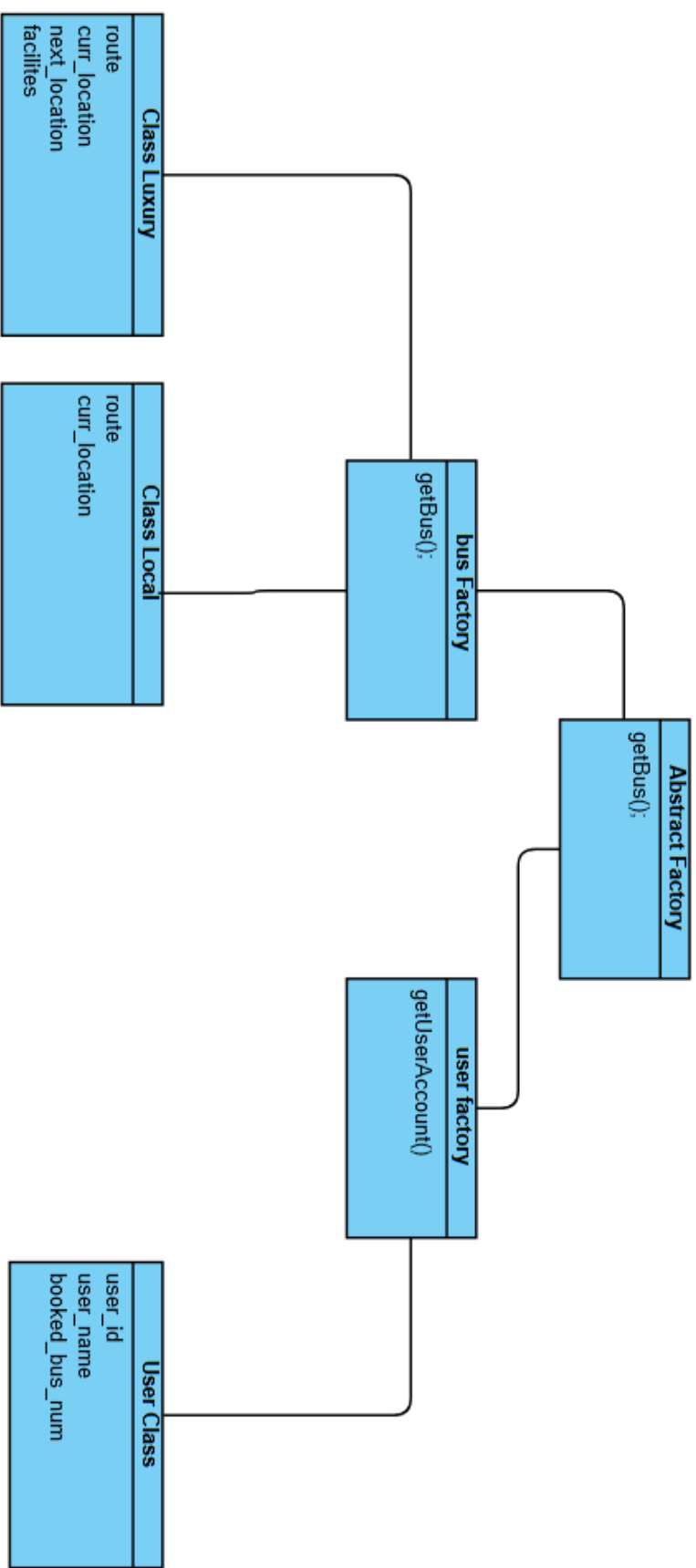


Design Pattern Lab  
(20CP210P)  
Assignment 5



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- Class Main

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {

        // Welcome Messages
        System.out.println("Welcome TO KV Bus Service Portal");
        System.out.println("Please Create Your Account , Enter your name :
");

        // Inputing for Username
        Scanner userNameInput = new Scanner(System.in);
        String userName = userNameInput.nextLine();

        // Using factory 's factory to get new User
        User user = new
FactoryFactory().getFactory("user").getUser(userName);

        Bus local = null;
        Bus luxury = null;

        boolean cFlag = false;

        do {

            // Which bus user want to book
            System.out.println("Booking Choices : Local(1) or Luxury(2) ");
            int flag = -1;
            Scanner sc = new Scanner(System.in);
            flag = sc.nextInt();

            // For booking Luxury bus
            if (flag == 1) {
                FactoryFactory ff = new FactoryFactory();
                Factory bf = (busFactory) ff.getFactory("bus");
                local = (Bus) bf.getBus("local");

                System.out.println("Bus booked Successfully");
                user.bookedBusType += "local";

                // print details of bus , user
                System.out.println(" 1) User Details 2) Bus Details");
                Scanner getDetailsInput = new Scanner(System.in);
                int getDetails = getDetailsInput.nextInt();

                if (getDetails == 1) {
                    user.getInfo();
                } else if (getDetails == 2) {
                    local.getDetails();
                }
            }
        }
    }
}
```

```

    }

    // For booking Local bus
    else if (flag == 2) {
        FactoryFactory ff = new FactoryFactory();
        Factory bf = (busFactory) ff.getFactory("bus");
        luxury = (Bus) bf.getBus("luxury");

        System.out.println("Bus booked Successfully");
        user.bookedBusType += " luxury ";

        // print details of bus , user
        System.out.println(" 1) User Details 2) Bus Details");
        Scanner getDetailsInput = new Scanner(System.in);
        int getDetails = getDetailsInput.nextInt();

        if (getDetails == 1) {
            user.getInfo();
        } else if (getDetails == 2) {
            luxury.getDetails();
        }
    }

    else {

    }

    // For running KV bus portal again and again
    System.out.println(" 0 for close application 1 for continue ");
    Scanner cFlagg = new Scanner(System.in);

    int cFlaggg = cFlagg.nextInt();

    if ( cFlaggg == 1 ) {
        cFlag = true;
    }
    else {
        cFlag = false;
    }

    } while ( cFlag == true );
}
}

```

## • Interface Factory

```

• interface Factory {
    public Bus getBus( String str );
    public User getUser( String str );
}

```

- Class FactoryFactory ( Factory generator )

```
• public class FactoryFactory {  
  
    public Factory getFactory( String str ) {  
        if ( str == "bus" ) {  
            return (Factory) new busFactory();  
        }  
  
        else if ( str == "user" ) {  
            return (Factory) new userFactory();  
        }  
        return null;  
    }  
};
```

- class busFactory

```
public class busFactory implements Factory {  
  
    public Bus getBus(String str) {  
        if ( str == "local" ) {  
            return (Bus) new Local();  
        }  
        else if ( str == "luxury" ) {  
            return (Bus) new Luxury();  
        }  
        else {  
            System.out.println("Enter Valid Object Name ");  
            return null;  
        }  
    }  
  
    public User getUser(String str){  
        return (User) null;  
    }  
}
```

- class userFactory

```
• public class userFactory implements Factory {  
    public User getUser(String username) {  
        return (User) new User(username);  
    }  
  
    public Bus getBus(String str) {  
        return null;  
    }  
}
```

- Interface Bus

```
• interface Bus {  
    String busNumber = null;  
    public void updateLocation(String str);  
    public void getDetails();  
};
```

- class Luxury

```
• class Luxury implements Bus {  
    public String busNumber = "lux";  
    static int busCount = 0;  
    // for updating bus number whenever new local bus object create  
    Luxury(){  
        busNumber = busNumber + busCount;  
        busCount++;  
    }  
    private String route[] = new String[]{"Dhoraji",  
    "Jetpur","Rajkot","Ahmedabad","Gandhinagar"};  
    private String busSrc = route[0];  
    private String busDestination = route[ route.length - 1 ];  
    private int currLocationIndex = 0;  
  
    public void updateLocation(String str){  
        if ( str == "update" ) {  
            currLocationIndex += 1;  
            System.out.println ("Updated Successfully ! Current  
Location is : " + route[currLocationIndex]);  
        }  
        else if ( str == "reset" ) {  
            currLocationIndex = 0;  
            System.out.println ("reseted Successfully ! Current  
Location is : " + route[currLocationIndex]);  
        }  
        else {  
            System.out.println("Enter valid operation");  
        }  
    }  
  
    public void getDetails() {  
        System.out.println();  
        System.out.println("Bus : " + busNumber );  
        System.out.println("Bus : " + busNumber );  
        System.out.println("bus source : " + busSrc );  
        System.out.println("bus destination : " + busDestination );  
        System.out.println("bus currLocation : " +  
route[currLocationIndex] );  
    }  
}
```

- class Local

```
• public class Local implements Bus{
    public String busNumber = "loc";
    static int busCount = 0;
    // for updating bus number whenever new local bus object create
    Local(){
        busNumber = busNumber + busCount;
        busCount++;
    }
    private String route[] = new String[]{"Dhoraji",
"Jetpur","Rajkot","Ahmedabad","Gandhinagar"};
    private String busSrc = route[0];
    private String busDestination = route[ route.length - 1 ];
    private int currLocationIndex = 0;

    public void updateLocation(String str){
        if ( str == "update" ) {
            currLocationIndex += 1;
            System.out.println ("Updated Successfully ! Current
Location is : " + route[currLocationIndex]);
        }
        else if ( str == "reset" ) {
            currLocationIndex = 0;
            System.out.println ("reseted Successfully ! Current
Location is : " + route[currLocationIndex]);
        }
        else {
            System.out.println("Enter valid operation");
        }
    }

    public void getDetails() {
        System.out.println();
        System.out.println("Bus : " + busNumber );
        System.out.println("Bus : " + busNumber );
        System.out.println("bus source : " + busSrc );
        System.out.println("bus destination : " + busDestination );
        System.out.println("bus currLocation : " +
route[currLocationIndex] );
    }
}
```

- class User

```
• class User {  
  
    int userId = 0;  
    int staticId = 0;  
    String userName;  
  
    public String bookedBusType = " ";  
  
    public User () {  
        //  
    }  
    public User ( String userName) {  
        this.userName = userName;  
        this.userId = staticId;  
        staticId++;  
    }  
  
    public void getInfo ( ) {  
        System.out.println("Name : " + userName);  
        System.out.println("Userid : " + userId);  
        System.out.println("Booked bus : " + bookedBusType);  
    }  
}
```



- Output

```
Welcome TO KV Bus Service Portal
Please Create Your Account , Enter your name :
kartikey
Booking Choices : Local(1) or Luxury(2)
2
Bus booked Successfully
1) User Details 2) Bus Details
2

Details:
Bus : lux0
Bus : lux0
bus source : Dhoraji
bus destination : Gandhinagar
bus currLocation : Dhoraji
0 for close application 1 for continue
```

```
0 for close application 1 for continue
1
Booking Choices : Local(1) or Luxury(2)
1
Bus booked Successfully
1) User Details 2) Bus Details
1
Name : kartikey
Userid : 0
Booked bus : luxury local
```