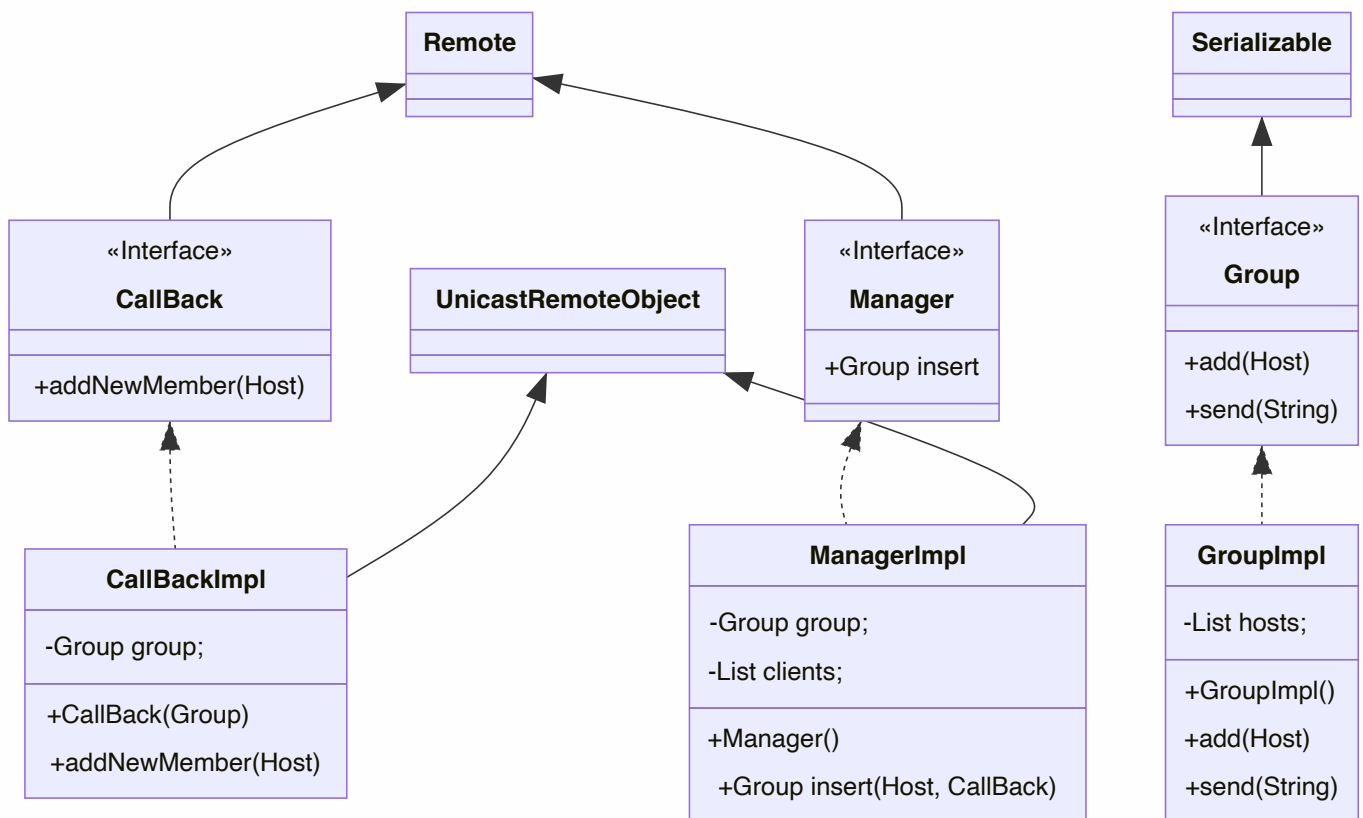
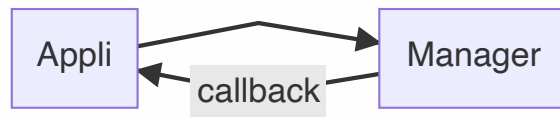


## Tutorat : Intergiciel

### Problem Socket and RMI

Serializable: On envoie une copie de l'objet les modification restent locales

Remote : On envoie une "reference". Les modification ...



```
public interface Manager extend Remote{
    public Group insert(Host h, Callback cb) throws RemoteException;
}
```

```
public interface Group extends Serializable{
    void add(Host h);
    void send(String msg);
}
```

```
public interface Callback extend Remote{
    public void addNewMember (Host h) throws RemoteException;
}
```

```
public class GroupImpl implements Group{
    private List <Host> hosts;

    public GroupImpl () {
        this.hosts = new ArrayList<>();
    }

    public void add (Host h){
        this.host.add(h);
    }

    public void send (String message) {
        for (Host: hosts) {
            Socket s = new Socket (h.host,h.port);
            OutputStream outputStream = s.getOutputStream();
            outputStream.write(message);
        }
    }
}
```

```
public class CallbackImpl extend UnicastRemoteObject implements Callback {
    private Group group;
    public Callback (Group g) throws RemoteExeception {
        this.group = g;
    }

    public void addNewMember (Host h) throws RemoteException {
        this.group.add(h);
    }
}
```

```
public class ManagerImpl extend UnicastRemoteObject implements Manager {
    private Group group;
```



```

        inputStream.read(buffer);
        System.out.println(buffer);
    }
}.start();

Manager manager = (Manager) Naming.lookup(ManagerImpl, URL);
Group group = new Group();
group = m.insert(new Host(args[0], args[1]), new CallbackImpl(group)); // 0:msg
1:port
    group.send("Hello!");
}
}
}
}

```

WS WOAP: REST is a set of architectural principles attuned to the needs of lightweight [web services](#) and [mobile applications](#).

WS REST: SOAP is a standard protocol that was first designed so that applications built with different languages and on different platforms could communicate.