UML Based Design

for

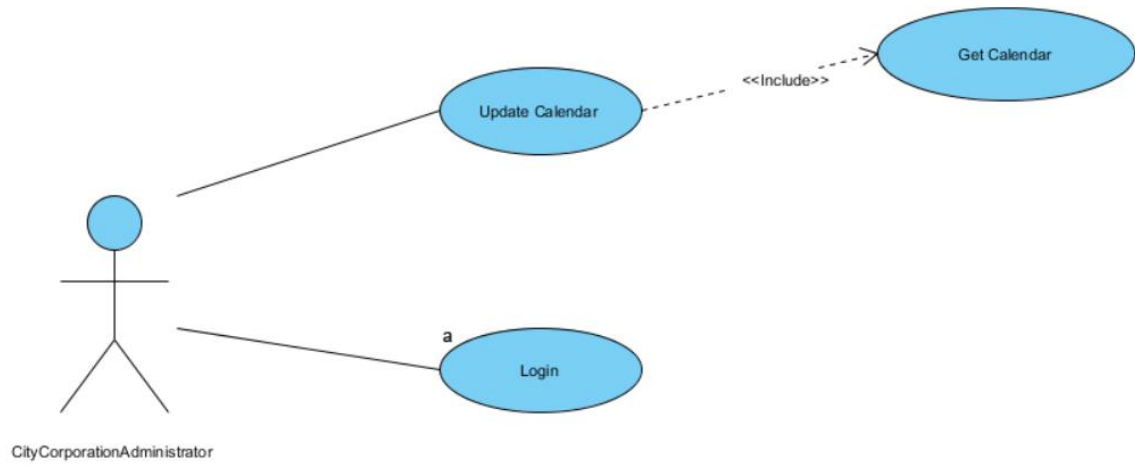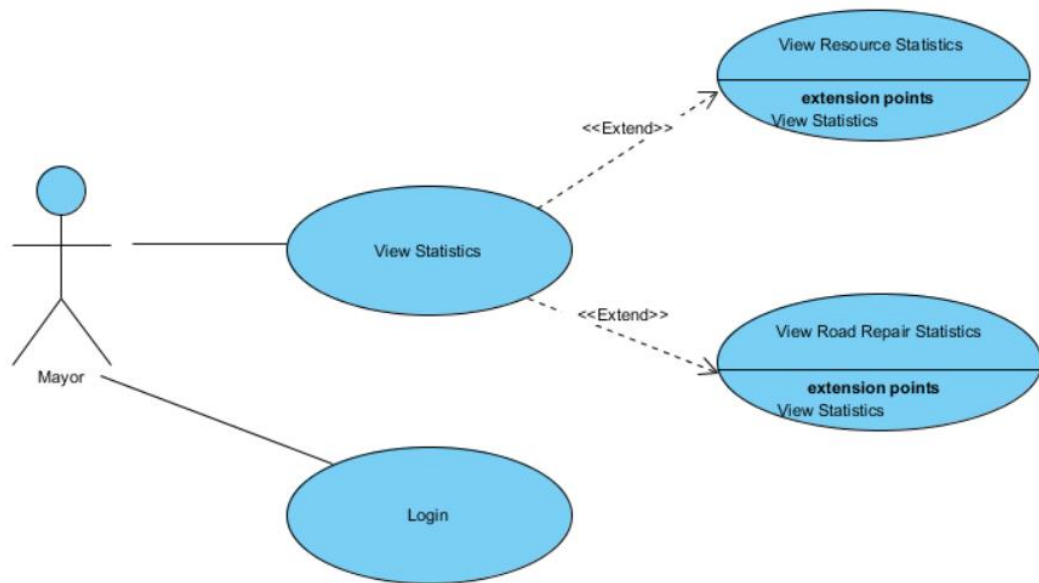## Road Repair and Tracking Software:

By

R.Sri Charan Reddy-14CS10037
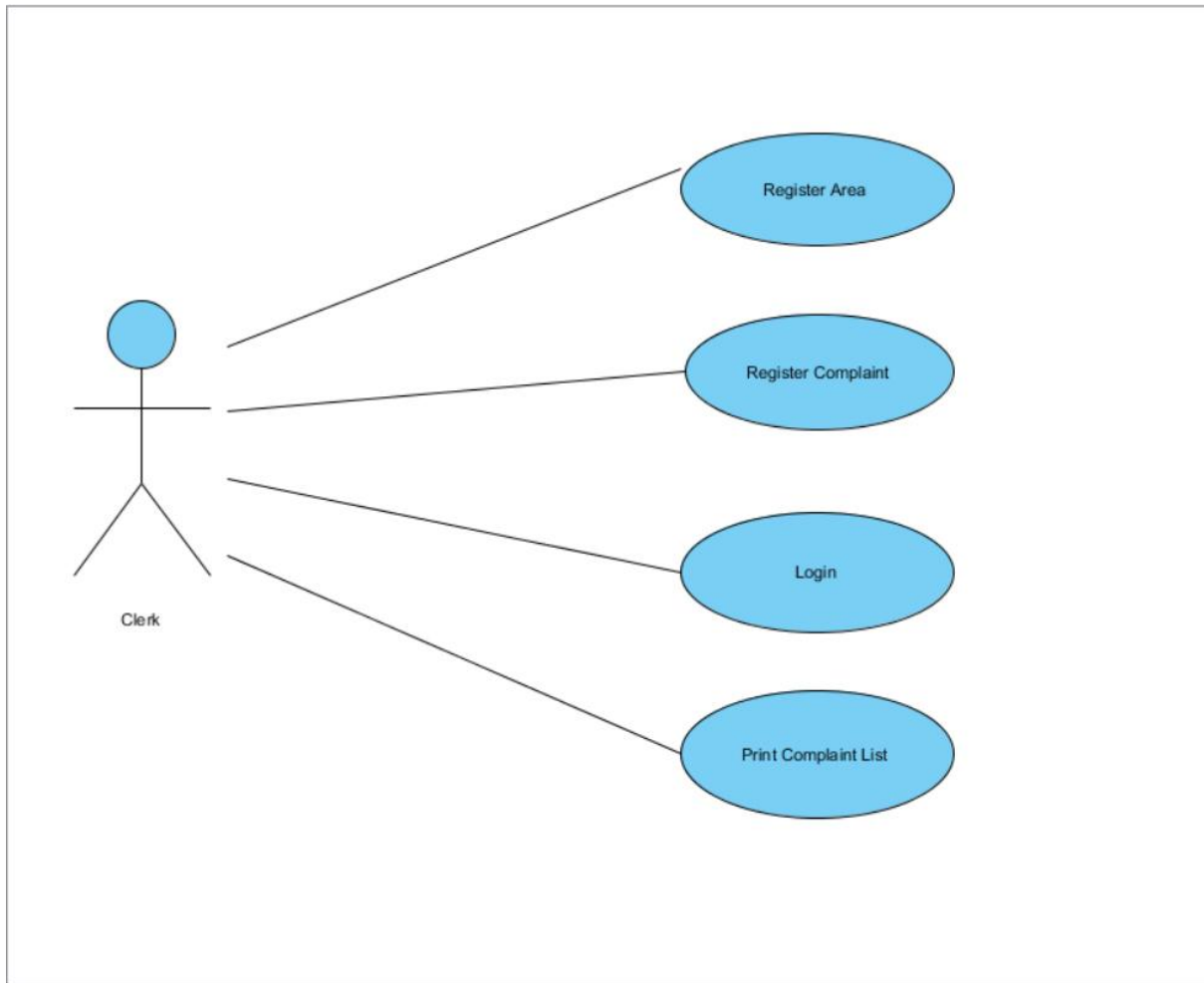
G.Sai Bharath Chandra-14CS10020

Use Case Diagrams:

City Corporation Administrator Use Case Diagram:
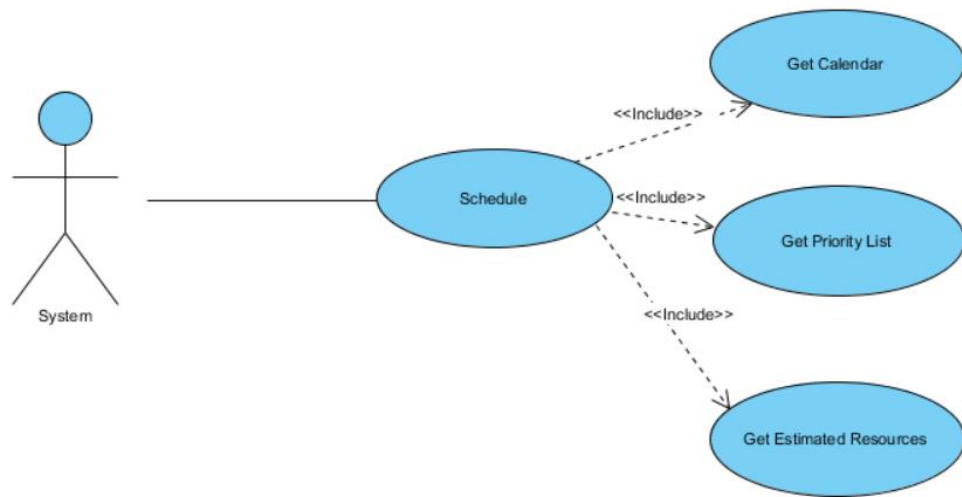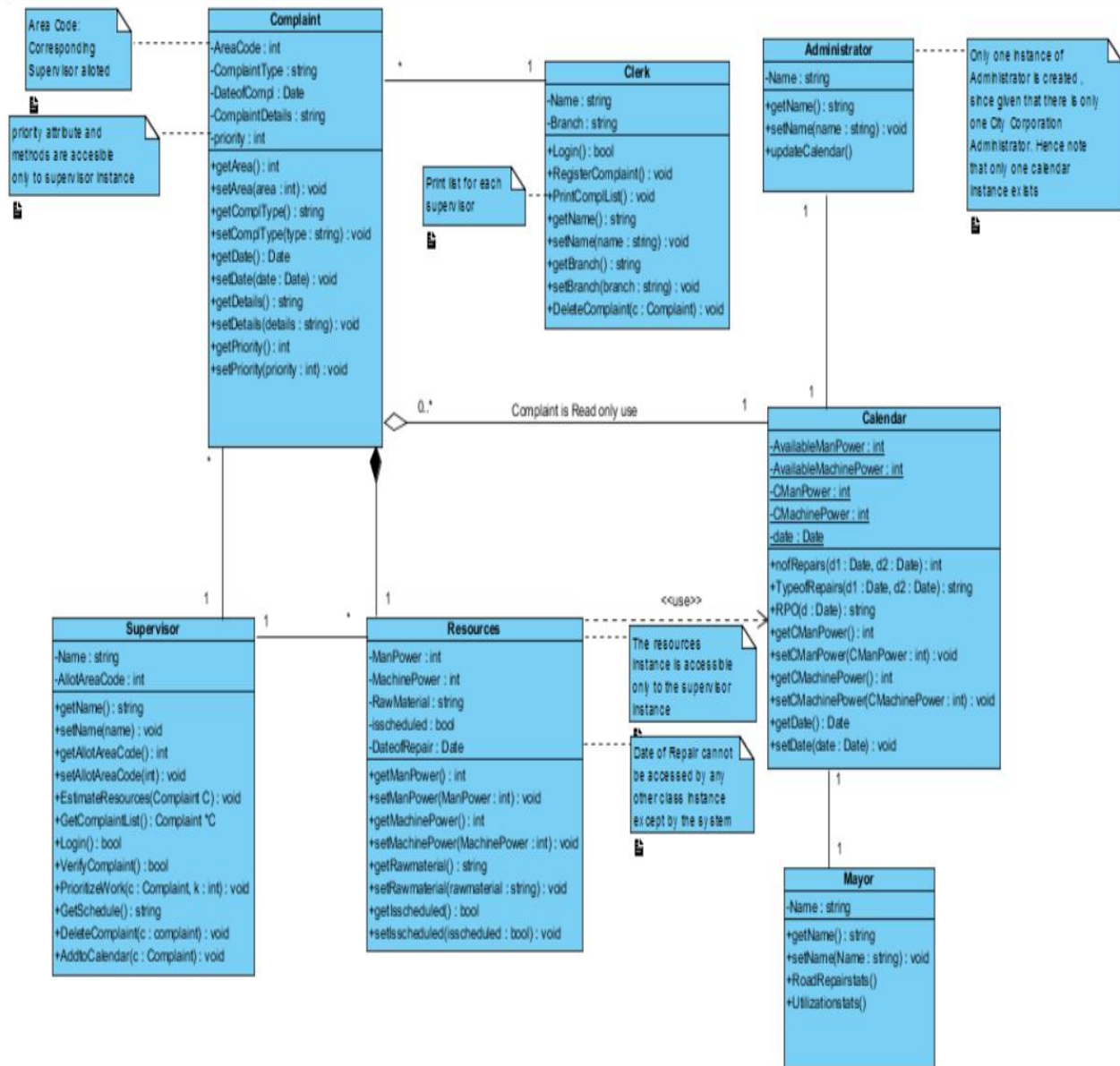
Mayor Use Case Diagram:

Clerk Use Case Diagram:

Supervisor Use case Diagram:

Get Calendar

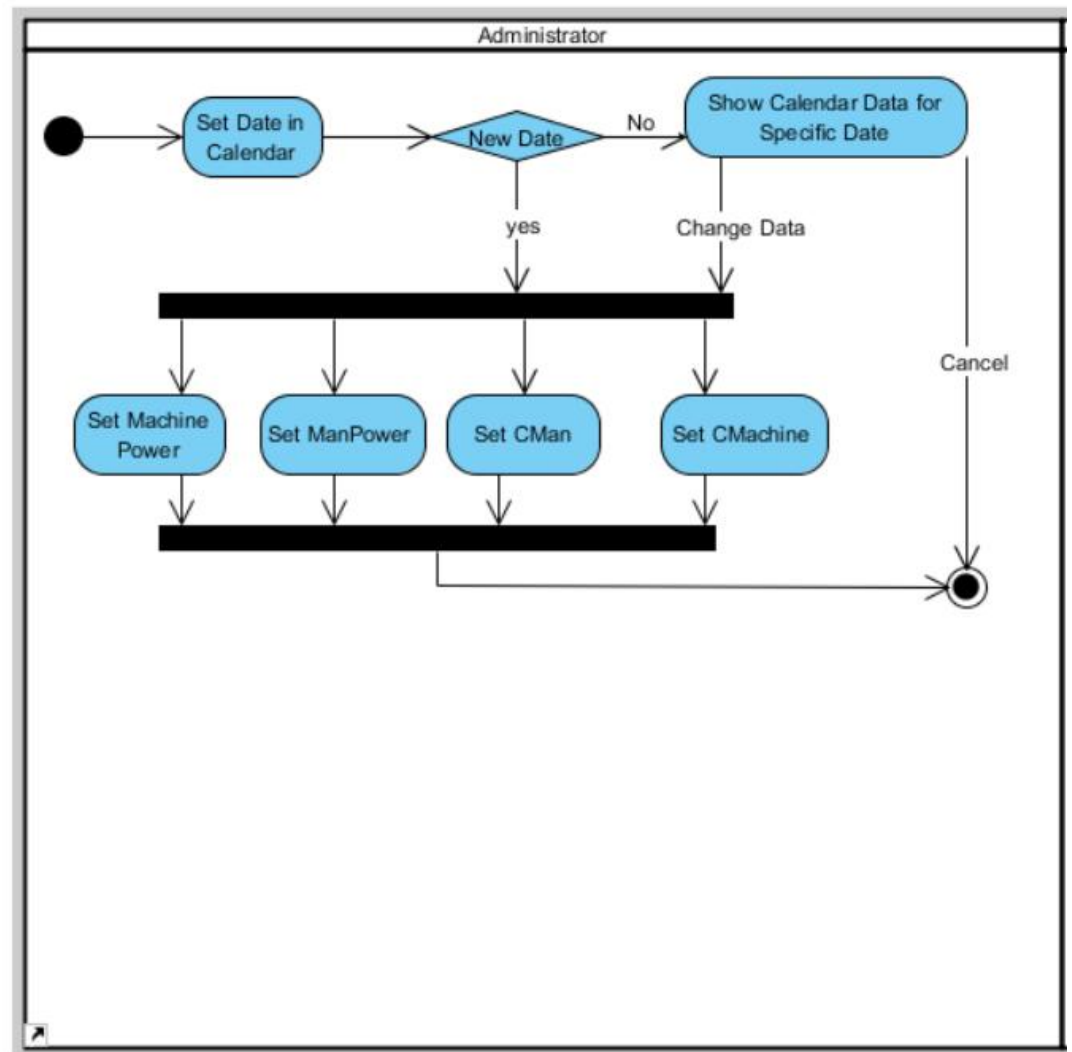<<Include>>

Schedule

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Get Priority List

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Get Estimated Resources

System

System Use Case Diagram:

Complaint
- -AreaCode : int
- -ComplaintType : string
- -DateofCompl : Date
- -ComplaintDetails : string
- -priority : int

- +getArea() : int
- +setArea(area : int) : void
- +getComplType() : string
- +setComplType(type : string) : void
- +getDate() : Date
- +setDate(date : Date) : void
- +getDetails() : string
- +setDetails(details : string) : void
- +getPriority() : int
- +setPriority(priority : int) : void

Area Code: Corresponding Supervisor alloted

priority attribute and methods are accesible only to supervisor instance

Clerk
- -Name : string
- -Branch : string

- +Login() : bool
- +RegisterComplaint() : void
- +PrintCompLlist() : void
- +getName() : string
- +setName(name : string) : void
- +getBranch() : string
- +setBranch(branch : string) : void
- +DeleteComplaint(c : Complaint) : void

Print list for each supervisor

Administrator
- -Name : string

- +getName() : string
- +setName(name : string) : void
- +updateCalendar()

Only one instance of Administrator is created, since given that there is only one City Corporation Administrator. Hence note that only one calendar instance exists

Supervisor
- -Name : string
- -AllotAreaCode : int

- +getName() : string
- +setName(name) : void
- +getAllotAreaCode() : int
- +setAllotAreaCode(int) : void
- +EstimateResources(Complaint C) : void
- +GetComplaintList() : Complaint *C
- +Login() : bool
- +VerifyComplaint() : bool
- +PrioritizeWork(c : Complaint, k : int) : void
- +GetSchedule() : string
- +DeleteComplaint(c : complaint) : void
- +AddtoCalendar(c : Complaint) : void

Resources
- -ManPower : int
- -MachinePower : int
- -RawMaterial : string
- -isscheduled : bool
- -DateofRepair : Date

- +getManPower() : int
- +setManPower(ManPower : int) : void
- +getMachinePower() : int
- +setMachinePower(MachinePower : int) : void
- +getRawmaterial() : string
- +setRawmaterial(rawmaterial : string) : void
- +getIsscheduled() : bool
- +setIsscheduled(isscheduled : bool) : void

The resources instance is accessible only to the supervisor instance

Date of Repair cannot be accessed by any other class instance except by the system

Calendar
- -AvailableManPower : int
- -AvailableMachinePower : int
- CManPower : int
- CMachinePower : int
- date : Date

- +nofRepairs(d1 : Date, d2 : Date) : int
- +TypeofRepairs(d1 : Date, d2 : Date) : string
- +RPO(d : Date) : string
- +getCManPower() : int
- +setCManPower(CManPower : int) : void
- +getCMachinePower() : int
- +setCMachinePower(CMachinePower : int) : void
- +getDate() : Date
- +setDate(date : Date) : void

Mayor
- -Name : string

- +getName() : string
- +setName(Name : string) : void
- +RoadRepairstats()
- +Utilizationstats()

Complaint is Read only use   0..*
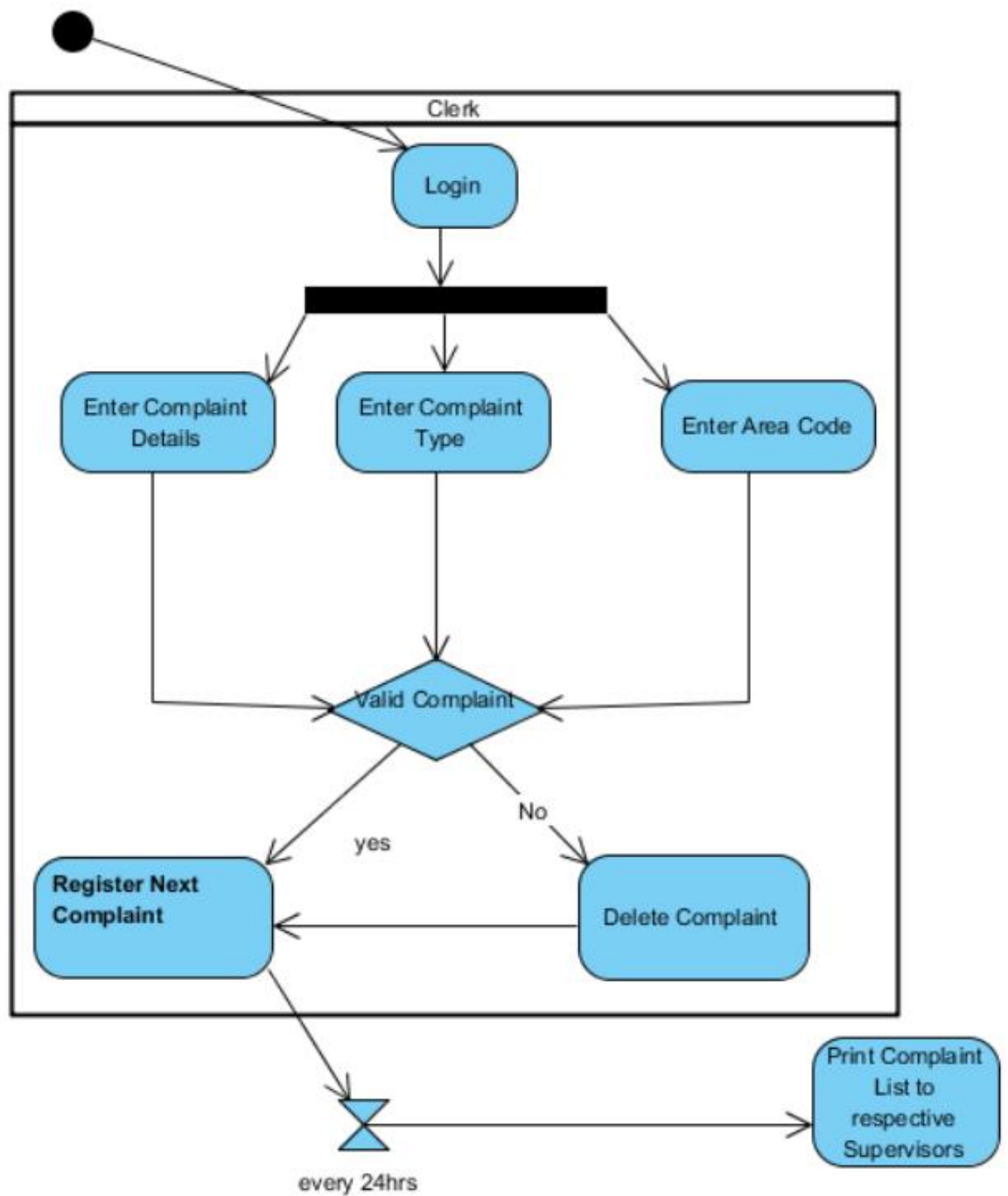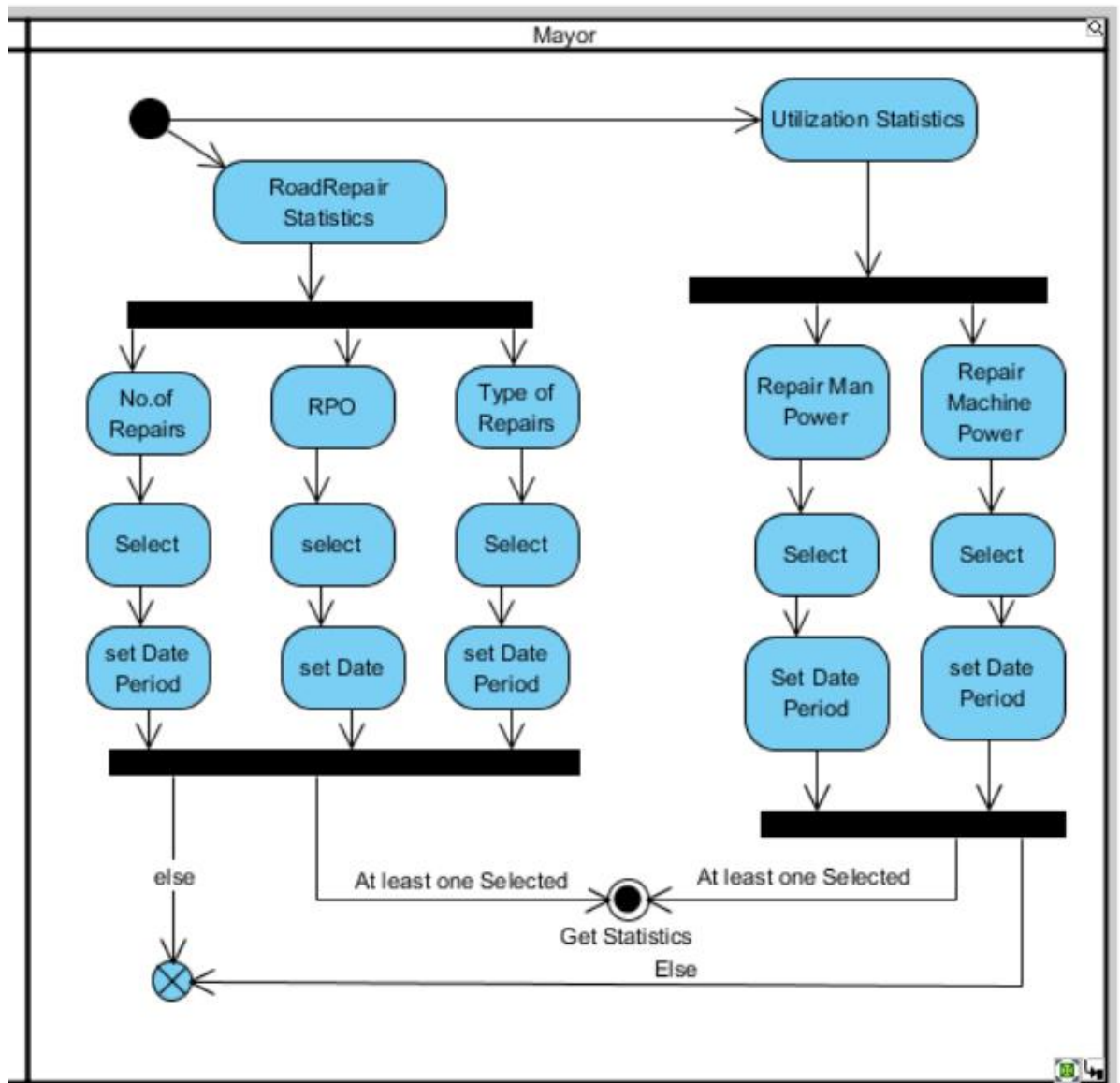
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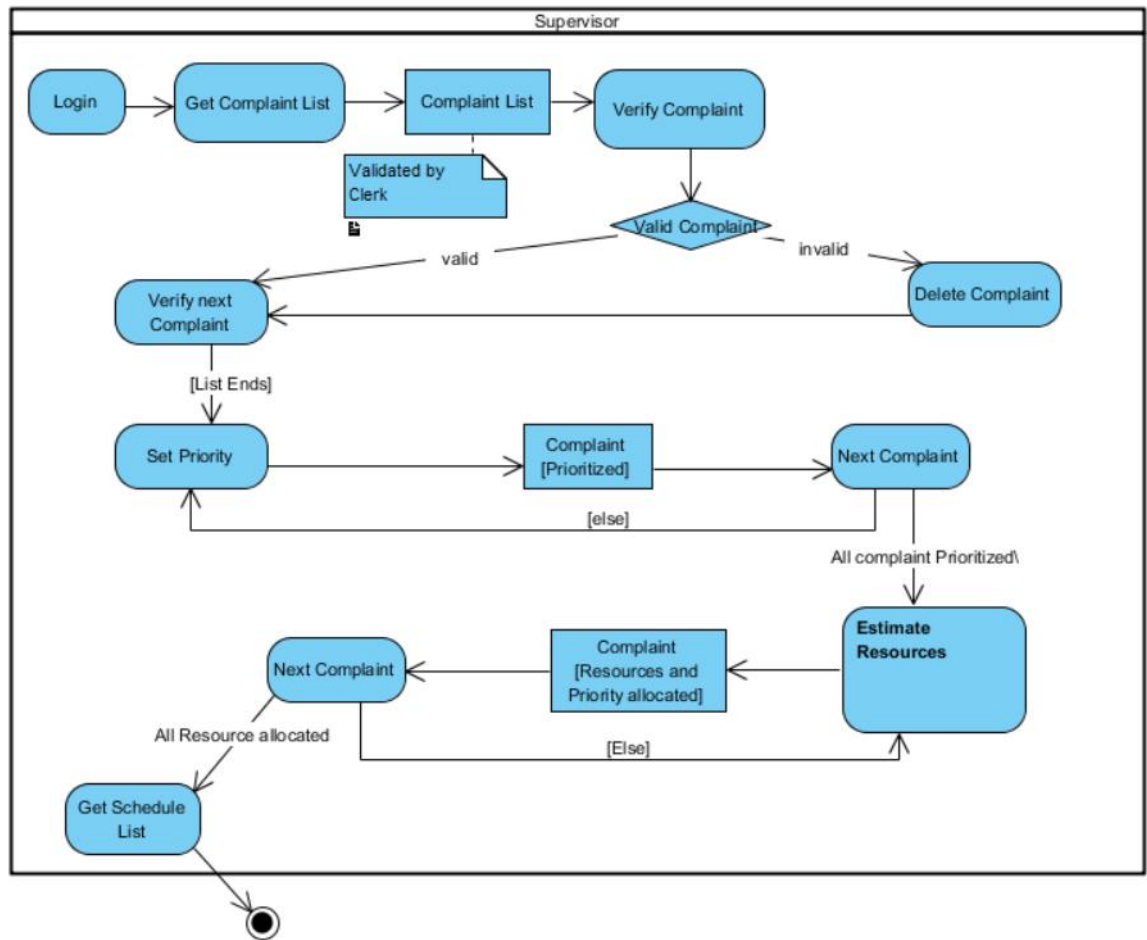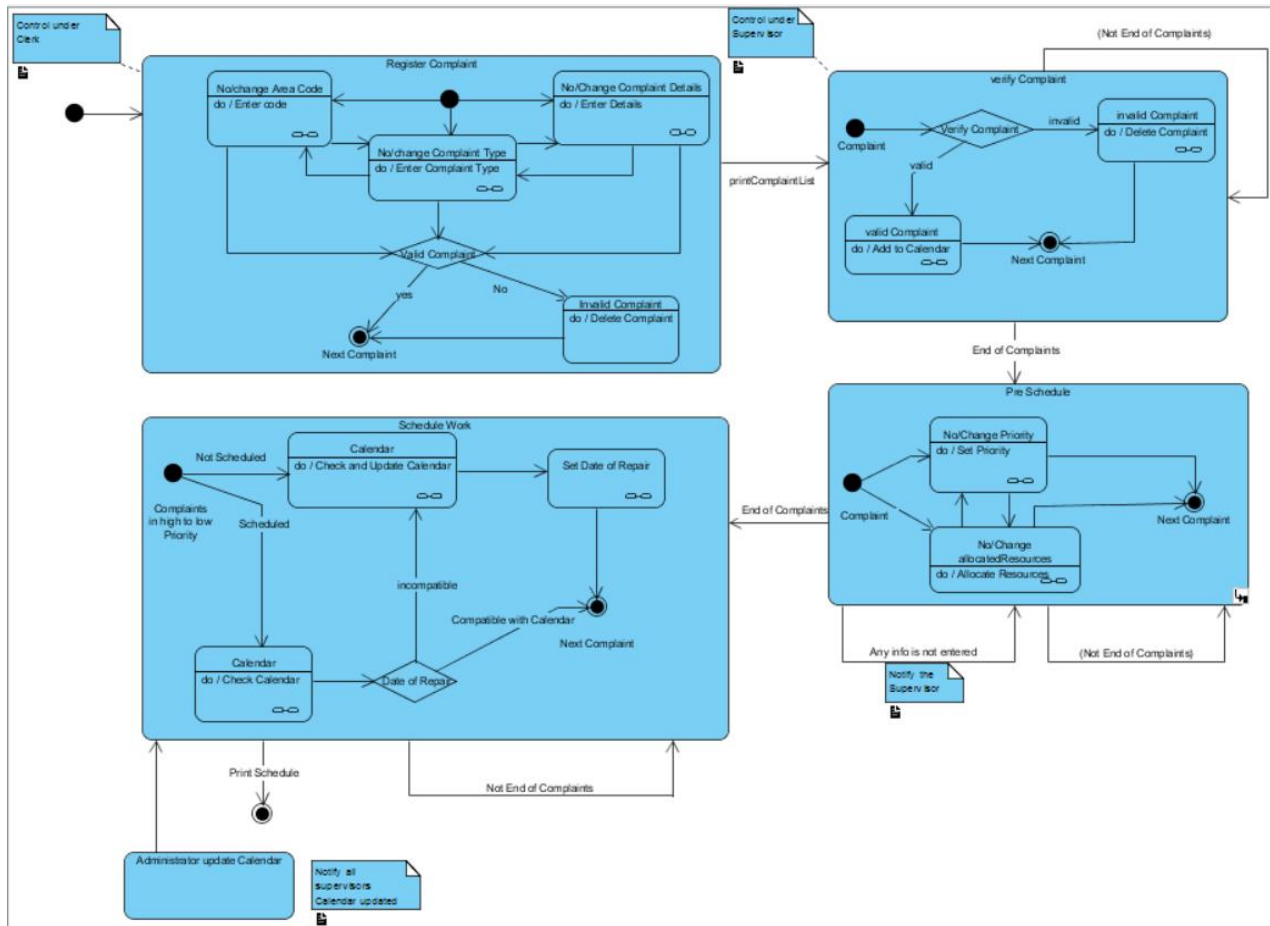
Class Diagram:

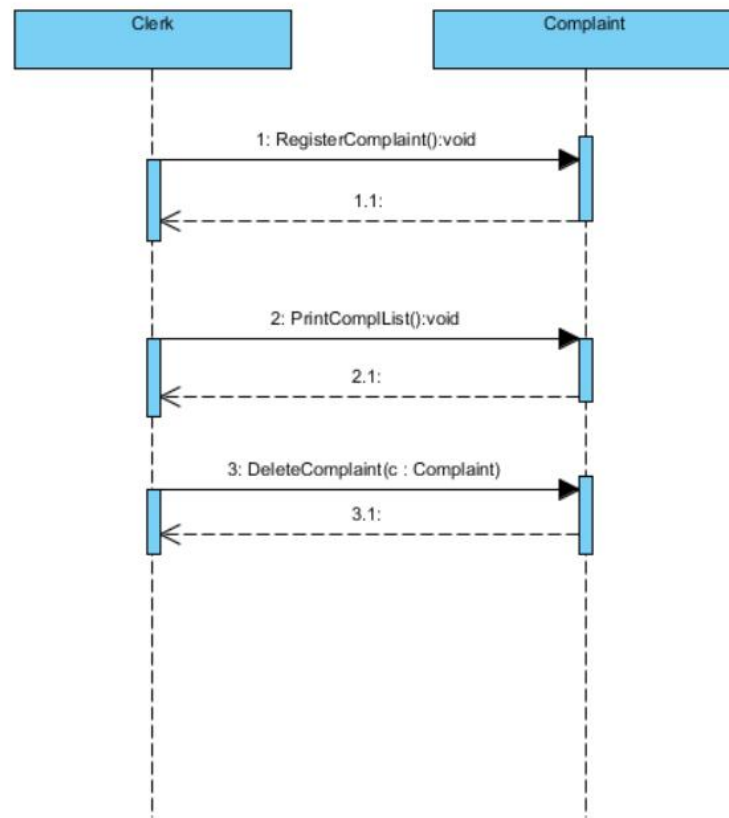Administrator Activity Diagram:
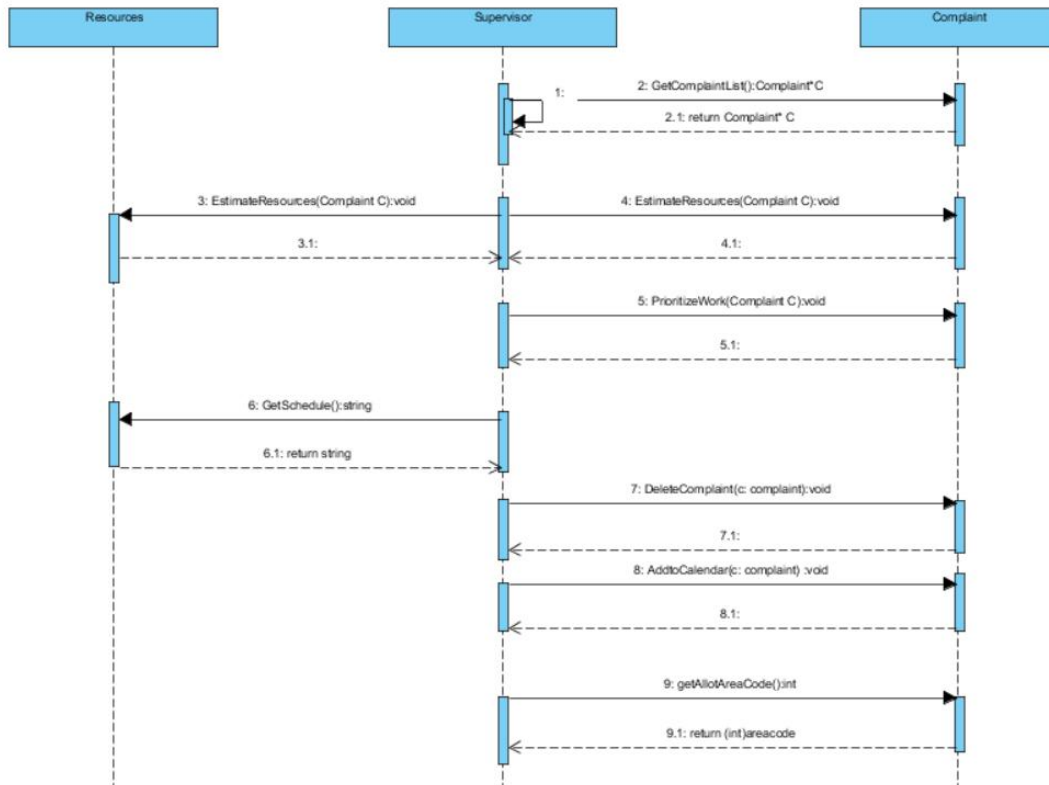
Clerk Activity Diagram:

Mayor Activity Diagram:
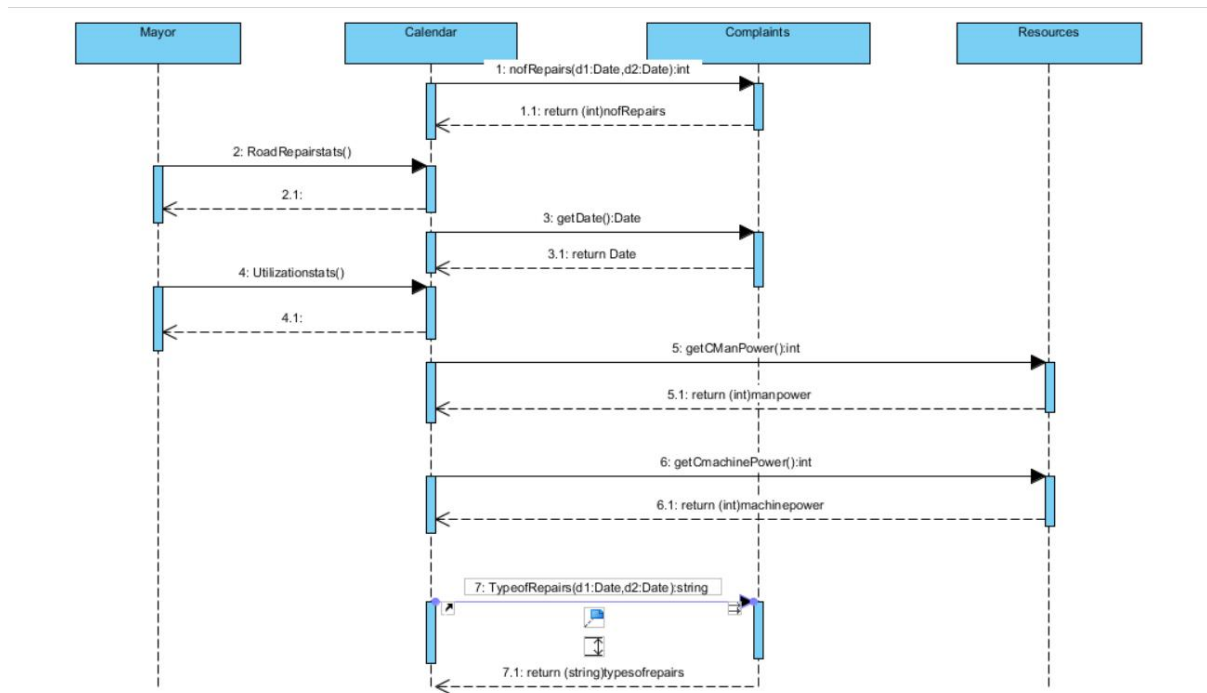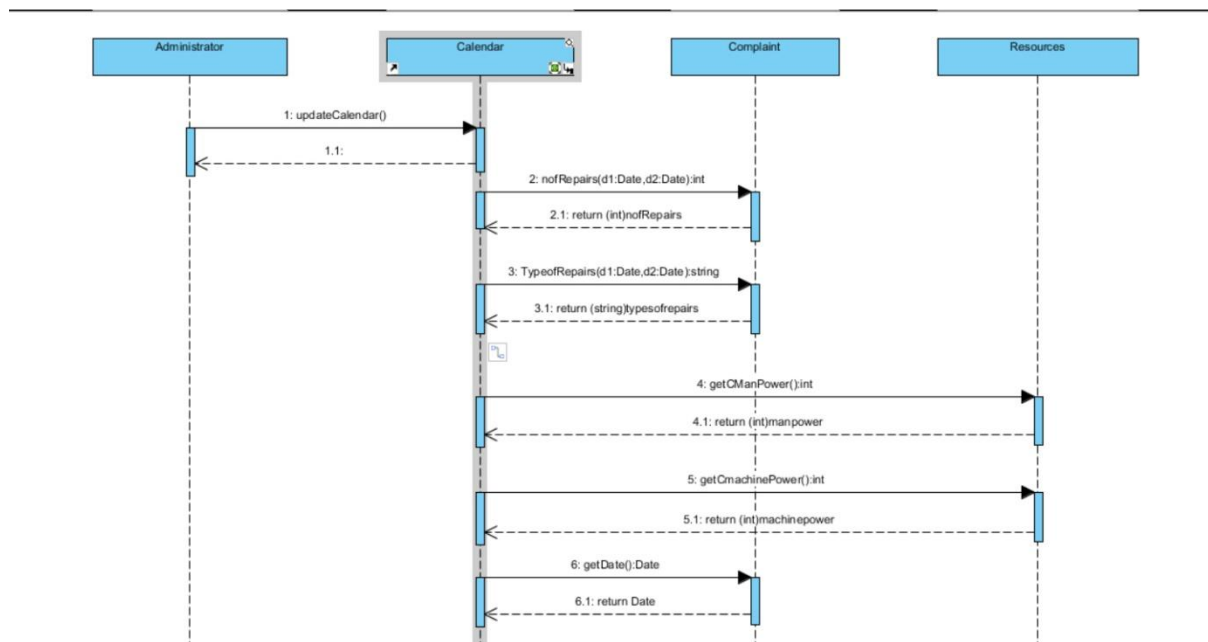
Supervisor Activity Diagram:

Statechart Diagram:

Clerk Sequence Diagram:

Resources	Supervisor	Complaint
	1:	2: GetComplaintList():Complaint* C
		2.1: return Complaint* C
3: EstimateResources(Complaint C):void		4: EstimateResources(Complaint C):void
3.1:		4.1:
	5: PrioritizeWork(Complaint C):void	
	5.1:	
6: GetSchedule():string		
6.1: return string		
	7: DeleteComplaint(c: complaint):void	
	7.1:	
	8: AddtoCalendar(c: complaint) :void	
	8.1:	
	9: getAllotAreaCode():int	
	9.1: return (int)areacode	

Supervisor Sequence Diagram:

Mayor	Calendar	Complaints	Resources

1: nofRepairs(d1:Date,d2:Date):int
1.1: return (int)nofRepairs
2: RoadRepairstats()
2.1:
3: getDate():Date
3.1: return Date
4: Utilizationstats()
4.1:
5: getCManPower():int
5.1: return (int)manpower
6: getCmachinePower():int
6.1: return (int)machinepower
7: TypeofRepairs(d1:Date,d2:Date):string
7.1: return (string)typesofrepairs

Mayor Sequence Diagram:

Administrator Sequence Diagrams:

Clerk Collaboration Diagrams:

3: nofRepairs(d1:Date,d2:Date):int
4: getDate():Date
5: TypeofRepairs(d1:Date,d2:Date):string

1: RoadRepairstats()
2: Utilizationstats()

| Mayor | | Calendar | | Complaints |

6: getCManPower():int
7: getCmachinePower():int

| Resources |

Mayor Collaboration Diagram:

1: GetComplaintList():Complaint*C

2: Estimate Resources(Complaint C):void

3: PrioritizeWork(Complaint C):void

4: DeleteComplaint(c:complaint):void

5: getAllotAreaCode():int

| Supervisor | | Complaint |

6: EstimateResources(Complaint C):void
7: GetSchedule():string

| Resources |

Supervisor Collaboration Diagram:

2: nofRepairs(d1:Date,d2:Date):int

3: TypeofRepairs(d1:Date,d2:Date):int

4: getDate():Date

1: updateCalendar()

| Administrator | | Calendar | | Complaint |

5: getCManPower():int

6: getCmachinePower():int

Resources

Administrator Collaboration Diagram: