Design a Traffic Controller System for a Junction

To design a traffic controller system we will require following objects

1. System Controller
2. Road
3. Traffic Signal
4. Pedestrian/Bicycle

Class : SystemController

Data : Username, Password, Address, NoofRoads, RoadType, SignalStatus, RoadID, SignalId, SignalStatus

Behaviour :

```
login() {
    App.login(Username,Password);
}
add.newRoad() {
    get.newRoadDetails(Address, NoofRoads, RoadType, RoadID) ;
}
display.RoadList() {
    display.listofRoads(Address, RoadType, RoadID);
}
remove.road() {
    get.Roadtoremove( Address, RoadType);
}
display.Signal.List() {
    display.listofSignal(Address, RoadID, SignalID, SignalStatus);
}
get.Signal.Maintenance(SignalId) {
    if (SignalStatus == “Not Working”)
            request.Signal.repair(SignalId, SignalStatus)
    end-if
}
```

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Class : Road

Data : Address, RoadType, SignalType, RoadID,SignalID

Behaviour :

```
add.newSignalSet() {
    get.newSignalSetDetails(Address, RoadID, RoadType, SignalType);
    switch (SignalType) {
            case “All” :
                    get.add.green();
                    get.add.yellow();
                    get.add.red();
                    get.add.pedestrian();
                    get.add.bicycle();
                    break;
            case “Green” :
                    get.add.green();
                    break;
            case “Yellow” :
                    get.add.yellow();
                    break;
            case “Red” :
                    get.add.red();
                    break;
            case “Pedestrian” :
                    get.add.pedestrian();
                    break;
            case “Bicycle” :
                    get.add.bicycle();
                    break;
    }
```

}

remove.SignalSet() {

action.remove.SignalSet(SignalID);

}

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Class : TrafficSignal

Data : RedSignal, YellowSignal, GreenSignal, WalkSignal, BicycleSignal, SignalId, SignalStatus, Time

Behaviour :

update.SignalMaintenance() {

update.SignalStatus.to.working(SignalId,SignalStatus);

return SignalStatus;

}

change.to.red(SignalId){

set.time();

set.red.signal(true);

set.WalkSignal(True);

set.BicycleSignal(True);

set.yellow.signal(false);

set.green.signal(false);

}

change.to.yellow(SignalId) {

set.time();

set.red.signal(false);

set.WalkSignal(True);

set.BicycleSignal(True);

set.yellow.signal(true);

set.green.signal(false);

}

change.to.green(SignalId) {

```
    set.time();
    set.red.signal(false);
    set.WalkSignal(False);
    set.BicycleSignal(False);
    set.yellow.signal(false);
    set.green.signal(true);
}
```

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Class : Pedestrian

Data : ManualButtonPress

Behaviour :

```
get.ManualSignal(ManualButtonPress)
    if (ManualButtonPress == “ON”)
            get.request.to.changeSignal();
    end-if
get.timer();
```