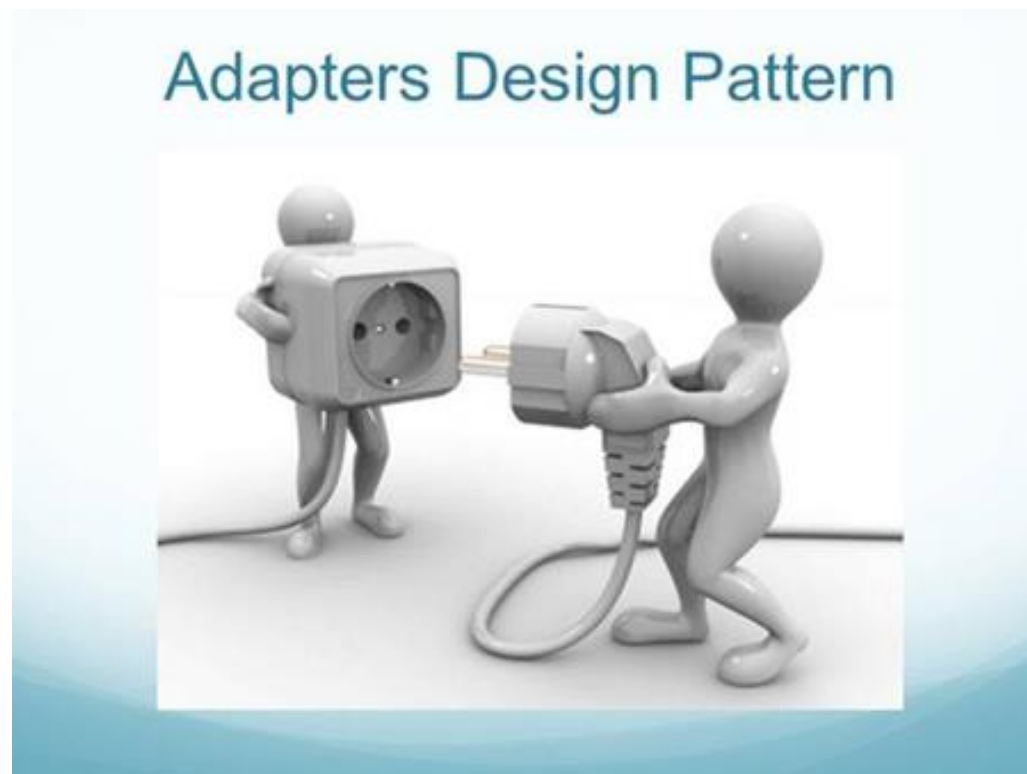


适配器(Adapter)模式

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适配器Adapter定义

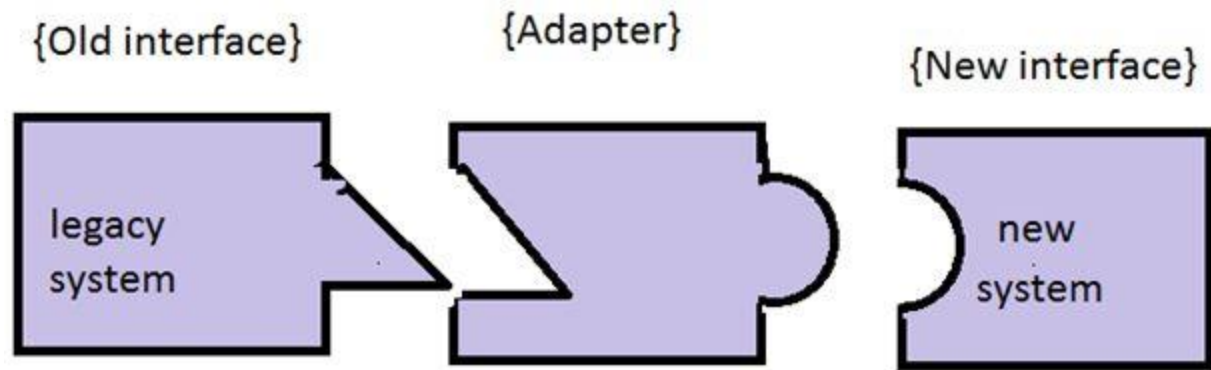
- 将类的接口转换成客户期望的接口。
- 适配器让具有不兼容接口的类能够相互合作。
- 也称
 - Wrapper
 - Translator



现实场景

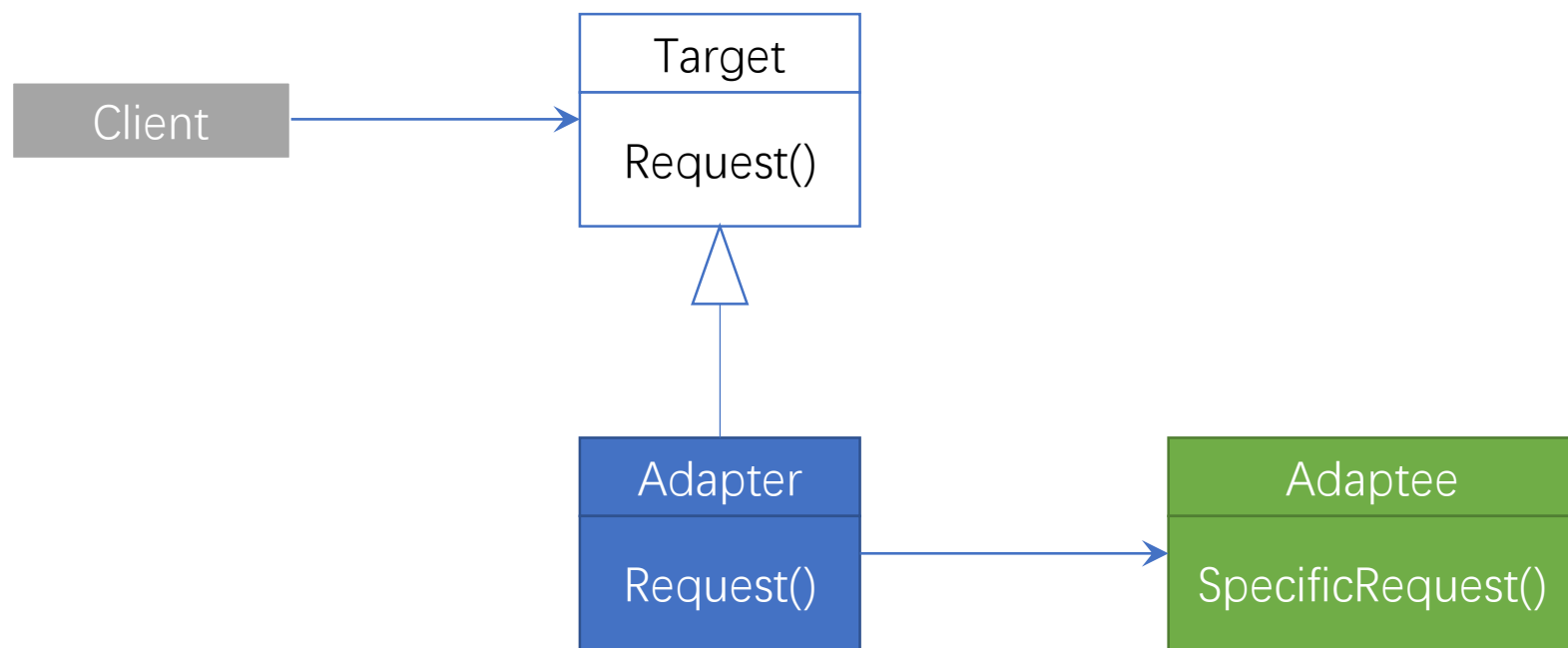


适配器示意图



关系图

角色	职责
Target	定义客户要使用的接口
Adapter	<u>将Adaptee的接口进行适配转换，暴露Target接口给客户</u>
Adaptee	<u>需要被转换接口的对象</u>
Client	通过适配器接口Target去使用Adaptee的功能



代码~不兼容接口

```
package io.spring2go.corespring.display;

// HDMI接口
public interface IHdmi {

    public void openHdmi();
}
```

```
package io.spring2go.corespring.display;

// VGA接口
public interface IVga {

    public void openVga();
}
```

代码~VGA显示器

```
package io.spring2go.corespring.display;

// 支持VGA接口显示器
public class VgaDisplay implements IVga {

    public void openVga() {
        System.out.println("Opening..VGA Display...");
    }

}
```

代码~HDMI2VGA适配器

```
package io.spring2go.corespring.display;

// VGA转HDMI适配器
public class Vga2HdmiAdapter implements IHdmi {

    private IVga vgaDisplay;

    public Vga2HdmiAdapter(IVga vgaDisplay) {
        this.vgaDisplay = vgaDisplay;
    }

    public void openHdmi() {
        // 适配逻辑
        this.vgaDisplay.openVga();
        System.out.println("Opening HDMI device");
    }
}
```


代码~笔记本客户程序

```
package io.spring2go.corespring.display;

public class LaptopMain {

    public static void main(String[] args) {

        VgaDisplay vgaDisplay = new VgaDisplay();

        Vga2HdmiAdapter adapter = new Vga2HdmiAdapter(vgaDisplay);

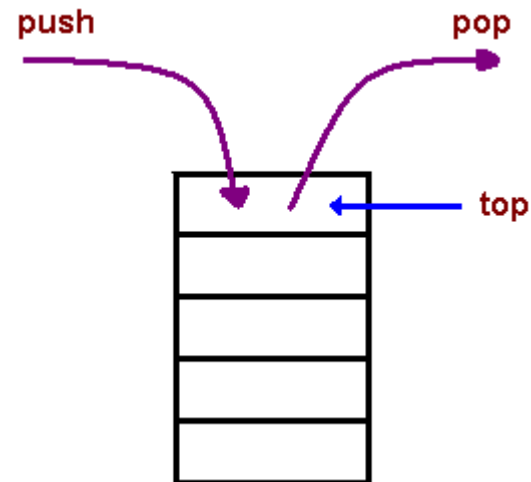
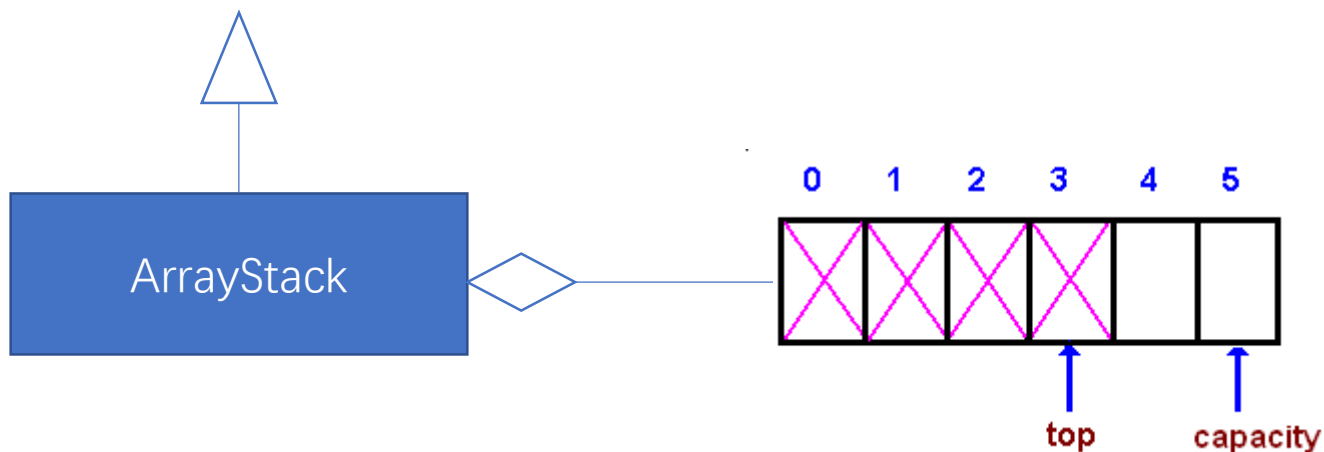
        operateHdmiLaptop(adapter);
    }

    static void operateHdmiLaptop(IHdmi hdmiDisplay) {
        hdmiDisplay.openHdmi();
    }

}
```

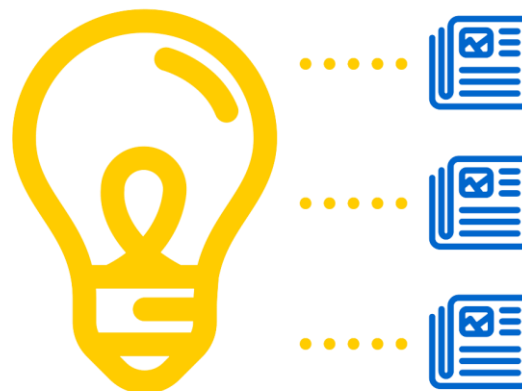
案例2~基于数组的栈实现

```
package io.spring2go.corespring.stack;  
  
// 栈接口  
public interface IStack<T> {  
    public boolean isEmpty();  
  
    public T pop() throws StackException;  
  
    public T peek() throws StackException;  
  
    public void push (T e) throws StackException;  
  
    public void clear();  
}
```



应用

- Core Java
 - `Java.util.Array#asList()`
 - `Java.io.InputStreamReader(InputStream)`(return a Reader)
 - `Java.io.OutputStreamWriter(OutputStream)`(return a Writer)
- Spring Framework
 - `JpaVendorAdapter`
 - `HibernateJpaVendorAdapter`
 - `HandlerInterceptorAdapter`
 - `MessageListenerAdapter`
 - `SpringContextResourceAdapter`
 - `ClassPreProcessorAgentAdapter`
 - `RequestMappingHandlerAdapter`
 - `AnnotationMethodHandlerAdapter`
 - `WebMvcConfigurerAdapter`



参考

- Adapter Design Pattern Demystified
 - <https://www.c-sharpcorner.com/UploadFile/b7dc95/adapter-design-pattern-demystified/>
- Stack Implementation using Array
 - <http://codepumpkin.com/stack-implementation-using-array/>



问题

- 利用适配器模式，使用数组实现队列接口



代码

- <https://github.com/spring2go/core-spring-patterns>





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Adapters Design Pattern

