Smart Home Management System

TEAM NO: 31

Team Members

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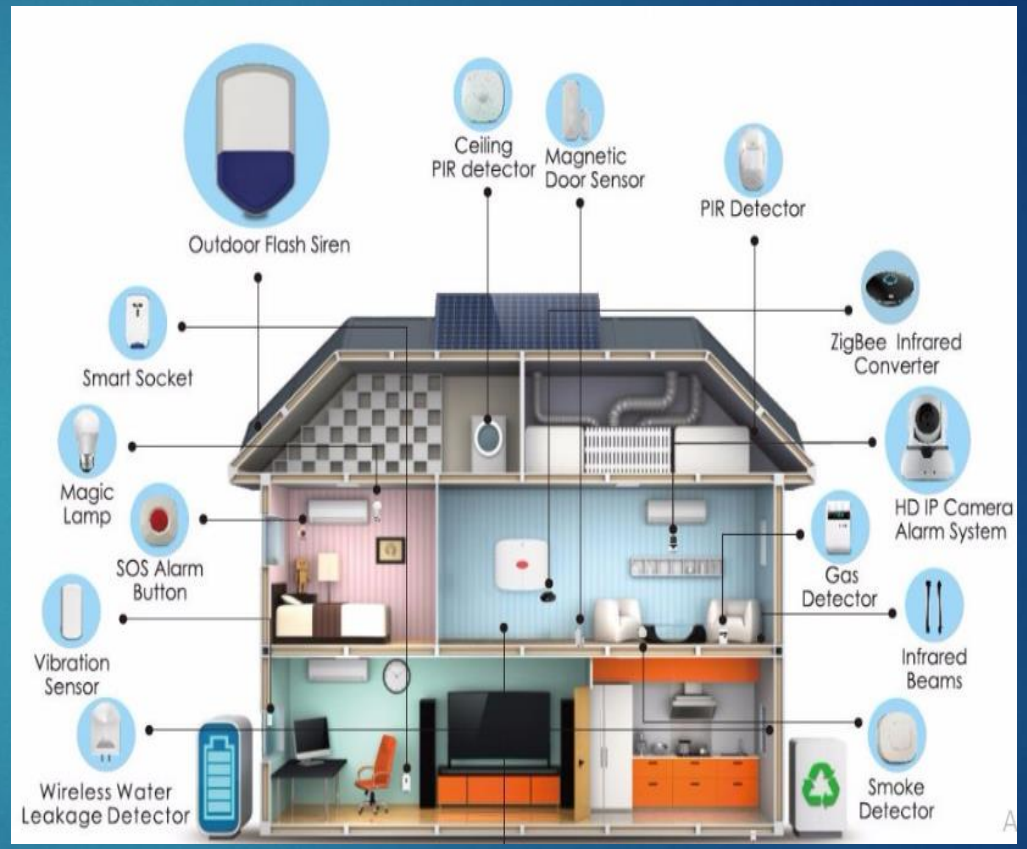


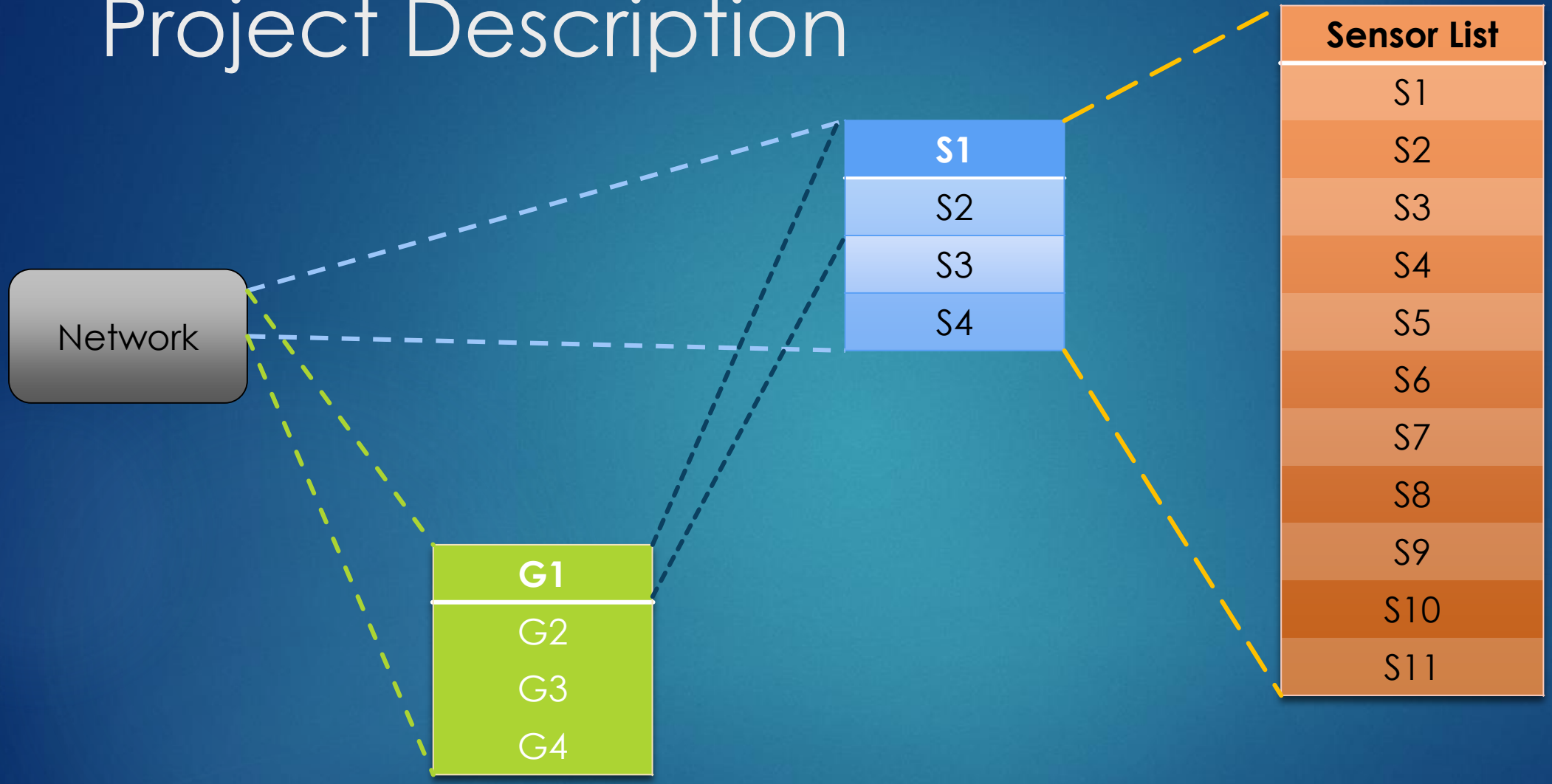
Vision

- To create a Smart Home Network Management system for IoT applications with Object Oriented Programming Concepts

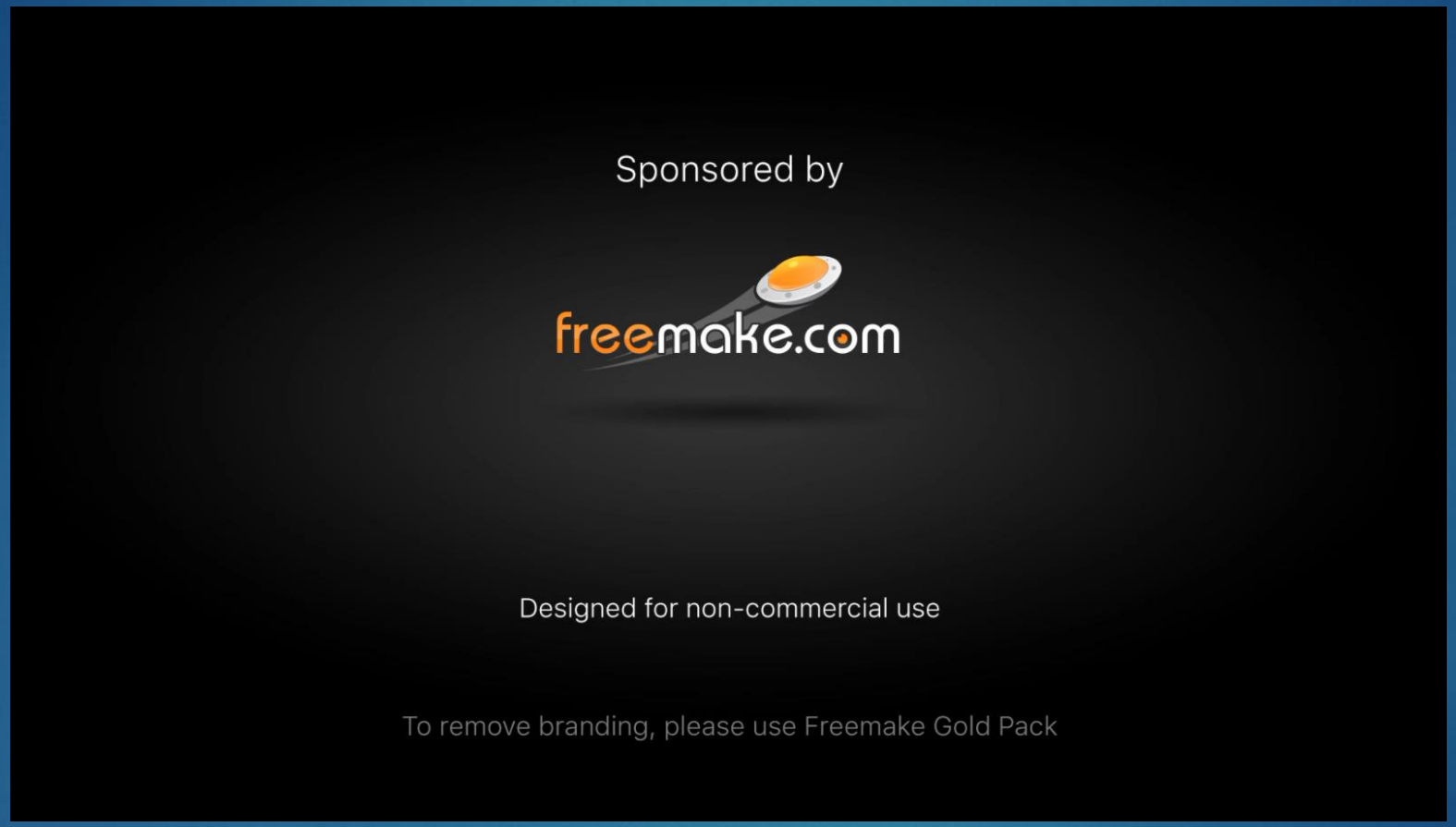
Project Description

- Sensors
- Networks
  - Groups
- Configuration – sensor & group

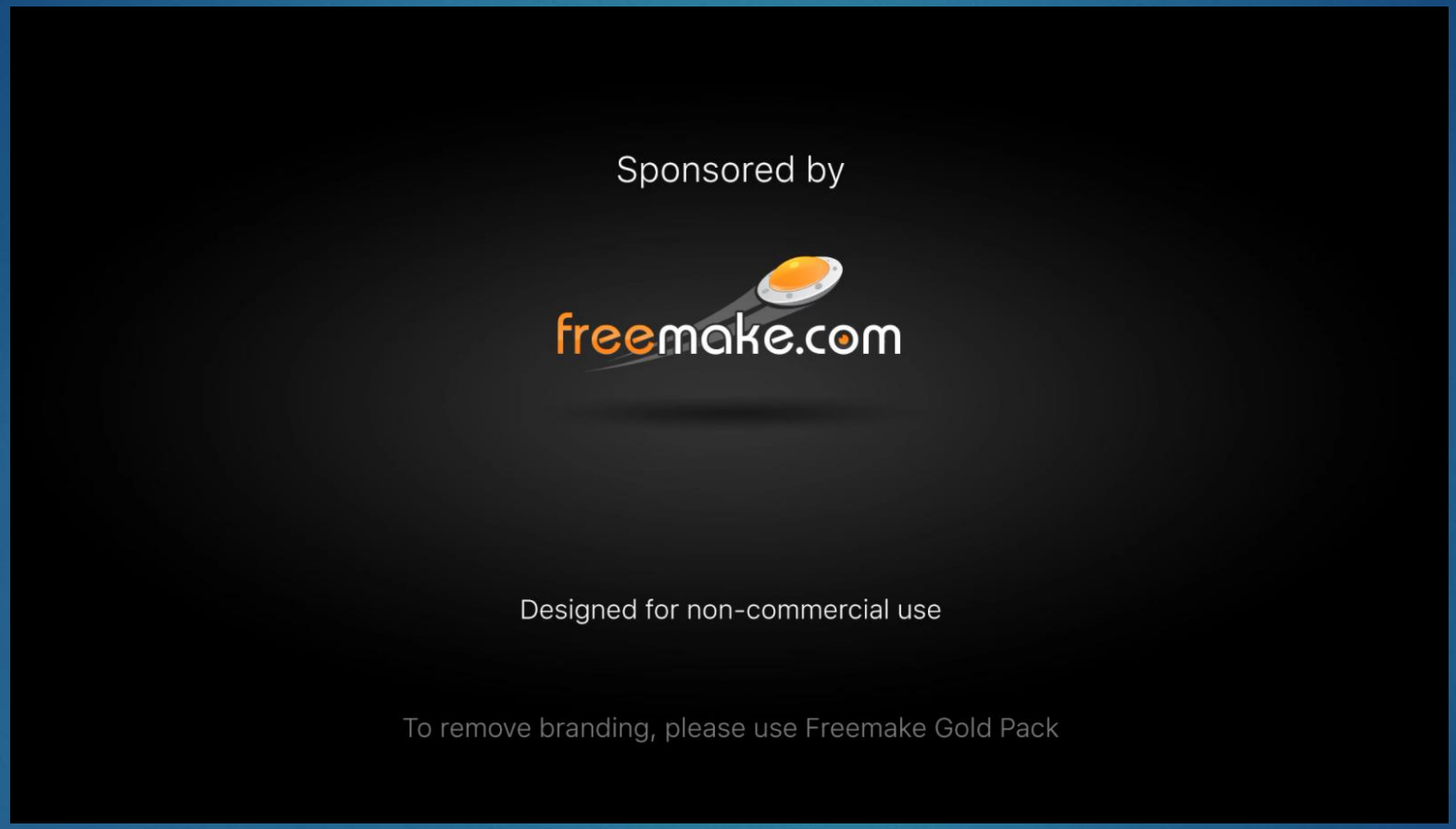
Project Description



Demo – Network Functionality



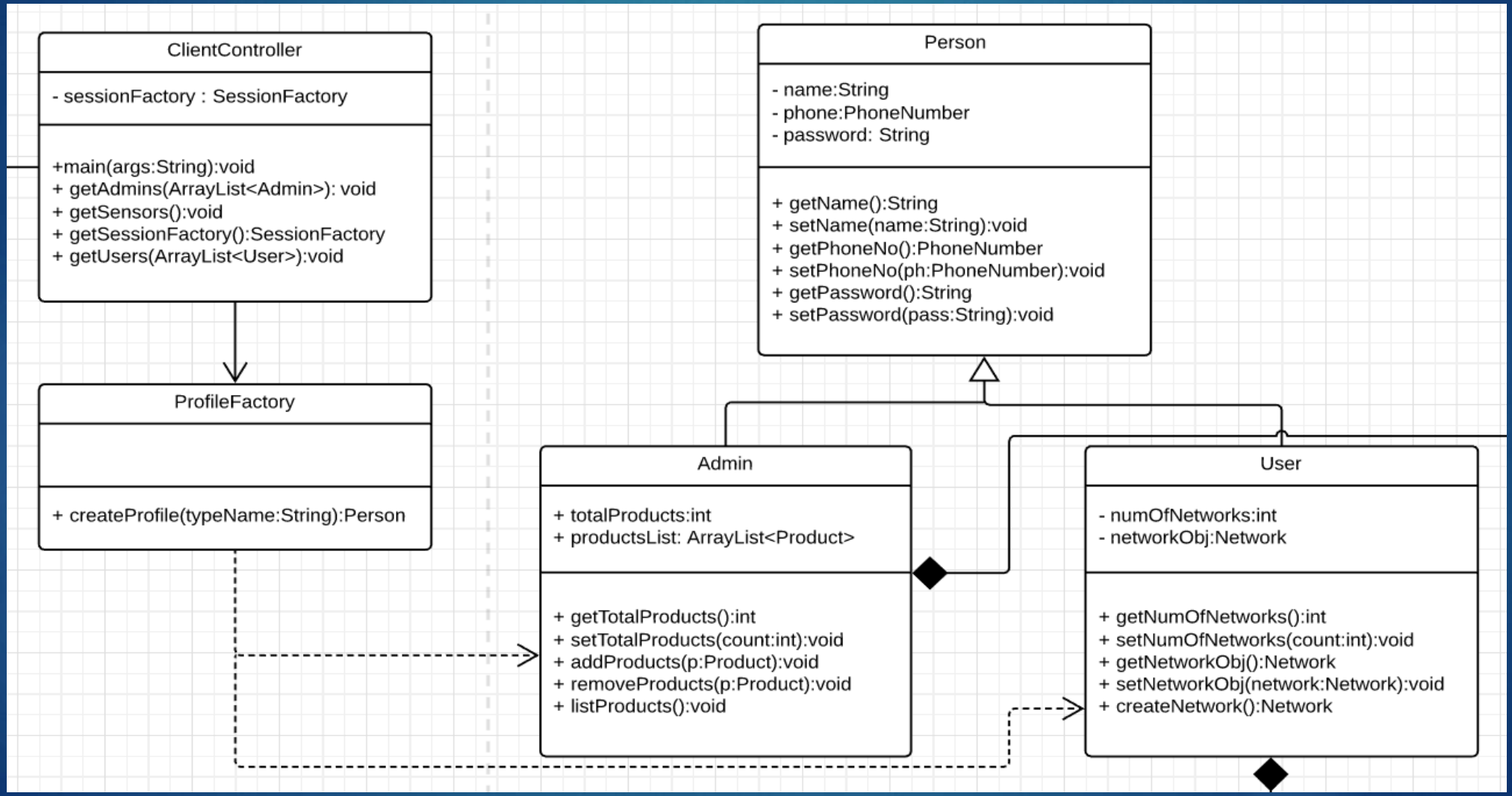
Demo – Group Functionality



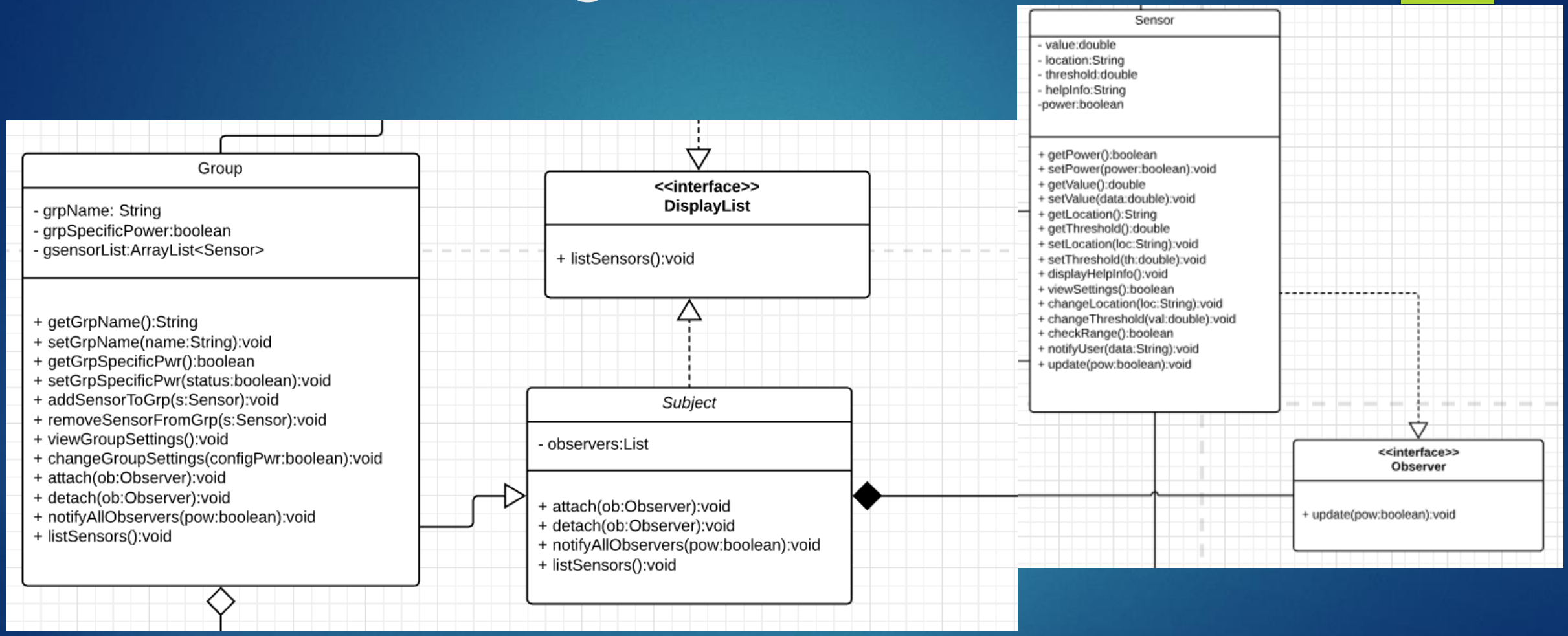
Design Patterns

- Factory Design Pattern
  - Signup
- Observer Design Pattern
  - Notifications

Factory Design Pattern



Observer Design Pattern



Hibernate - Mapping

```java
public class Network implements DisplayList
{
    @Id
    @GeneratedValue
    public int Id;

    @Column(name = "NetworkName")
    public String networkName;

    //@Column(name = "Sensor List")
    @OneToMany(fetch = FetchType.EAGER)
    private List<Sensor> sensorList = new ArrayList<Sensor>();

    //@Column(name = "Group List")
    @OneToMany(fetch = FetchType.LAZY)
    public List<Group> groupList = new ArrayList<Group>();
```

```java
public class Group extends Subject
{
    @Id
    @GeneratedValue
    private int id;

    @Column(name = "Name")
    private String grpName;

    @Column(name = "Power")
    private boolean grpSpecificPower;

    @ManyToMany(fetch = FetchType.EAGER)
    private List<Sensor> gsensorList = new ArrayList<Sensor>();

    public List<Sensor> getgsensorList()
    {
        return this.gsensorList;
    }
```

Link to demo

- CSCI5448_OOAD/31_SmartHomeManagementSystem_FullDemo.mp4

Thank you