**IMPLEMENTING THE PROXY PATTERN:**

1. **Creating a New Java Project**
   * A new Java project named ProxyPatternExample was set up.
2. **Defining the Subject Interface**
   * An interface called Image was defined with a method display() to standardize image handling.
3. **Implementing the Real Subject Class**
   * A class named RealImage was created, implementing the Image interface to load images from a remote server.
4. **Implementing the Proxy Class**
   * A class named ProxyImage was developed, implementing the Image interface and holding a reference to RealImage.
   * Lazy initialization and caching were incorporated into ProxyImage to optimize image loading.
5. **Testing the Proxy Implementation**
   * A test class was created to demonstrate how ProxyImage is used to load and display images, highlighting the benefits of lazy initialization and caching.
6. Output

