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Assignment 2- Use Cases
Comp 3004
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Use Case 1: Transport passengers to requested floor

Primary Actor: Building Occupant

Scope: Building Elevator System

Level: User goal

Stakeholders and Interests:

Building Occupant: Wants efficient transport to the desired floor.

Building Management: Wants to ensure efficient and safe operation of elevators.

Precondition: Occupant is at the elevator lobby.

Success Guarantee: Occupant is transported to the desired floor.

Main Success Scenario:

1.The occupant presses the up or down button to signal their direction.

2.The system logs the request, and the button remains illuminated.

3.An elevator arrives at the lobby, and a bell rings to announce its arrival. The doors of both the elevator and the floor open.

4.The occupant steps into the elevator and selects their destination floor using the panel of buttons inside.

5.As the elevator moves, the display inside the elevator shows the current floor number. Audio announcements are synchronized with the display to verbally inform occupants of the current floor.

6.The elevator stops at the selected destination floor. The bell rings again, and the doors open.

7.Once the doors open at the destination floor, the occupant exits the elevator.

8.After the occupant exits, or when the default door time elapses, the elevator doors close.

Extensions

4,5,6,7.a The passengers can use any of the Fire alarm button or the Help button if needed inside the elevator(**use case 2,4**).

6.b. During this time, the occupant can use the “open door” button to keep the doors open longer than the default time, or press the “close door” button to close the doors sooner(**use case 3**).

4.b If the overall weight of the passenger is too great, then the control system rings the overload alarm and remains stationary until the load is reduced. (**use case 5**)

1,2,3,4,5,6,7,8c If at any point there is a power outage the elevator moves to a safe floor and asks passengers to disembark and it remains there (**use case 6**)

Use Case 2: Help Emergency

Primary Actor: Building Occupant in distress

Scope: Building Elevator System Safety Features

Level: User goal

Stakeholders and Interests:

Building Occupant in distress: wants immediate assistance.

Building Safety Service: wants to provide timely support.

Precondition: Occupant inside the elevator needs help.

Success guarantee: Occupant receives assistance.

Main success scenario:

1.Occupant presses the "Help" button.

2.System connects the occupant to building safety service.

Extensions
2.a. If no response within 5 seconds, a 911 call is placed.

Use Case 3: Door Obstacle Detection

Primary Actor: Elevator Control System

Scope: Building Elevator System Safety Features

Level: User goal

Stakeholders and Interests:

Building Occupant: wants to avoid being hit by closing doors.

Building Management: wants to prevent accidents.

Precondition: An obstacle is detected by the door sensor.

Success guarantee: Doors reopen to prevent injury.

Main success scenario:

1.Light sensor detects an obstacle.

2.System stops the door from closing and reopens it.

Extensions
2.a. If the obstacle persists, a warning is issued.

Use Case 4: Fire Alarm Response

Primary Actor: Elevator Control System

Scope: Building Elevator System Safety Features

Level: User goal

Stakeholders and Interests:

Building Occupants: want to be safely evacuated in case of fire.

Building Management: wants to ensure safety protocols are followed.

Precondition: Fire alarm signal is received.

Success guarantee: Elevators move to a safe floor.

Main success scenario:

1.Fire alarm signal is received.

2.System directs all elevators to the predetermined safe floor.

3.Passengers are informed to disembark at the safe floor.

Use Case 5: Overload Detection

Primary Actor: Elevator Control System

Scope: Building Elevator System Safety Features

Level: User goal

Stakeholders and Interests:

Building Occupant: wants to travel safely without exceeding elevator capacity.

Building Management: wants to maintain elevator functionality and safety.

Precondition: Sensors detect weight exceeding the elevator's capacity.

Success guarantee: Overload is addressed before the elevator moves.

Main success scenario:

1.Overload sensors detect excess weight.

2.Elevator control system activates an overload alarm.

3.System informs passengers to reduce load via audio and text message.

4.Elevator remains stationary until the load is reduced to a safe level.

Use Case 6: Power Outage Handling

Primary Actor: Elevator Control System

Scope: Building Elevator System Safety Features

Level: User goal

Stakeholders and Interests:

Building Occupant: wants to be informed and evacuated safely during a power outage.

Building Management: wants to ensure passenger safety and system recovery.

Precondition: Power outage is detected.

Success guarantee: Passengers are safely evacuated to a safe floor.

Main success scenario:

1.Power outage signal is received.

2.Elevator control system activates power outage protocol.

3.System informs passengers of the outage and the procedure via audio and text message.

4.Elevators are moved to the nearest safe floor using battery backup power.

5.Passengers are asked to disembark.