**Exercise 6: Implementing the Proxy Pattern**

**Source Code:**

**Image.java**

public interface Image {

void display();

}

**RealImage.java**

public class RealImage implements Image {

private final String filename;

public RealImage(String filename) {

this.filename = filename;

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

}

public void display() {

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

}

}

**ProxyImage.java**

public class ProxyImage implements Image {

private final String filename;

private RealImage real;

public ProxyImage(String filename) { this.filename = filename; }

public void display() {

if (real == null) real = new RealImage(filename);

real.display();

}

}

**ImageViewerDemo.java**

public class ImageViewerDemo {

public static void main(String[] args) {

Image img1 = new ProxyImage("cat.jpg");

Image img2 = new ProxyImage("dog.png");

img1.display(); // loads + displays

img1.display(); // cached display only

img2.display(); // loads + displays

img2.display(); // cached display only

}

}

**Output:**

**A computer screen shot of a program

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