args)

{

Iflashlight basicFlashlight = new BasicFlashlight();

Iflashlight flashlightWithRingtone = new RingtoneDecorator(basicFlashlight);

flashlightWithRingtone.TurnOn();

flashlightWithRingtone.TurnOff();

} } }

**Iflashlight Class**

using System;

using System.Collections.Generic;

namespace Decorator

{

public interface Iflashlight

{

void TurnOn();

void TurnOff();

} }

**BasicFlashLight Class**

using System;

using System.Collections.Generic;

namespace Decorator

{

public class BasicFlashlight : Iflashlight

{

public void TurnOn()

{

Console.WriteLine("Basic flashlight turned on");

}

public void TurnOff()

{

Console.WriteLine("Basic flashlight turned off");

} } }

**FlashLightDecorator Class**

using System;

using System.Collections.Generic;

namespace Decorator

{

public abstract class FlashlightDecorator: Iflashlight

{

protected Iflashlight decoratedFlashlight;

public FlashlightDecorator(Iflashlight decoratedFlashlight)

{

this.decoratedFlashlight = decoratedFlashlight;

}

public virtual void TurnOn()

{

decoratedFlashlight.TurnOn();

}

public virtual void TurnOff()

{

decoratedFlashlight.TurnOff();

} } }

**RingtoneDecorator Class**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace Decorator

{

public class RingtoneDecorator:FlashlightDecorator

{

public RingtoneDecorator(Iflashlight decoratedFlashlight) : base(decoratedFlashlight)

{

}

public override void TurnOn()

{

PlayRingtone();

decoratedFlashlight.TurnOn();

}

public override void TurnOff()

{

decoratedFlashlight.TurnOff();

StopRingtone();

}

private void PlayRingtone()

{

Console.WriteLine("Playing ringtone...");

}

private void StopRingtone()

{

Console.WriteLine("Stopping ringtone...");

} }

**OUTPUT**

