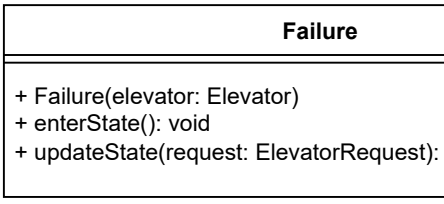
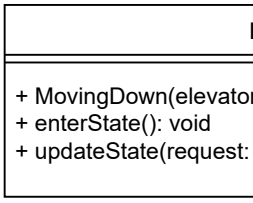
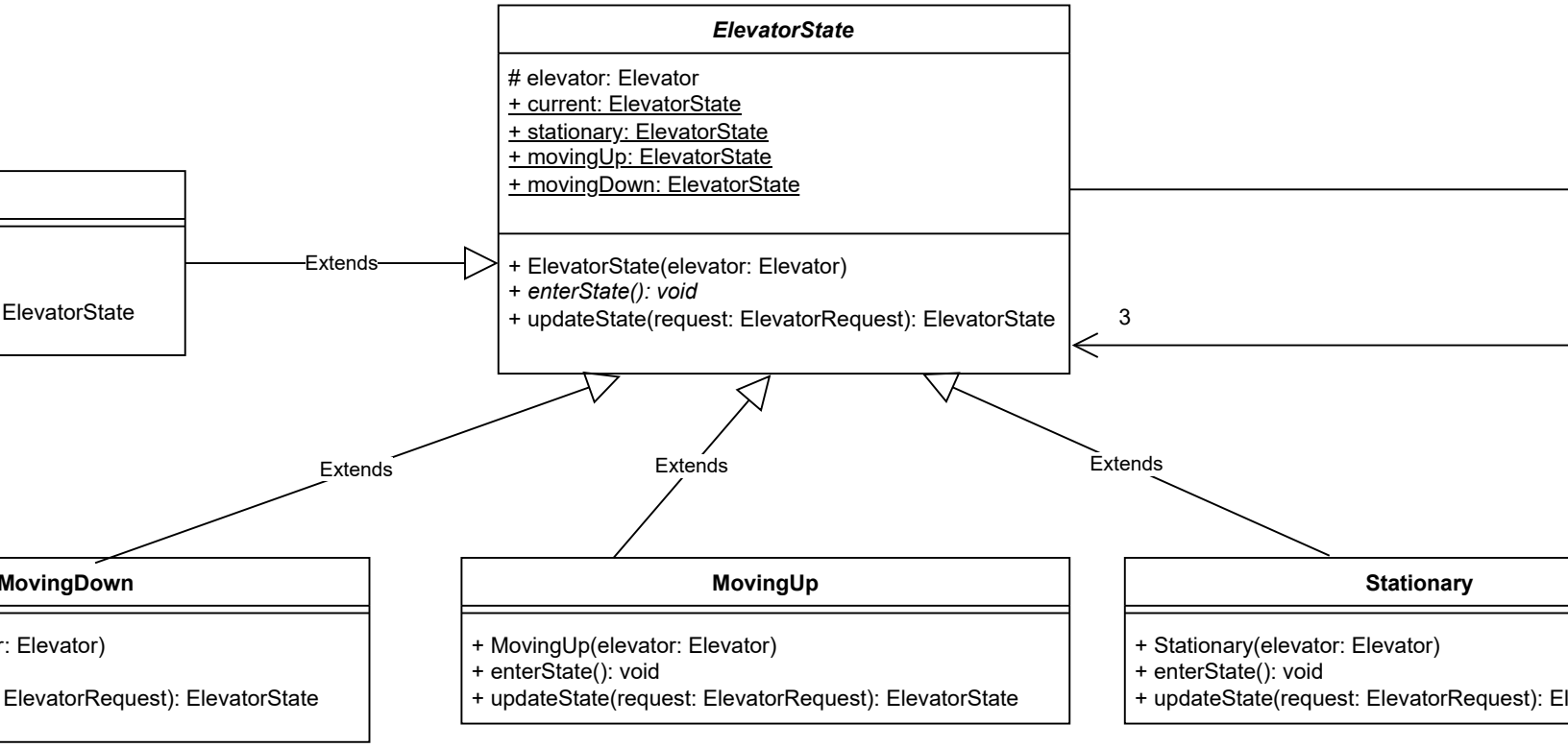
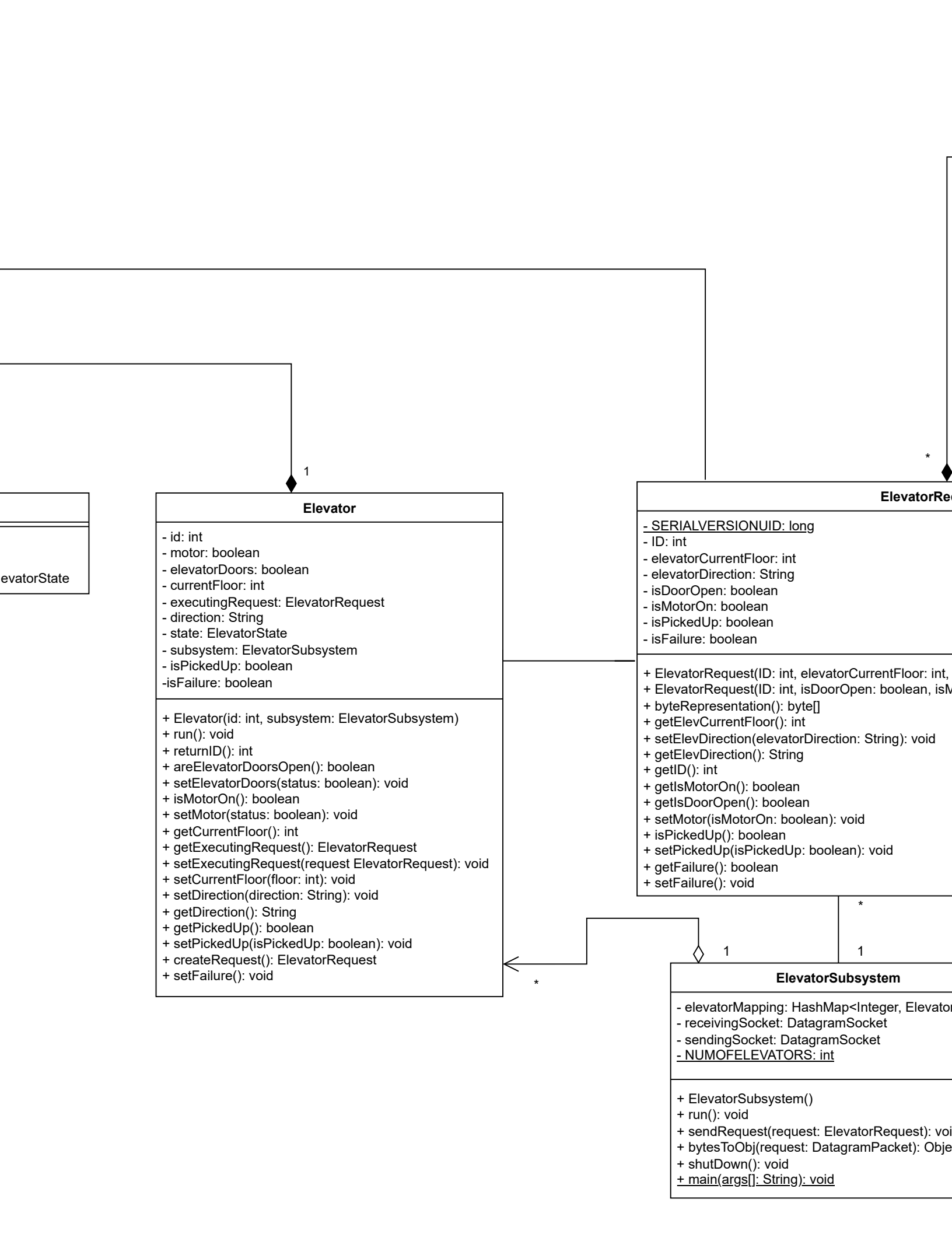

Failure
+ Failure(elevator: Elevator)
+ enterState(): void
+ updateState(request: ElevatorRequest):


+ MovingDown(elevator
+ enterState(): void
+ updateState(request:


ElevatorState
elevator: Elevator
+ current: ElevatorState
+ stationary: ElevatorState
+ movingUp: ElevatorState
+ movingDown: ElevatorState
+ ElevatorState(elevator: Elevator)
+ enterState(): void
+ updateState(request: ElevatorRequest): ElevatorState
Extends
ElevatorState
3
Extends
Extends
Extends
MovingDown
: Elevator)
ElevatorRequest): ElevatorState
MovingUp
+ MovingUp(elevator: Elevator)
+ enterState(): void
+ updateState(request: ElevatorRequest): ElevatorState
Stationary
+ Stationary(elevator: Elevator)
+ enterState(): void
+ updateState(request: ElevatorRequest): El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*
evatorState
Elevator
- id: int
- motor: boolean
- elevatorDoors: boolean
- currentFloor: int
- executingRequest: ElevatorRequest
- direction: String
- state: ElevatorState
- subsystem: ElevatorSubsystem
- isPickedUp: boolean
-isFailure: boolean
+ Elevator(id: int, subsystem: ElevatorSubsystem)
+ run(): void
+ returnID(): int
+ areElevatorDoorsOpen(): boolean
+ setElevatorDoors(status: boolean): void
+ isMotorOn(): boolean
+ setMotor(status: boolean): void
+ getCurrentFloor(): int
+ getExecutingRequest(): ElevatorRequest
+ setExecutingRequest(request ElevatorRequest): void
+ setCurrentFloor(floor: int): void
+ setDirection(direction: String): void
+ getDirection(): String
+ getPickedUp(): boolean
+ setPickedUp(isPickedUp: boolean): void
+ createRequest(): ElevatorRequest
+ setFailure(): void
ElevatorRe
- SERIALVERSIONUID: long
- ID: int
- elevatorCurrentFloor: int
- elevatorDirection: String
- isDoorOpen: boolean
- isMotorOn: boolean
- isPickedUp: boolean
- isFailure: boolean
+ ElevatorRequest(ID: int, elevatorCurrentFloor: int,
+ ElevatorRequest(ID: int, isDoorOpen: boolean, isM
+ byteRepresentation(): byte[]
+ getElevCurrentFloor(): int
+ setElevDirection(elevatorDirection: String): void
+ getElevDirection(): String
+ getID(): int
+ getIsMotorOn(): boolean
+ getIsDoorOpen(): boolean
+ setMotor(isMotorOn: boolean): void
+ isPickedUp(): boolean
+ setPickedUp(isPickedUp: boolean): void
+ getFailure(): boolean
+ setFailure(): void
*
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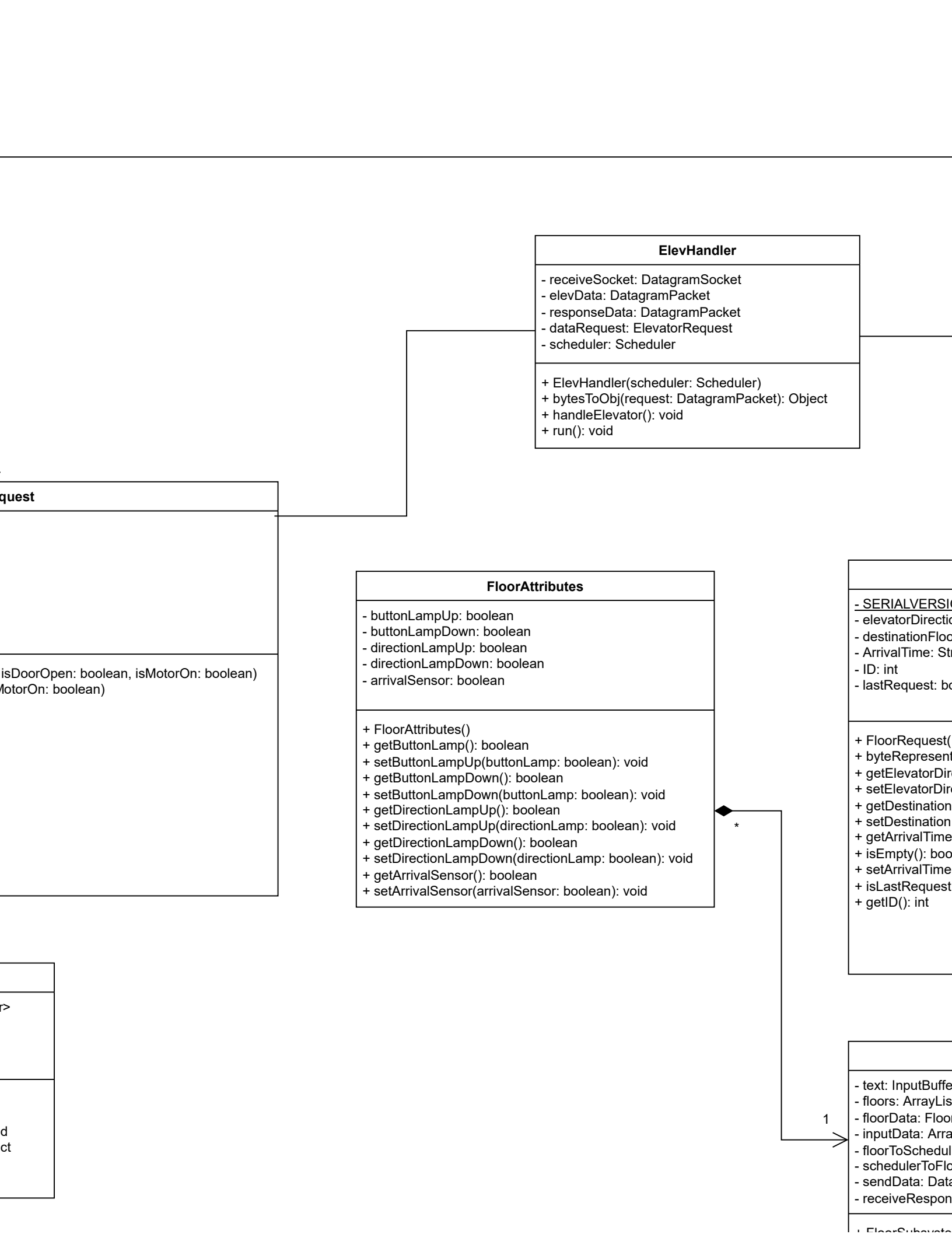
*
1
ElevatorSubsystem
- elevatorMapping: HashMap<Integer, Elevator
- receivingSocket: DatagramSocket
- sendingSocket: DatagramSocket
- NUMOFELEVATORS: int
+ ElevatorSubsystem()
+ run(): void
+ sendRequest(request: ElevatorRequest): voi
+ bytesToObj(request: DatagramPacket): Obje
+ shutDown(): void
+ main(args[]: String): void


ElevHandler
- receiveSocket: DatagramSocket
- elevData: DatagramPacket
- responseData: DatagramPacket
- dataRequest: ElevatorRequest
- scheduler: Scheduler
+ ElevHandler(scheduler: Scheduler)
+ bytesToObj(request: DatagramPacket): Object
+ handleElevator(): void
+ run(): void
quest
isDoorOpen: boolean, isMotorOn: boolean)
MotorOn: boolean)
FloorAttributes
- buttonLampUp: boolean
- buttonLampDown: boolean
- directionLampUp: boolean
- directionLampDown: boolean
- arrivalSensor: boolean
+ FloorAttributes()
+ getButtonLamp(): boolean
+ setButtonLampUp(buttonLamp: boolean): void
+ getButtonLampDown(): boolean
+ setButtonLampDown(buttonLamp: boolean): void
+ getDirectionLampUp(): boolean
+ setDirectionLampUp(directionLamp: boolean): void
+ getDirectionLampDown(): boolean
+ setDirectionLampDown(directionLamp: boolean): void
+ getArrivalSensor(): boolean
+ setArrivalSensor(arrivalSensor: boolean): void
- SERIALVERSI
- elevatorDirecti
- destinationFloo
- ArrivalTime: St
- ID: int
- lastRequest: bo
+ FloorRequest(
+ byteRepresent
+ getElevatorDir
+ setElevatorDir
+ getDestination
+ setDestination
+ getArrivalTime
+ isEmpty(): boo
+ setArrivalTime
+ isLastRequest
+ getID(): int
r>
d
ct
- text: InputBuffe
- floors: ArrayLis
- floorData: Floo
- inputData: Arra
- floorToSchedul
- schedulerToFlo
- sendData: Data
- receiveRespon
*
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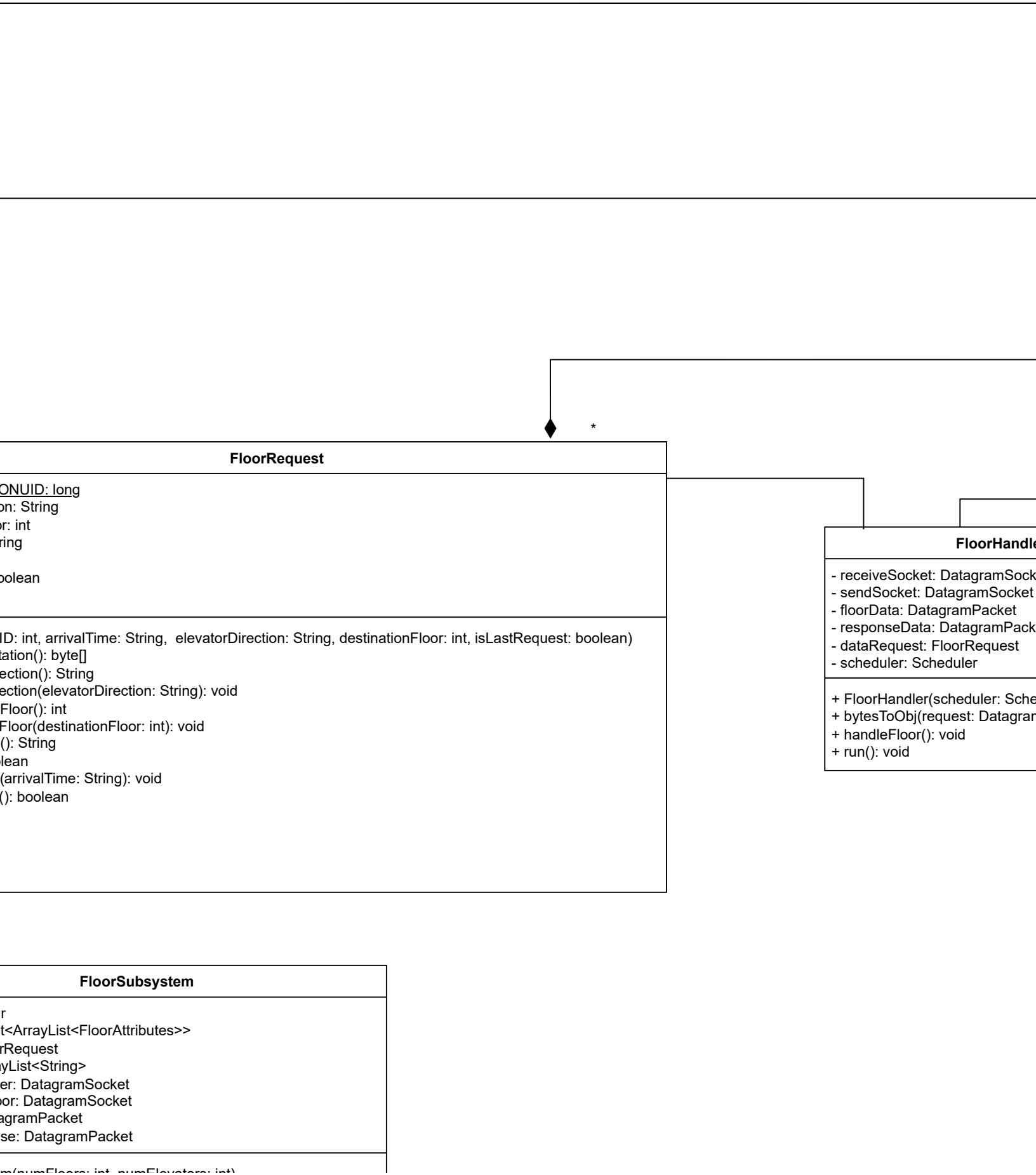
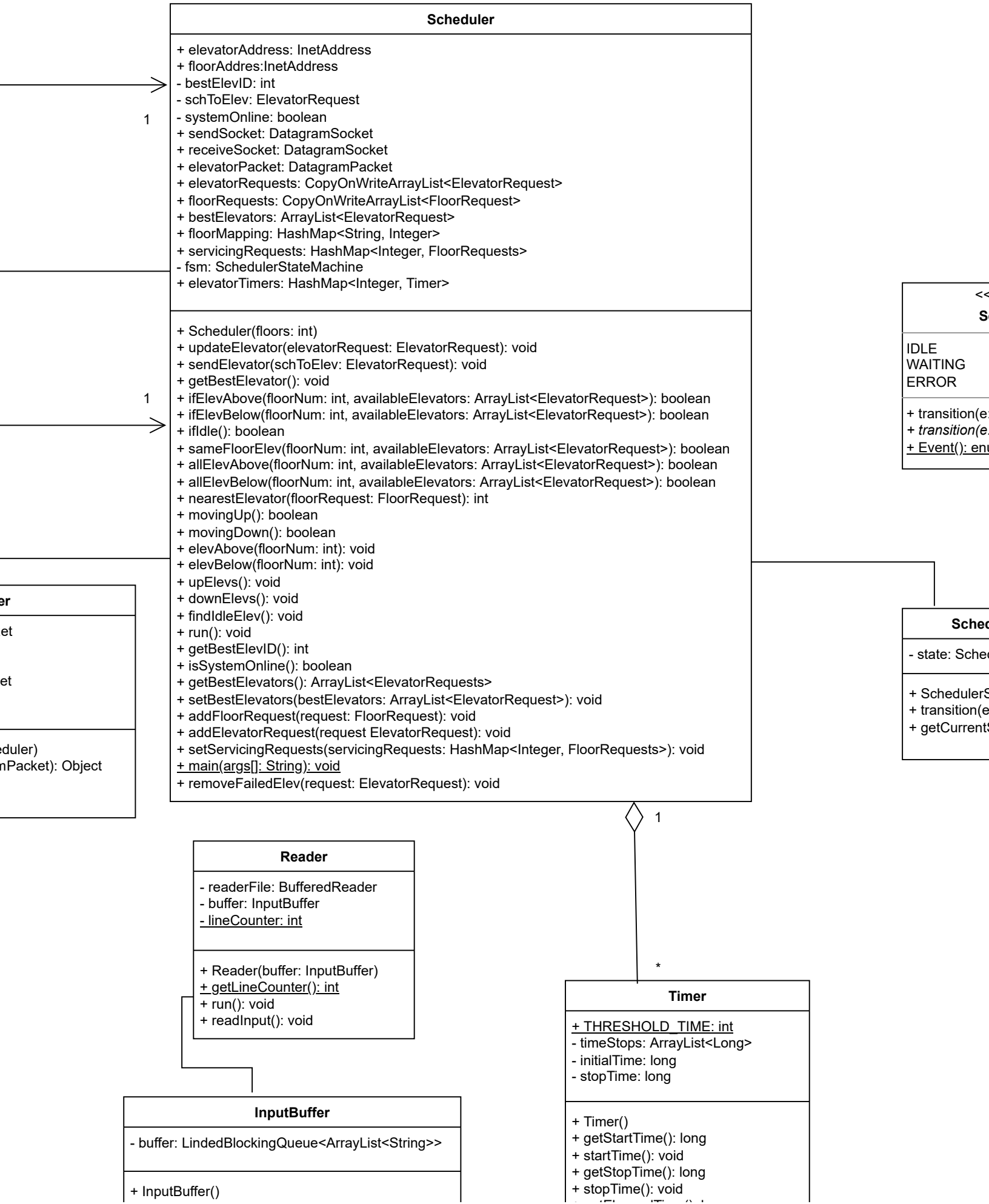

*
FloorRequest
ONUID: long
on: String
r: int
ring
oolean
ID: int, arrivalTime: String, elevatorDirection: String, destinationFloor: int, isLastRequest: boolean)
tation(): byte[]
ection(): String
ection(elevatorDirection: String): void
Floor(): int
Floor(destinationFloor: int): void
(): String
lean
(arrivalTime: String): void
(): boolean
FloorHandle
- receiveSocket: DatagramSock
- sendSocket: DatagramSocket
- floorData: DatagramPacket
- responseData: DatagramPack
- dataRequest: FloorRequest
- scheduler: Scheduler
+ FloorHandler(scheduler: Sche
+ bytesToObj(request: Datagra
+ handleFloor(): void
+ run(): void
FloorSubsystem
r
t<ArrayList<FloorAttributes>>
rRequest
yList<String>
er: DatagramSocket
or: DatagramSocket
agramPacket
se: DatagramPacket


Scheduler
+ elevatorAddress: InetAddress
+ floorAddres:InetAddress
- bestElevID: int
- schToElev: ElevatorRequest
- systemOnline: boolean
+ sendSocket: DatagramSocket
+ receiveSocket: DatagramSocket
+ elevatorPacket: DatagramPacket
+ elevatorRequests: CopyOnWriteArrayList<ElevatorRequest>
+ floorRequests: CopyOnWriteArrayList<FloorRequest>
+ bestElevators: ArrayList<ElevatorRequest>
+ floorMapping: HashMap<String, Integer>
+ servicingRequests: HashMap<Integer, FloorRequests>
- fsm: SchedulerStateMachine
+ elevatorTimers: HashMap<Integer, Timer>
+ Scheduler(floors: int)
+ updateElevator(elevatorRequest: ElevatorRequest): void
+ sendElevator(schToElev: ElevatorRequest): void
+ getBestElevator(): void
+ ifElevAbove(floorNum: int, availableElevators: ArrayList<ElevatorRequest>): boolean
+ ifElevBelow(floorNum: int, availableElevators: ArrayList<ElevatorRequest>): boolean
+ ifIdle(): boolean
+ sameFloorElev(floorNum: int, availableElevators: ArrayList<ElevatorRequest>): boolean
+ allElevAbove(floorNum: int, availableElevators: ArrayList<ElevatorRequest>): boolean
+ allElevBelow(floorNum: int, availableElevators: ArrayList<ElevatorRequest>): boolean
+ nearestElevator(floorRequest: FloorRequest): int
+ movingUp(): boolean
+ movingDown(): boolean
+ elevAbove(floorNum: int): void
+ elevBelow(floorNum: int): void
+ upElevs(): void
+ downElevs(): void
+ findIdleElev(): void
+ run(): void
+ getBestElevID(): int
+ isSystemOnline(): boolean
+ getBestElevators(): ArrayList<ElevatorRequests>
+ setBestElevators(bestElevators: ArrayList<ElevatorRequest>): void
+ addFloorRequest(request: FloorRequest): void
+ addElevatorRequest(request ElevatorRequest): void
+ setServicingRequests(servicingRequests: HashMap<Integer, FloorRequests>): void
+ main(args[]: String): void
+ removeFailedElev(request: ElevatorRequest): void
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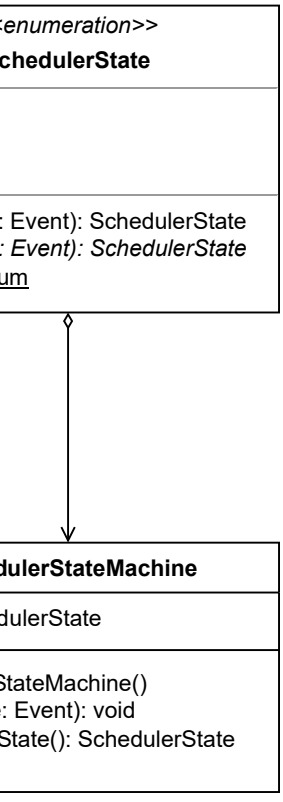
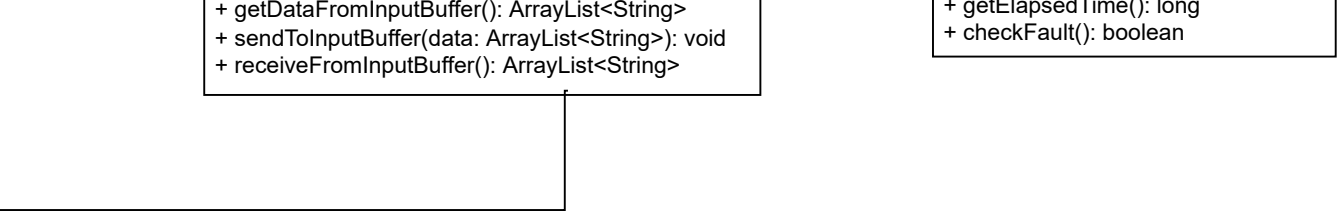
Reader
- readerFile: BufferedReader
- buffer: InputBuffer
- lineCounter: int
+ Reader(buffer: InputBuffer)
+ getLineCounter(): int
+ run(): void
+ readInput(): void
InputBuffer
- buffer: LindedBlockingQueue<ArrayList<String>>
+ InputBuffer()
Timer
+ THRESHOLD_TIME: int
- timeStops: ArrayList<Long>
- initialTime: long
- stopTime: long
+ Timer()
+ getStartTime(): long
+ startTime(): void
+ getStopTime(): long
+ stopTime(): void
IDLE
WAITING
ERROR
+ transition(e
+ transition(e
+ Event(): enu
- state: Sched
+ SchedulerS
+ transition(e
+ getCurrentS


«enumeration»
SchedulerState
: Event): SchedulerState
: Event): SchedulerState
um
dulerStateMachine
dulerState
StateMachine()
: Event): void
State(): SchedulerState

+ FloorSubsyste
+ getInputData()
+ setLamps(): vo
+ resetButtonLa
+ setDirectionalL
+ setArrivalSens
+ createNewRec
+ sendDataToSc
+ sendFloorMes
+ run(): void
+ main(args[]: St

m(numFloors: int, numElevators: int)
: ArrayList<String>
oid
mps(pickUpFloor: int): void
LampsAllFloors(direction: String, elevatorID: int): void
or(elevatorID: int, currentFloor: int, direction: String): void
quest(isLastRequest: boolean): void
cheduler(isLastRequest: boolean): void
sage(): void
tring): void


+ getDataFromInputBuffer(): ArrayList<String>
+ sendToInputBuffer(data: ArrayList<String>): void
+ receiveFromInputBuffer(): ArrayList<String>
+ getElapsedTime(): long
+ checkFault(): boolean