Simple Elevator Design

**Annotations:**

1. @Test: This annotation is used to mark a method as a test method. JUnit will execute methods annotated with @Test when running tests. (Used in the code.)
2. @BeforeEach: This annotation is used to signal that the annotated method should be executed before each test method in the current test class.
3. @AfterEach: This annotation is used to signal that the annotated method should be executed after each test method in the current test class.
4. @BeforeAll: This annotation is used to signal that the annotated method should be executed once before all test methods in the current test class.
5. @AfterAll: This annotation is used to signal that the annotated method should be executed once after all test methods in the current test class.
6. @DisplayName: This annotation is used to provide a custom display name for the test method in test reports.

**Test Cases**

**Functional Requirements:**

1. When I am on the third floor, and I push ‘5’ then the elevator should move up and I should be able to enter to 5th floor.
2. When I am on the fifth floor, and I push ‘1’ then the elevator should move up and I should be able to enter to 1st floor.
3. When the elevator is moving and I press emergency ‘Stop’ button, then the elevator should stop immediately safely.
4. When the elevator arrives at the floor, then the door should remain open (e.g., 3-5 seconds) for sufficient time and then closes.
5. When the elevator is loaded with more than the expected person/weight, then the elevator should turn on the alarm for some time and elevator should not move.

**Non-Functional Testing:**

1. When the elevator is open and If I am in between the way of closing the door, then the elevator should remain open. (**Safety Testing**)
2. When I am in the elevator and the power goes off then in this case emergency light should be activated and I should reach the destined floor.
3. When I am in the elevator and fire alarm rings, the elevator should reach the safe floor by communicating with the building security system.
4. When I press any button in the elevator, then I should see its response in acceptable time.
5. When I am in the elevator, the button functionalities should be clear to understand e.g., using Up Arrow for moving up, down Arrow for moving down, etc.
6. All the buttons in the elevator are placed within the normal range. (**Useability Testing**)
7. Emergency Stop instructions are clear. (**Useability Testing**)
8. Overweight instructions are clear. (**Useability Testing**)
9. When the elevator has been operating for a long time, then there should be no system/functional failure observed. (**Reliability Testing**)
10. When I am in the elevator and by mistake, I select the 2nd floor and then I select 4th floor which I want to move then pressing three times ‘2’ button should unselect the second floor.