**Exercise 6: Implementing the Proxy Pattern**

public class ProxyPatternExample {

interface Image {

void display();

}

static class RealImage implements Image {

private String fileName;

public RealImage(String fileName) {

this.fileName = fileName;

loadFromRemoteServer();

}

private void loadFromRemoteServer() {

System.out.println("Loading " + fileName + " from remote server...");

}

public void display() {

System.out.println("Displaying " + fileName);

}

}

static class ProxyImage implements Image {

private String fileName;

private RealImage realImage;

public ProxyImage(String fileName) {

this.fileName = fileName;

}

public void display() {

if (realImage == null) {

realImage = new RealImage(fileName);

} else {

System.out.println(fileName + " loaded from cache.");

}

realImage.display();

}

}

public static void main(String[] args) {

Image image1 = new ProxyImage("photo1.jpg");

Image image2 = new ProxyImage("photo2.jpg");

System.out.println("First time viewing photo1:");

image1.display();

System.out.println("\nSecond time viewing photo1:");

image1.display();

System.out.println("\nFirst time viewing photo2:");

image2.display();

}

}

Output:

A screenshot of a computer program

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