



SOFTWARE VALIDATION

Elevator System

Group 5

Author: 龚嘉礼

目录

System Architecture.....	2
T1: Unit Test.....	2
T1.1 Outside Button.....	2
T1.2 Inside Button — left.....	3
T1.3 Inside Button -- right.....	4
T1.4 Open/Close Button	5
T2: Integration Test.....	6
T2.1: InsidePanel , OutsidePanel and Open/close Button Integration	6
T3: Functional Test.....	6
T3.1: Use Case ‘Elevator Stays’	6
T3.2: Use Case “One Elevator runs”	8
T3.3: Use Case “Both Elevators Run”	12

System Architecture

The system architecture is shown below:

T1: Unit Test

T1.1 Outside Button

% Button pushed function: floor2up

function floor2upPushed(app, event)

app.request(2)=1;

if app.flagrunning==0

app.dummy.app.flagrunning=1;

Tcover 1.1.1

app.dummy.runelevs;

end

end

% Button pushed function: floor3down

function floor3downButtonPushed(app, event)

app.request(3)=1;

if app.flagrunning==0

Tcover1.1.2

app.dummy.app.flagrunning=1;

app.dummy.runelevs;

end

end

% Button pushed function: floor2down

function floor2downButtonPushed(app, event)

app.request(2)=1;

if app.flagrunning==0

Tcover1.1.3

app.dummy.app.flagrunning=1;

app.dummy.runelevs;

```

    end
end

% Button pushed function: floor1up
function floor1upButtonPushed(app, event)

    app.request(1)=1;

    if app.flagrunning==0

        app.dummy.app.flagrunning=1;

        app.dummy.runelevs;

    end
end

```

Tcover 1.1.4

- Coverage Criteria: Statement coverage
- Test case

	Test Case T1.1
Coverage Item	Tcover1.1.1, Tcover1.1.2, Tcover1.1.3, Tcover1.1.4
Input	floor 2 press up, floor 3 press down, floor 2 press down, right elevator press 2, floor 1 press up, floor 3 press down, floor 1 press up.
State	left elevator: 1 -> 2 -> 3 -> 2 ->(right 1-> 2)-> 1 -> 3 -> 1
Expected Output	left elevator: 1 -> 2 -> 3 -> 2 ->(right 1-> 2)-> 1 -> 3 -> 1

- Test coverage: 1/1=100%
- Test result: 1 passed

T1.2 Inside Button — left

```

function inside3rButtonPushed(app, event)

    app.dummy.app.request(3)=1;

    if app.dummy.app.flagrunning==0

        app.dummy.app.flagrunning=1;

        app.dummy.runelevs;

    end
end

```

Tcover 1.2.1

% Button pushed function: inside2r

function inside2rButtonPushed(app, event)

app.dummy.app.requestr(2)=1;

if app.dummy.app.flagrunning==0

Tcover 1.2.2

app.dummy.app.flagrunning=1;

app.dummy.runelevs;

end

end

% Button pushed function: inside1r

function inside1rButtonPushed(app, event)

app.dummy.app.requestr(1)=1;

if app.dummy.app.flagrunning==0

Tcover 1.2.3

app.dummy.app.flagrunning=1;

app.dummy.runelevs;

end

end

- Coverage Criteria: Statement coverage
- Test case

	Test Case T1.2
Coverage Item	Tcover1.2.1, Tcover1.2.2, Tcover1.2.3
Input	press left elevator inside button: 2,3,2,1,3,1
State	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
Expected Output	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1

- Test coverage: 1/1=100%
- Test result: 1 passed

T1.3 Inside Button -- right

The code for the other inside panel is similar, so I omitted it. The corresponding Tcover number is 1.3.1, 1.3.2, 1.3.3.

- Coverage Criteria: Statement coverage
- Test case

	Test Case T1.3
Coverage Item	Tcover1.3.1, Tcover1.3.2, Tcover1.3.3
Input	press right elevator inside button: 2,3,2,1,3,1
State	right elevator: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
Expected Output	right elevator: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1

- Test coverage: 1/1=100%
- Test result: 1 passed

T1.4 Open/Close Button

% Button pushed function: OpenButtonr

```
function OpenButtonrPushed(app, event)    Tcover1.4.1
    app.dummy.openoptionr;
end
```

% Button pushed function: CloseButtonr

```
function CloseButtonrPushed(app, event)    Tcover1.4.2
    app.dummy.closedoorr;
end
```

The code for the other inside panel is similar, so I omitted it.

- Coverage Criteria: Statement coverage
- Test case

	Test Case T1.4
Coverage Item	Tcover1.4.1, Tcover1.4.2
Input	left elevator press inside button open and close, right elevator press inside button open and close.
State	left: close -> open -> close, right: close -> open -> close
Expected Output	left: close -> open -> close, right: close -> open -> close

- Test coverage: 1/1=100%

- Test result: 1 passed

T2: Integration Test

T2.1: InsidePanel , OutsidePanel and Open/close Button Integration

- Coverage Criteria: Statement coverage
- Test case

	Test Case T3.1
Input	right elevator inside button: 2,3; left elevator inside button 2, open, close; outside button: 1
State	left, right: 1,1 -> 1,2 -> 1,3 -> 2,3 ->(left door open->close) -> 1,3
Expected Output	Left, right: 1,1 -> 1,2 -> 1,3 -> 2,3 ->(left door open->close) -> 1,3

- Test coverage: 1/1=100%
- Test result: 1 passed

T3: Functional Test

T3.1: Use Case 'Elevator Stays'

if (dummy.app.request(1)==1 || dummy.app.requestl(1)==1) & dummy.app.floor1imgl.ImageSource == '1.png'

 opendoorl(dummy);

 closedoorl(dummy);

 dummy.app.request(1)=0;

Tcover 3.1.1

 dummy.app.requestl(1)=0;

elseif (dummy.app.request(1)==1 || dummy.app.requestr(1)==1) & dummy.app.floor1imgr.ImageSource == '1.png'

 opendoorr(dummy);

 closedoorr(dummy);

Tcover 3.1.2

 dummy.app.request(1)=0;

 dummy.app.requestr(1)=0;

elseif (dummy.app.request(2)==1 || dummy.app.requestl(2)==1) & dummy.app.floor1imgl.ImageSource == '2.png'

 opendoorl(dummy);

```

        closedoorl(dummy);
        dummy.app.request(2)=0;
        dummy.app.requestl(2)=0;

        elseif (dummy.app.request(2)==1 || dummy.app.requestr(2)==1) &
dummy.app.floor1imgr.ImageSource == '2.png'

        opendoorr(dummy);
        closedoorr(dummy);
        dummy.app.request(2)=0;
        dummy.app.requestr(2)=0;

        elseif (dummy.app.request(3)==1 || dummy.app.requestl(3)==1) &
dummy.app.floor1imgl.ImageSource == '3.png'

        opendoorl(dummy);
        closedoorl(dummy);
        dummy.app.request(3)=0;
        dummy.app.requestl(3)=0;

        elseif (dummy.app.request(3)==1 || dummy.app.requestr(3)==1) &
dummy.app.floor1imgr.ImageSource == '3.png'

        opendoorr(dummy);
        closedoorr(dummy);
        dummy.app.request(3)=0;
        dummy.app.requestr(3)=0;

%       end

```

Tcover3.1.3

Tcover3.1.4

Tcover3.1.5

Tcover3.1.6

- Coverage Criteria: Branch coverage
- Test case

	Test Case T1.2
Coverage Item	Tcover3.1.1 Tcover3.1.3 Tcover3.1.5
Input	press left elevator inside button: 2,3,2,1,3,1
State	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
Expected Output	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
	Test Case T1.3
Coverage Item	Tcover3.1.2 Tcover3.1.4 Tcover3.1.6
Input	press right elevator inside button: 2,3,2,1,3,1

State	right: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
Expected Output	right: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1

- Test coverage: 100%
- Test result: 2 passed

T3.2: Use Case “One Elevator runs”

%% only outside %%%

```
elseif sum(dummy.app.requestr)==0 & sum(dummy.app.requestl)==0 &
sum(dummy.app.request)~=0
```

```
    if dummy.app.floor1imgl.ImageSource == '1.png'
```

```
        if dummy.app.request(2)==1
```

```
            gotofloor2l(dummy);
```

Tcover3.2.1

```
            dummy.app.request(2)=0;
```

```
        elseif dummy.app.request(3)==1
```

```
            gotofloor3l(dummy);
```

Tcover3.2.2

```
            dummy.app.request(3)=0;
```

```
        end
```

```
    elseif dummy.app.floor1imgl.ImageSource == '2.png'
```

```
        if dummy.app.request(1)==1
```

```
            gotofloor1l(dummy);
```

Tcover3.2.3

```
            dummy.app.request(1)=0;
```

```
        elseif dummy.app.request(3)==1
```

```
            gotofloor3l(dummy);
```

Tcover3.2.3

```
            dummy.app.request(3)=0;
```

```
        end
```

```
    elseif dummy.app.floor1imgl.ImageSource == '3.png'
```

```
        if dummy.app.request(2)==1
```

```
            gotofloor2l(dummy);
```

```
            dummy.app.request(2)=0;
```

Tcover3.2.4

```
        elseif dummy.app.request(1)==1
```

```

        gotofloor1l(dummy);
        dummy.app.request(1)=0;
    end
end
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% only left %%%%%%%%%%%%%%
elseif sum(dummy.app.requestr)==0 & sum(dummy.app.requestl)~=0
    if dummy.app.floor1imgl.ImageSource == '1.png'
        if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
            gotofloor2l(dummy);
            dummy.app.requestl(2)=0;
            dummy.app.request(2)=0;
        elseif dummy.app.requestl(3)==1 || dummy.app.request(3)==1
            dummy.app.requestl(3)=0;
            dummy.app.request(3)=0;
            gotofloor3l(dummy);
            dummy.app.requestl(3)=0;
            dummy.app.request(3)=0;
        end
    elseif dummy.app.floor1imgl.ImageSource == '2.png'
        if dummy.app.requestl(1)==1 || dummy.app.request(1)==1
            gotofloor1l(dummy);
            dummy.app.requestl(1)=0;
            dummy.app.request(1)=0;
        elseif dummy.app.requestl(3)==1 || dummy.app.request(3)==1
            gotofloor3l(dummy);
            dummy.app.requestl(3)=0;
            dummy.app.request(3)=0;
        end
    elseif dummy.app.floor1imgl.ImageSource == '3.png'

```

Tcover3.2.5

Tcover3.2.6

Tcover3.2.7

Tcover3.2.8

Tcover3.2.9

```

if dummy.app.request(2)==1 || dummy.app.requestl(2)==1
    gotofloor2l(dummy);
    dummy.app.requestl(2)=0;
    dummy.app.request(2)=0;
elseif dummy.app.request(1)==1 || dummy.app.requestl(1)==1
    gotofloor1l(dummy);
    dummy.app.requestl(1)=0;
    dummy.app.request(1)=0;
end
end

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% only right %%%%%%%%%%%%%%
elseif sum(dummy.app.requestl)==0 & sum(dummy.app.requestr)~=0
    if dummy.app.floor1imgr.ImageSource == '1.png'
        if dummy.app.requestr(2)==1 || dummy.app.request(2)==1
            gotofloor2r(dummy);
            dummy.app.requestr(2)=0;
            dummy.app.request(2)=0;
        elseif dummy.app.requestr(3)==1 || dummy.app.request(3)==1
            gotofloor3r(dummy);
            dummy.app.requestr(3)=0;
            dummy.app.request(3)=0;
        end
    elseif dummy.app.floor1imgr.ImageSource == '2.png'
        if dummy.app.requestr(1)==1 || dummy.app.request(1)==1
            gotofloor1r(dummy);
            dummy.app.requestr(1)=0;
            dummy.app.request(1)=0;
        elseif dummy.app.requestr(3)==1 || dummy.app.request(3)==1
            gotofloor3r(dummy);

```

```

dummy.app.request(3)=0;
dummy.app.request(3)=0;
end
elseif dummy.app.floor1imgr.ImageSource == '3.png'
if dummy.app.request(2)==1 || dummy.app.request(2)==1
gotofloor2r(dummy);
dummy.app.request(2)=0;
dummy.app.request(2)=0;
elseif dummy.app.request(1)==1 || dummy.app.request(1)==1
gotofloor1r(dummy);
dummy.app.request(1)=0;
dummy.app.request(1)=0;
end
end
end

```

- Coverage Criteria: Branch coverage
- Test case

	Test Case T1.1
Coverage Item	Tcover3.2.1 Tcover3.2.2 Tcover3.2.3 Tcover3.2.4 Tcover3.2.5
Input	floor 2 press up, floor 3 press down, floor 2 press down, right elevator press 2, floor 1 press up, floor 3 press down, floor 1 press up.
State	left elevator: 1 -> 2 -> 3 -> 2 ->(right 1-> 2)-> 1 -> 3 -> 1
Expected Output	left elevator: 1 -> 2 -> 3 -> 2 ->(right 1-> 2)-> 1 -> 3 -> 1
	Test Case T1.2
Coverage Item	Tcover3.2.6 Tcover3.2.7 Tcover3.2.8 Tcover3.2.9 Tcover3.2.10 Tcover3.2.11
Input	press left elevator inside button: 2,3,2,1,3,1
State	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
Expected Output	left: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
	Test Case T1.3
Coverage Item	Tcover3.2.12 Tcover3.2.13 Tcover3.2.14 Tcover3.2.15 Tcover3.2.16 Tcover3.2.17
Input	press right elevator inside button: 2,3,2,1,3,1
State	right: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1

Expected Output	right: 1 -> 2 -> 3 -> 2 -> 2 -> 1 -> 3 -> 3 -> 1 -> 1
-----------------	---

- Test coverage: 100%
- Test result: 3 passed

T3.3: Use Case “Both Elevators Run”

%%%%%%%%%% both up %%%%%%%%%%

```
if dummy.app.floor1imgl.ImageSource == '1.png' & dummy.app.floor1imgr.ImageSource ==
'1.png' & (dummy.app.requestr(2)==1 || dummy.app.requestr(3)==1) &(dummy.app.requestl(2)==1 ||
dummy.app.request(2)==1 || dummy.app.requestl(3)==1 || dummy.app.request(3)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panelr.elevimgr.Position(2),182);
```

```
    atfloor2l(dummy);
```

```
    if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
```

```
        opendoorl(dummy);closedoorl(dummy); Tcover3.3.1
```

```
        dummy.app.requestl(2)=0;dummy.app.request(2)=0;
```

```
    end
```

```
    atfloor2r(dummy);
```

```
    if dummy.app.requestr(2)==1 Tcover3.3.2
```

```
        opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(2)=0;
```

```
    end
```

```
    elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource
== '2.png' & dummy.app.requestr(3)==1 & (dummy.app.requestl(3)==1 || dummy.app.request(3)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),321,dummy.panelr.elevimgr.Position(2),338); %2-
>3 Tcover3.3.3
```

```
    atfloor3l(dummy);
```

```
    opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(3)=0;dummy.app.request(3)=0;
```

```
    atfloor3r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(3)=0;
```

```
    elseif dummy.app.floor1imgl.ImageSource == '1.png' & dummy.app.floor1imgr.ImageSource
== '2.png' & dummy.app.requestr(3)==1 &(dummy.app.requestl(2)==1 || dummy.app.request(2)==1 ||
dummy.app.requestl(3)==1 || dummy.app.request(3)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panelr.elevimgr.Position(2),338);
```

```

atfloor2l(dummy);

if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
    opendoorl(dummy);closedoorl(dummy); Tcover3.3.4
    dummy.app.requestl(2)=0;dummy.app.request(2)=0;
end

atfloor3r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(3)=0;

elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgl.ImageSource
== '1.png' & (dummy.app.requestr(2)==1 || dummy.app.requestr(3)==1) &(dummy.app.requestl(3)==1
|| dummy.app.request(3)==1)

moveboth(dummy,dummy.panell.elevimgl.Position(2),321,dummy.panelr.elevimgl.Position(2),182);

atfloor3l(dummy);
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(3)=0;dummy.app.request(3)=0;

atfloor2r(dummy);

if dummy.app.requestr(2)==1 Tcover3.3.5
    opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(2)=0;
end

```

- Coverage Criteria: Branch coverage
- Test case

	Test Case T2.1
Coverage Item	Tcover3.3.1 Tcover3.3.2 Tcover3.3.3 Tcover3.3.4 Tcover3.3.5
Input	left, right elevator inside button press: 2,2; 3,3; 1,2; 3,3; 2,1; 3,3
State	left, right: 1,1 -> 2,2 -> 3,3 -> 1,2 -> 3,3 -> 2,1 -> 3,3
Expected Output	left, right: 1,1 -> 2,2 -> 3,3 -> 1,2 -> 3,3 -> 2,1 -> 3,3

- Test coverage: 1/1=100%
- Test result: 1 passed

%%%%%%%%%% both down %%%%%%%%%%

```
elseif dummy.app.floor1imgl.ImageSource == '3.png' & dummy.app.floor1imgr.ImageSource
== '3.png' & (dummy.app.requeststr(2)==1 || dummy.app.requeststr(1)==1) &(dummy.app.requestl(2)==1
|| dummy.app.request(2)==1 || dummy.app.requestl(1)==1 || dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panelr.elevimgr.Position(2),182);
```

```
atfloor2l(dummy);
```

```
if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
```

```
    opendoorl(dummy);closedoorl(dummy); Tcover3.3.6
```

```
    dummy.app.requestl(2)=0;dummy.app.request(2)=0;
```

```
end
```

```
atfloor2r(dummy);
```

```
if dummy.app.requeststr(2)==1 Tcover3.3.7
```

```
    opendoorr(dummy);closedoorr(dummy);dummy.app.requeststr(2)=0;
```

```
end
```

```
dummy.app.floor1imgl.ImageSource
```

```
elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource
== '3.png' & (dummy.app.requeststr(2)==1 || dummy.app.requeststr(1)==1) &(dummy.app.requestl(1)==1
|| dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),10,dummy.panelr.elevimgr.Position(2),182);
```

```
atfloor1l(dummy);
```

```
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(1)=0;dummy.app.request(1)=0;
```

```
atfloor2r(dummy);
```

```
if dummy.app.requeststr(2)==1 Tcover3.3.8
```

```
    opendoorr(dummy);closedoorr(dummy);dummy.app.requeststr(2)=0;
```

```
end
```

```
elseif dummy.app.floor1imgl.ImageSource == '3.png' & dummy.app.floor1imgr.ImageSource
== '2.png' & dummy.app.requeststr(1)==1 & (dummy.app.requestl(2)==1 || dummy.app.request(2)==1 ||
dummy.app.requestl(1)==1 || dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panelr.elevimgr.Position(2),27);
```

```
atfloor2l(dummy);
```

```

if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
    opendoorl(dummy);closedoorl(dummy);
    dummy.app.requestl(2)=0;dummy.app.request(2)=0;
end

atfloor1r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(1)=0;

elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource
== '2.png' & dummy.app.requestr(1)==1 & (dummy.app.requestl(1)==1 || dummy.app.request(1)==1)

```

Tcover3.3.10

```

moveboth(dummy,dummy.panell.elevimgl.Position(2),10,dummy.panellr.elevimgl.Position(2),27);

atfloor1l(dummy);
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(1)=0;dummy.app.request(1)=0;

atfloor1r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(1)=0;

```

- Coverage Criteria: Branch coverage
- Test case

	Test Case T2.2
Coverage Item	Tcover3.3.6 Tcover3.3.7 Tcover3.3.8 Tcover3.3.9 Tcover3.3.10
Input	left, right elevator inside button press: 3,3; 2,2; 1,1; 2,3; 1,2; 3,2; 2,1.
State	left, right: 1,1 -> 3,3 -> 2,2 -> 1,1 -> 2,3 -> 1,2 -> 3,2 -> 2,1
Expected Output	left, right: 1,1 -> 3,3 -> 2,2 -> 1,1 -> 2,3 -> 1,2 -> 3,2 -> 2,1

- Test coverage: 1/1=100%
- Test result: 1 passed

%%%%%%%%%% left up right down %%%%%%%%%%

```

elseif dummy.app.floor1imgl.ImageSource == '1.png' & dummy.app.floor1imgr.ImageSource
== '3.png' & (dummy.app.requestr(2)==1 || dummy.app.requestr(1)==1) & (dummy.app.requestl(2)==1
|| dummy.app.request(2)==1 || dummy.app.requestl(3)==1 || dummy.app.request(3)==1)

```

```

moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panellr.elevimgl.Position(2),182);

atfloor2l(dummy);

if dummy.app.requestl(2)==1 || dummy.app.request(2)==1

```



```

        opendoorl(dummy);closedoorl(dummy); Tcover3.3.11

        dummy.app.requestl(2)=0;dummy.app.request(2)=0;

    end

    atfloor2r(dummy);

    if dummy.app.requestr(2)==1 Tcover3.3.12

        opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(2)=0;

    end

    elseif dummy.app.floor1imgl.ImageSource == '1.png' & dummy.app.floor1imgr.ImageSource
    == '2.png' & dummy.app.requestr(1)==1 &(dummy.app.requestl(2)==1 || dummy.app.request(2)==1 ||
    dummy.app.requestl(3)==1 || dummy.app.request(3)==1)

moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panelr.elevimgr.Position(2),27); %1->
2; 2->1

        atfloor2l(dummy);

        if dummy.app.requestl(2)==1 || dummy.app.request(2)==1

            opendoorl(dummy);closedoorl(dummy); Tcover3.3.13

            dummy.app.requestl(2)=0;dummy.app.request(2)=0;

        end

        atfloor1r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(1)=0;

        elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource
        == '3.png' & (dummy.app.requestr(2)==1 || dummy.app.requestr(1)==1) &(dummy.app.requestl(3)==1
        || dummy.app.request(3)==1)

moveboth(dummy,dummy.panell.elevimgl.Position(2),321,dummy.panelr.elevimgr.Position(2),182);

        atfloor3l(dummy);
        opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(3)=0;dummy.app.request(3)=0;

        atfloor2r(dummy);

        if dummy.app.requestr(2)==1 Tcover3.3.14

            opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(2)=0;

        end

        elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource
        == '2.png' & (dummy.app.requestr(1)==1) &(dummy.app.requestl(3)==1 || dummy.app.request(3)==1)

```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),321,dummy.panellr.elevimgl.Position(2),27); %2->
3; 2->1
```

Tcover3.3.15

```
atfloor3l(dummy);
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(3)=0;dummy.app.request(3)=0;
atfloor1r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(1)=0;
```

- Coverage Criteria: Branch coverage
- Test case

	Test Case T2.3
Coverage Item	Tcover3.3.11 Tcover3.3.12 Tcover3.3.13 Tcover3.3.14 Tcover3.3.15
Input	left, right elevator inside button press: 1,1; 1,3; 2,2; 3,1; 1,2; 2,1; 2,3; 3,2
State	left, right: 1,1 -> 1,3 -> 2,2 -> 3,1 -> 1,2 -> 2,1 -> 2,3 -> 3,2
Expected Output	left, right: 1,1 -> 1,3 -> 2,2 -> 3,1 -> 1,2 -> 2,1 -> 2,3 -> 3,2

- Test coverage: 1/1=100%
- Test result: 1 passed

%%%%%%%%%% left down right up %%%%%%%%%%

```
elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgl.ImageSource
== '1.png' & (dummy.app.requestr(2)==1 || dummy.app.requestr(3)==1) & (dummy.app.requestl(1)==1
|| dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),10,dummy.panellr.elevimgl.Position(2),182); %2->
1;1->2
```

```
atfloor1l(dummy);
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(1)=0;dummy.app.request(1)=0;
```

```
atfloor2r(dummy);
```

```
if dummy.app.requestr(2)==1
```

Tcover3.3.16

```
opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(2)=0;
```

```
end
```

```
elseif dummy.app.floor1imgl.ImageSource == '3.png' & dummy.app.floor1imgr.ImageSource == '1.png' & (dummy.app.request(2)==1 || dummy.app.request(3)==1) & (dummy.app.requestl(1)==1 || dummy.app.request(1)==1 || dummy.app.requestl(2)==1 || dummy.app.request(2)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panellr.elevimgl.Position(2),182); %3->2;1->2
```

```
atfloor2l(dummy);
```

```
if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
```

```
    opendoorl(dummy);closedoorl(dummy); Tcover3.3.17
```

```
    dummy.app.requestl(2)=0;dummy.app.request(2)=0;
```

```
end
```

```
atfloor2r(dummy);
```

```
if dummy.app.request(2)==1 Tcover3.3.18
```

```
    opendoorr(dummy);closedoorr(dummy);dummy.app.request(2)=0;
```

```
end
```

```
elseif dummy.app.floor1imgl.ImageSource == '2.png' & dummy.app.floor1imgr.ImageSource == '2.png' & dummy.app.request(3)==1 & (dummy.app.requestl(1)==1 || dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),10,dummy.panellr.elevimgl.Position(2),338); %2-1;2-3 Tcover3.3.19
```

```
atfloor1l(dummy);
```

```
opendoorl(dummy);closedoorl(dummy);dummy.app.requestl(1)=0;dummy.app.request(1)=0;
```

```
atfloor3r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.request(3)=0;
```

```
elseif dummy.app.floor1imgl.ImageSource == '3.png' & dummy.app.floor1imgr.ImageSource == '2.png' & dummy.app.request(3)==1 & (dummy.app.requestl(2)==1 || dummy.app.request(2)==1 || dummy.app.requestl(1)==1 || dummy.app.request(1)==1)
```

```
moveboth(dummy,dummy.panell.elevimgl.Position(2),165,dummy.panellr.elevimgl.Position(2),338); %3->2;2-3
```

```
atfloor2l(dummy);
```

```
if dummy.app.requestl(2)==1 || dummy.app.request(2)==1
```

```
    opendoorl(dummy);closedoorl(dummy); Tcover3.3.20
```

```
    dummy.app.requestl(2)=0;dummy.app.request(2)=0;
```

end

atfloor3r(dummy); opendoorr(dummy);closedoorr(dummy);dummy.app.requestr(3)=0;

end

end

- Coverage Criteria: Branch coverage
- Test case

	Test Case T2.4
Coverage Item	Tcover3.3.16 Tcover3.3.17 Tcover3.3.18 Tcover3.3.19 Tcover3.3.20
Input	Right left elevator inside button press: 1,1; 1,3; 2,2; 3,1; 1,2; 2,1; 2,3; 3,2
State	right, left: 1,1 -> 1,3 -> 2,2 -> 3,1 -> 1,2 -> 2,1 -> 2,3 -> 3,2
Expected Output	right, left: 1,1 -> 1,3 -> 2,2 -> 3,1 -> 1,2 -> 2,1 -> 2,3 -> 3,2

- Test coverage: 1/1=100%
- Test result: 1 passed