

| Formula ✓ | | |
|--|-----------|--|
| precondition | statement | postcondition |
| {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length} | statement | {this.persons.contains(p) = TRUE & this.floorButtons[p.getDestination()] = TRUE} |



| Composition ✓ | | |
|--|---|-------------|
| precondition | postcondition | |
| {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length} | {this.persons.contains(p) = TRUE & this.floorButtons[p.getDestination()] = TRUE} | |
| statement 1 | intermediate condition | statement 2 |
| statement1 | {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length & this.floorButtons[p.getDestination()] = TRUE} | statement2 |



Statement1

| precondition | statement | postcondition ✓ |
|--|------------------------|---|
| {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length} | p.enterElevator(this); | {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length & this.floorButtons[p.getDestination()] = TRUE} |



Statement2

| precondition | statement | postcondition ✓ |
|---|----------------------|--|
| {this.persons != null & this.persons.elements != null & this.floorButtons != null & p != null & p.getDestination() >= 0 & p.getDestination() < this.floorButtons.length & this.floorButtons[p.getDestination()] = TRUE} | this.persons.add(p); | {this.persons.contains(p) = TRUE & this.floorButtons[p.getDestination()] = TRUE} |

| Variables |
|--------------------------------|
| PRIVATE int weight |
| PARAM Person p |
| PRIVATE int old_weight |
| PRIVATE boolean old_contains |
| PRIVATE boolean blocked |
| PRIVATE ArrayList persons |
| PRIVATE Environment env |
| PRIVATE int doors |
| PRIVATE int currentFloorID |
| PRIVATE int currentHeading |
| PRIVATE boolean verbose |
| PUBLIC boolean[] floorButtons |
| PRIVATE int old_currentFloorID |

| Global Conditions |
|-------------------|
| Person p non-null |
| p.<inv> |