

Design Pattern Lab
(20CP210P)
Assignment 9



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Interface Bus

```
interface Bus {  
    void getLocation();  
}
```

Interface Train

```
public interface Train {  
    void getLocationLocal();  
    void getLocationExpress();  
}
```

Class Adapter

```
import java.util.Scanner;  
  
public class Adapter implements Bus {  
    Train TrainTracker;  
  
    public Adapter ( String TrainType ) {  
        if ( TrainType.equalsIgnoreCase("local")){  
            TrainTracker = new LocalTracking();  
        }else if ( TrainType.equalsIgnoreCase("express")){  
            TrainTracker = new ExpressTracking();  
        }else {  
            System.out.println("Enter Valid Train type");  
        }  
    }  
  
    @Override  
    public void getLocation() {  
  
        String train_type;  
        System.out.println("Enter the type of train : ");  
        Scanner sc = new Scanner(System.in);  
        train_type = sc.nextLine();  
  
        if ( train_type.equalsIgnoreCase("local")){  
            TrainTracker.getLocationLocal();  
        }else if ( train_type.equalsIgnoreCase("express")){  
            TrainTracker.getLocationExpress();  
        }else {  
            System.out.println("Enter Valid Train type");  
        }  
    }  
}
```

Class BusTracing

```
import java.util.Scanner;

public class BusTracking implements Bus {

    String location = "Bus:Rajkot";
    void setLocation(String loc){
        this.location = loc;
    }

    @Override
    public void getLocation() {
        System.out.println("Your Bus is currently at location : " +
location );
    }

}
```

Class LocalTracking

```
public class LocalTracking implements Train {

    String location = "LocTrain:Rajkot";
    void setLocation(String loc){
        this.location = loc;
    }

    @Override
    public void getLocationLocal() {
        System.out.println("Your Local Train is currently at location : " +
location );
    }

    @Override
    public void getLocationExpress() {
        //
    }

}
```

Class ExpressTracking

```
public class ExpressTracking implements Train {

    String location = "ExpTrain:Rajkot";
    void setLocation(String loc){
        this.location = loc;
    }

    @Override
    public void getLocationLocal() {
        //
    }

    @Override
    public void getLocationExpress() {
        System.out.println("Your Express Train is currently at location : "
+ location );
    }
}
```

Class Tracker

```
import java.util.Scanner;

public class Tracker implements Bus{

    Adapter adapter;
    @Override
    public void getLocation() {
        System.out.println("Input Bus or Train For Tracking : ");
        String bus_or_train ;
        Scanner sc = new Scanner(System.in);
        bus_or_train = sc.nextLine();

        if( bus_or_train.equalsIgnoreCase("bus")){
            BusTracking bt = new BusTracking();
            bt.getLocation();
        }

        else if ( bus_or_train.equalsIgnoreCase("localtrain")){
            LocalTracking lt = new LocalTracking();
            lt.getLocationLocal();
        }

        else if ( bus_or_train.equalsIgnoreCase("expresstrain")){
            ExpressTracking et = new ExpressTracking();
            et.getLocationExpress();
        }

        else {
            System.out.println("Enter Valid Bus or Train type ");
        }
    }
}
```

Class Main

```
public class Main {  
    public static void main(String[] args) {  
        Tracker tracker = new Tracker();  
        tracker.getLocation();  
        tracker.getLocation();  
        tracker.getLocation();  
    }  
}
```

Output :

```
C:\Program Files\Java\jdk-18.0.2\bin\java.exe -javaagent:C:\Program Files  
Input Bus or Train For Tracking :  
bus  
Your Bus is currently at location : Bus:Rajkot  
Input Bus or Train For Tracking :  
expresstrain  
Your Express Train is currently at location : ExpTrain:Rajkot  
Input Bus or Train For Tracking :  
localtrain  
Your Local Train is currently at location : LocTrain:Rajkot  
  
Process finished with exit code 0
```