PROYECTO PATRONES

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A) Un diagrama UML extendido, indicando los cambios realizados y la finalidad de cada clase/interfaz.

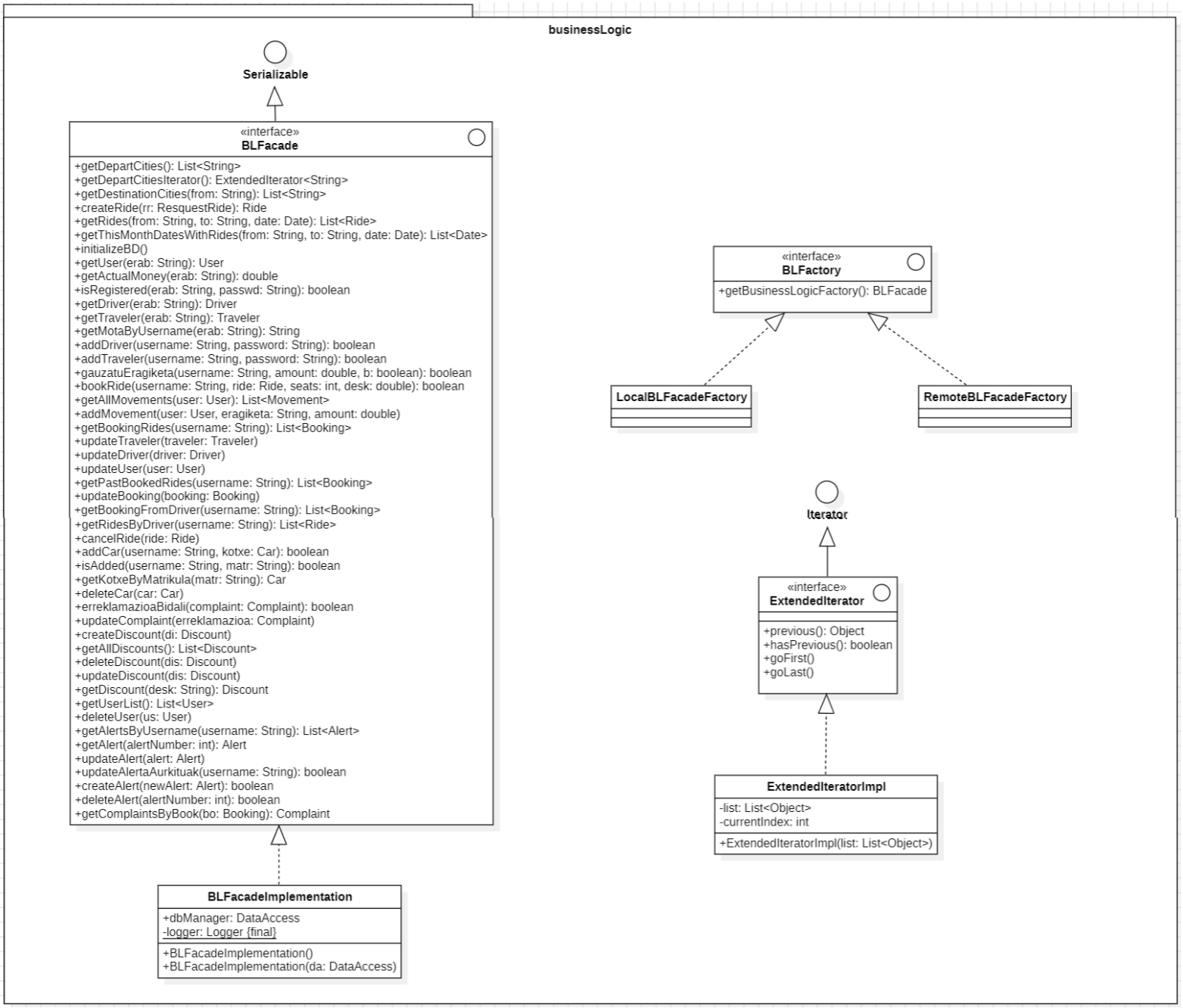
- Interfaz **BLFactory** (creator): contiene el método getBusinessLogicFactory().
- Clase **LocalBLFacadeFactory** (concrete creator): clase que implementa la interfaz BLFactory. Tiene como finalidad realizar las acciones necesarias en el método getBusinessLogicFactory() cuando ha sido comprobado que isBusinessLogicLocal es true.
- Clase **RemoteBLFacadeFactory** (concrete creator): clase que implementa la interfaz BLFactory. Tiene como finalidad realizar las acciones necesarias en el método getBusinessLogicFactory() cuando ha sido comprobado que isBusinessLogicLocal es false.

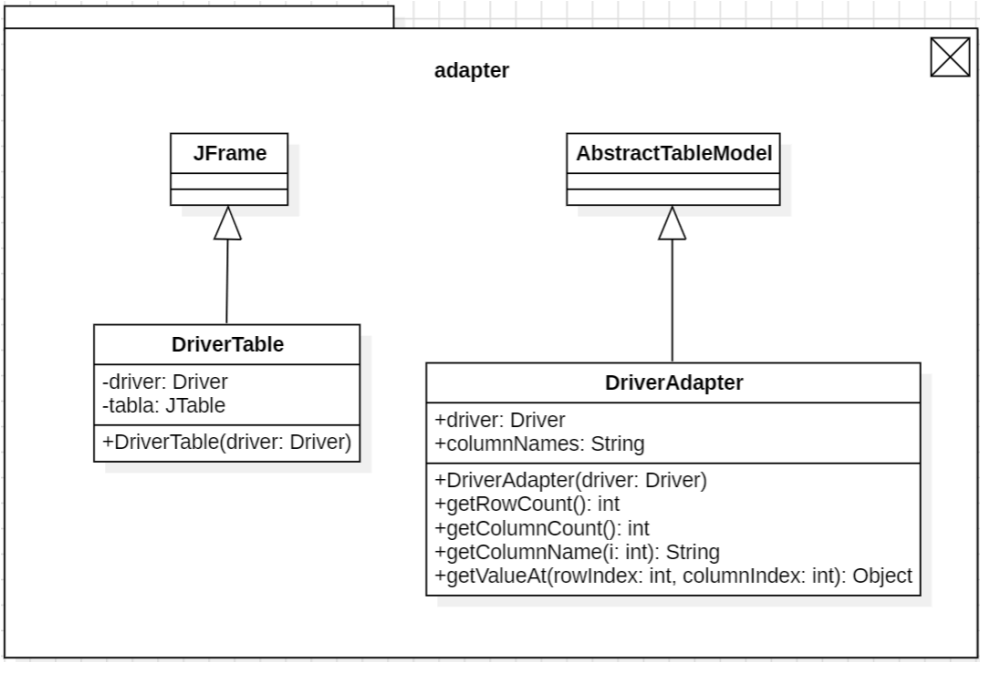
- Clase **ExtendedIteratorImpl**: implementa la interfaz ExtendedIterator y desarrolla los métodos next, hasNext, previous, hasPrevious, goFirst y goLast.

- Clase **DriverAdapter**: para poder visualizar los viajes de un Driver en una JTable hemos creado la clase adaptadora DriverAdapter la cual se encarga de convertir los datos del Driver y sus Rides en un formato que JTable pueda entender y mostrar, se encarga de definir las columnas y los datos de cada fila que son los viajes creados por el Driver.

- Clase **DriverTable**: se encarga de crear la ventana gráfica JFrame para mostrar los datos proporcionados por DriverAdapter

- Clase **Main**: Hemos creado un main que se encuentra en el package adapter que ejecuta la aplicación mostrando en un JFrame los viajes del Driver.


businessLogic
Serializable
«interface»
BLFacade
+getDepartCities(): List<String>
+getDepartCitiesIterator(): ExtendedIterator<String>
+getDestinationCities(from: String): List<String>
+createRide(rr: ResquestRide): Ride
+getRides(from: String, to: String, date: Date): List<Ride>
+getThisMonthDatesWithRides(from: String, to: String, date: Date): List<Date>
+initializeBD()
+getUser(erab: String): User
+getActualMoney(erab: String): double
+isRegistered(erab: String, passwd: String): boolean
+getDriver(erab: String): Driver
+getTraveler(erab: String): Traveler
+getMotaByUsername(erab: String): String
+addDriver(username: String, password: String): boolean
+addTraveler(username: String, password: String): boolean
+gauzatuEragiketa(username: String, amount: double, b: boolean): boolean
+bookRide(username: String, ride: Ride, seats: int, desk: double): boolean
+getAllMovements(user: User): List<Movement>
+addMovement(user: User, eragiketa: String, amount: double)
+getBookingRides(username: String): List<Booking>
+updateTraveler(traveler: Traveler)
+updateDriver(driver: Driver)
+updateUser(user: User)
+getPastBookedRides(username: String): List<Booking>
+updateBooking(booking: Booking)
+getBookingFromDriver(username: String): List<Booking>
+getRidesByDriver(username: String): List<Ride>
+cancelRide(ride: Ride)
+addCar(username: String, kotxe: Car): boolean
+isAdded(username: String, matr: String): boolean
+getKotxeByMatrikula(matr: String): Car
+deleteCar(car: Car)
+erreklamazioaBidali(complaint: Complaint): boolean
+updateComplaint(erreklamazioa: Complaint)
+createDiscount(di: Discount)
+getAllDiscounts(): List<Discount>
+deleteDiscount(dis: Discount)
+updateDiscount(dis: Discount)
+getDiscount(desk: String): Discount
+getUserList(): List<User>
+deleteUser(us: User)
+getAlertsByUsername(username: String): List<Alert>
+getAlert(alertNumber: int): Alert
+updateAlert(alert: Alert)
+updateAlertaAurkituak(username: String): boolean
+createAlert(newAlert: Alert): boolean
+deleteAlert(alertNumber: int): boolean
+getComplaintsByBook(bo: Booking): Complaint
«interface»
BLFactory
+getBusinessLogicFactory(): BLFacade
LocalBLFacadeFactory
RemoteBLFacadeFactory
Iterator
«interface»
ExtendedIterator
+previous(): Object
+hasPrevious(): boolean
+goFirst()
+goLast()
ExtendedIteratorImpl
-list: List<Object>
-currentIndex: int
+ExtendedIteratorImpl(list: List<Object>)
BLFacadeImplementation
+dbManager: DataAccess
-logger: Logger {final}
+BLFacadeImplementation()
+BLFacadeImplementation(da: DataAccess)


adapter
JFrame
AbstractTableModel
DriverTable
-driver: Driver
-tabla: JTable
+DriverTable(driver: Driver)
DriverAdapter
+driver: Driver
+columnNames: String
+DriverAdapter(driver: Driver)
+getRowCount(): int
+getColumnCount(): int
+getColumnName(i: int): String
+getValueAt(rowIndex: int, columnIndex: int): Object

B) El código que habéis modificado, describiendo las líneas más significativas.

1. **<u>Patrón Factory Method</u>**

   - En vez de realizar todo en el ApplicationLauncher, se crea la interfaz BLFactory y las clases LocalBLFacadeFactory y RemoteBLFacadeFactory para así aplicar el método Factory.

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

		ConfigXML c = ConfigXML.getInstance();

		Logger l = Logger.getLogger(ConfigXML.class.getName());
		l.config(c.getLocale());
		Locale.setDefault(new Locale(c.getLocale()));
		l.config("Locale: "+ Locale.getDefault());

		try {
			BLFactory factory;
			UIManager.setLookAndFeel("javax.swing.plaf.metal.MetalLookAndFeel");

			if (c.isBusinessLogicLocal()) {

				factory = new LocalBLFacadeFactory();

			} else {

				factory = new RemoteBLFacadeFactory();
			}

			BLFacade appFacadeInterface = factory.getBusinessLogicFactory();
			MainGUI.setBussinessLogic(appFacadeInterface);
			MainGUI a = new MainGUI();
			a.setVisible(true);

		} catch (Exception e) {
			l.config("Error in ApplicationLauncher: " + e.toString());
		}
	}
}
public interface BLFactory {
	BLFacade getBusinessLogicFactory ();
}
```

```
public class LocalBLFacadeFactory implements BLFactory{
	@Override
	public BLFacade getBusinessLogicFactory() {
    DataAccess da = new DataAccess();
    return new BLFacadeImplementation(da);
	}
}
```

```
public class RemoteBLFacadeFactory implements BLFactory{
	@Override
	public BLFacade getBusinessLogicFactory() {
```

```
                try {
        ConfigXML c = ConfigXML.getInstance();
                        String serviceName = "http://" + c.getBusinessLogicNode() + ":" + c.getBusinessLogicPort()
            + "/ws/"
                                        + c.getBusinessLogicName() + "?wsdl";
                        URL url = new URL(serviceName);
                        // 1st argument refers to wsdl document above
                        // 2nd argument is service name, refer to wsdl document above
                        QName qname = new QName("http://businesslogic/", "BLFacadeImplementationService");
                        Service service = Service.create(url, qname);
        return service.getPort(BLFacade.class);

    } catch (Exception e) {
        e.printStackTrace();
        return null;
    }
            }
}
```

2. **Patrón Iterator**
    - Se crea la clase **ExtendedIteratorImpl** para implementar la interfaz **ExtendedIterator**. En esta, se desarrollan los métodos necesarios para iterar sobre las ciudades.

```
public class ExtendedIteratorImpl<Object> implements ExtendedIterator<Object>{
            private List<Object> list;
  private int currentIndex;
  public ExtendedIteratorImpl(List<Object> list) {
     this.list = list;
     this.currentIndex = 0;
  }

            @Override
            public boolean hasNext() {
                        return currentIndex < list.size();
            }
            @Override
            public Object next() {
     if (!hasNext()) {
        throw new NoSuchElementException();
     }
     return list.get(currentIndex++);
            }
            @Override
            public Object previous() {
                        if (!hasPrevious()) {
                                    throw new NoSuchElementException();
                        }
                        return list.get(currentIndex--);
            }
            @Override
            public boolean hasPrevious() {
     return currentIndex >= 0;
            }
```

```
        @Override
        public void goFirst() {
    currentIndex = 0;
        }
        @Override
        public void goLast() {
    currentIndex = list.size() - 1;
        }
```

```
        /**
         * {@inheritDoc}
         */
        @WebMethod
        public ExtendedIterator<String> getDepartCitiesIterator() {
                dbManager.open();
                List<String> departLocations = dbManager.getDepartCities();
                dbManager.close();
                ExtendedIterator<String> res = new ExtendedIteratorImpl(departLocations);
                return res;
        }
```

3. Patrón Adapter

Para poder mostrar los viajes de un driver en un JTable hemos creado un package llamado **adapter** donde se encuentran la clase **Main**, **DriverTable** y **DriverAdapter.**

```
package adapter;

import javax.swing.table.AbstractTableModel;

import domain.Driver;
import domain.Ride;

public class DriverAdapter extends AbstractTableModel {

        private Driver driver;
        private String[] columnNames =new String[] {"from", "to", "date", "places", "price" };

        public DriverAdapter(Driver driver) {

                this.driver=driver;

        }

        @Override
        public int getRowCount() {
                // TODO Auto-generated method stub
                return driver.getCreatedRides().size();
        }

        @Override
        public int getColumnCount() {
                // TODO Auto-generated method stub
```

```
                return columnNames.length;
        }


        public String getColumnName(int i) {
            // Challenge!
                return columnNames[i];
          }

        @Override
        public Object getValueAt(int rowIndex, int columnIndex) {

                Ride r = (Ride)driver.getCreatedRides().toArray()[rowIndex];

                switch(columnIndex) {

                case 0:
                        return r.getFrom();
                case 1:
                        return r.getTo();
                case 2:
                        return r.getDate();
                case 3:
                        return r.getnPlaces();
                case 4:
                        return r.getPrice();

               default:
                        return null;

                }

        }

}
```

```
package adapter;

import java.awt.BorderLayout;
import java.awt.Dimension;

import javax.swing.JFrame;
import javax.swing.JScrollPane;
import javax.swing.JTable;

import domain.Driver;

public class DriverTable extends JFrame{
private Driver driver;
private JTable        tabla;
public DriverTable(Driver driver){

        super(driver.getUsername()+"'s rides ");
        this.setBounds(100,100,700,200);
        this.driver =driver;
        DriverAdapter       adapt       =           new DriverAdapter(driver);
```

```
		tabla =	new JTable(adapt);
		tabla.setPreferredScrollableViewportSize(new Dimension(500,		70));
		//Creamos un JscrollPane	y		le agregamos la JTable
		JScrollPane		scrollPane =		new JScrollPane(tabla);
		//Agregamos el	JScrollPane		al contenedor
		getContentPane().add(scrollPane, BorderLayout.CENTER);
}
}
```

```
package adapter;

import businesslogic.*;
import domain.Driver;

public class Main {

		public static void main(String[] args)	{
		//			the		BL		is		local
				//boolean isLocal = true;
				//BLFacade blFacade = new BLFactory().getBusinessLogicFactory(isLocal);
				BLFacade blf = new BLFacadeImplementation();
				LocalBLFacadeFactory localblf = new LocalBLFacadeFactory();

				blf.initializeBD();

				Driver	d= blf.getDriver("Urtzi");
				DriverTable		dt=new DriverTable(d);
				dt.setVisible(true);
		}

}
```

C) Para los patrones Iterator y Adapter, una captura de imagen que muestre su ejecución.

2. Patrón Iterator

```
DataAccess opened => isDatabaseLocal: true
DataAccess created => isDatabaseLocal: true isDatabaseInitialized: false
DataAcess closed
DataAccess opened => isDatabaseLocal: true
DataAcess closed
_____________________
FROM LAST TO FIRST
Madrid
Irun
Donostia
Barcelona

_____________________
FROM FIRST TO LAST
Barcelona
Donostia
Irun
Madrid
```

3. Patrón Adapter