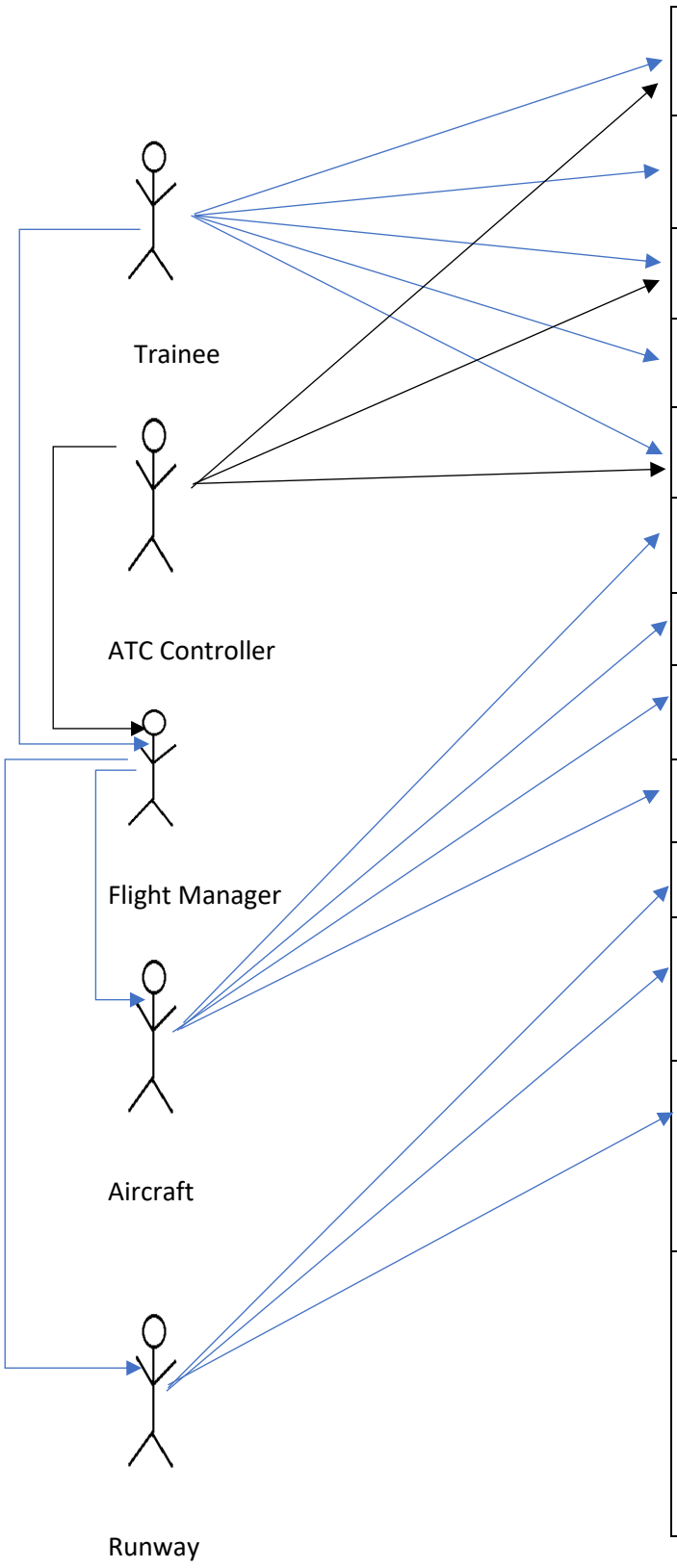

Choose User Type
Enter Flight Details
Enter Runway Details
Add New Flights
Add New Runways
Ascend the aircraft
Descend the aircraft
Approach to landing Runway
Abort Landing
Allocate regular runway
Allocate emergency runway
Deallocate runway after landing

USE CASE DESCRIPTION

1. Choose User Type:

1.1 Introduction

This case documents the procedure for the choosing the desired user type to simulate due to consideration of different variables in both the user type.

- Trainee (Enter flight details, enter runway details, add new flights, Add new runways)
- ATC controller (Enter runway details, Add new runways)

1.2 Actors

Trainee, ATC controller

1.3 Pre-Condition

None

1.4 Post-Condition

Different simulation screens are presented to the user as per chosen user type.

1.5 Flow of Events

1.5.1 Basic Flow

The use case starts when user enters his preferred user type into simulator.

- The system requests user to choose his/her user type from drop down menu.
- Object for the chosen type is created.
- If the user is trainee, then he is provided trainee screen to fill out simulation details.
- If the user is ATC controller, he is provided ATC controller simulation screen to create a simulation scenario.

1.5.2 Alternative Flow

- Object is not created for chosen user type then try to take user input again.

1.6 Special Requirement

None

1.7 Related Use Cases

None

2. Enter Runway Details

2.1 Introduction:

This use case documents the procedure for entering runaway details as user type trainee or ATC controller

- Enter if the runaway is occupied or empty
- Enter the wind direction
- Enter if the landing is emergency or not

2.2 Actors

Trainee and ATC Controller

2.3 Pre-Condition

Trainee or ATC Controller must be selected as user type.

2.4 Post-Condition

If input is submitted in proper format the user can add another flight. Otherwise, an error message “Input mismatch” will be displayed.

2.5 Flow of Events

2.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Add another runaway button is created is activated for the user to enter runaway details.
- The use case ends.

2.5.2 Alternative Flow

2.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

2.5.2.2 Pressing new runaway button without filling details of previous runaway state is unchanged.

2.6 Special Requirements

None

2.7 Related Use cases

None

3 Enter Flight Details

3.4 Introduction:

This use case documents the procedure for entering fight details as user type trainee.

- Raise Emergency signal (if required)
- Type/Size of aircraft
- Enter fuel left in the aircraft at the time of landing schedule
- Enter current altitude of the aircraft at the time of landing schedule
- Enter current speed of the aircraft at the time of landing scheduling

3.2 Actors

Trainee and ATC controller

3.3 Pre-Condition

Trainee or ATC Controller must be selected be selected as user type.

3.4 Post-Condition

If input is submitted in proper format the user can add another runway. Otherwise, an error message “Input mismatch” will be displayed.

3.5 Flow of Events

3.5.1 Basic Flow

The use case starts when the user enters runway data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Add another runway button is activated for the user to enter another runway details.
- The use case ends.

3.5.2 Alternative Flow

3.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runway details again.

3.5.2.2 Pressing new runway button without filling details of previous flight, State is unchanged.

3.6 Special Requirements

None

3.7 Related Use cases

None

4 Add New Flights

4.4 Introduction:

This use case documents the procedure for adding and entering new fight details as user type trainee.

- To add new flight details (if required)
- Raise Emergency signal (if required)
- Type/Size of aircraft
- Enter fuel left in the aircraft at the time of landing schedule
- Enter current altitude of the aircraft at the time of landing schedule
- Enter current speed of the aircraft at the time of landing scheduling

3.2 Actors

Trainee

3.3 Pre-Condition

Trainee must be selected be selected as user type.

3.8 Post-Condition

If input is submitted in proper format the user can add another runway. Otherwise, an error message “Input mismatch” will be displayed.

3.9 Flow of Events

3.9.1 Basic Flow

The use case starts when the user enters runway data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Add another runway button is activated for the user to enter another runway details.
- The use case ends.

3.9.2 Alternative Flow

3.9.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runway details again.

3.9.2.2 Pressing new runway button without filling details of previous flight, State is unchanged.

3.10 Special Requirements

None

3.11 Related Use cases

None

5. Add new runway

5.1 Introduction:

This use case documents the procedure for adding and entering new runaway details as user type trainee or ATC controller

- Enter if the runaway is occupied or empty
- Enter the wind direction
- Enter if the landing is emergency or not

5.2 Actors

Trainee and ATC Controller

5.3 Pre-Condition

Trainee or ATC Controller must be selected as user type.

5.4 Post-Condition

If input is submitted in proper format the user can add another flight. Otherwise, an error message “Input mismatch” will be displayed.

5.5 Flow of Events

5.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Add another runaway button is created is activated for the user to enter runaway details.
- The use case ends.

5.5.2 Alternative Flow

5.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

5.5.2.2 Pressing new runaway button without filling details of previous runaway state is unchanged.

5.6 Special Requirements

None

5.7 Related Use cases

None

6. Ascending the Aircraft

6.1 Introduction:

This use case documents the procedure for when the aircraft climb to its cruising altitude as user type flight manager and aircraft

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts weather it is an emergency or not
- Tells about the success rate

6.2 Actors

Flight Manager and aircraft

6.3 Pre-Condition

Correctly mention the details of flight and runway

6.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

6.5 Flow of Events

6.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

6.5.2 Alternative Flow

6.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

6.5.2.2 On stopping the simulation, the assignment of runway is stopped.

6.6 Special Requirements

None

6.7 Related Use cases

None

7. Descending the Aircraft

7.1 Introduction:

This use case documents the procedure for when the aircraft starts decreasing it's altitude as user type flight manager and aircraft

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts weather it is an emergency or not
- Tells about the success rate

7.2 Actors

Flight Manager and aircraft

7.3 Pre-Condition

Correctly mention the details of flight and runway

7.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

7.5 Flow of Events

7.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

7.5.2 Alternative Flow

7.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message "Input mismatch" is shown. Enter runaway details

7.5.2.2 On stopping the simulation, the assignment of runway is stopped.

7.6 Special Requirements

None

7.7 Related Use cases

None

8. Approach to landing Runway

8.1 Introduction:

This use case documents the procedure for when the aircraft is first in the queue then the signal is formed for the approach to landing user type flight manager

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts weather it is an emergency or not
- Tells about the success rate

8.2 Actors

Flight Manager and aircraft

8.3 Pre-Condition

Correctly mention the details of flight and runway

8.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

8.5 Flow of Events

8.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

8.5.2 Alternative Flow

8.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

8.5.2.2 On stopping the simulation, the assignment of runway is stopped.

8.6 Special Requirements

None

8.7 Related Use cases

None

9. Abort Landing

9.1 Introduction:

This use case documents the procedure for when the aircraft is first in the queue then the signal is formed for abort the landing maybe due to circumstantial reasons user type flight manager

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts weather it is an emergency or not
- Tells about the success rate

9.2 Actors

Flight Manager and aircraft

9.3 Pre-Condition

Correctly mention the details of flight and runway

9.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

9.5 Flow of Events

9.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

9.5.2 Alternative Flow

9.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

9.5.2.2 On stopping the simulation, the assignment of runway is stopped.

9.6 Special Requirements

None

9.7 Related Use cases

None

10. Allocate regular runway

10.1 Introduction:

This use case documents the procedure for entering runaway details as user type Flight manager

- Enter if the runaway is occupied or empty
- Enter the wind direction
- Enter if the landing is emergency or not

10.2 Actors

Flight manager

10.2 Pre-Condition

10.4 post-Condition

If input is submitted in proper format the user can add another flight. Otherwise, an error message “Input mismatch” will be displayed.

10.5 Flow of Events

10.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

10.5.2 Alternative Flow

10.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

10.5.2.2 Pressing new runaway button without filling details of previous runaway state is unchanged.

10.6 Special Requirements

None

10.7 Related Use cases

None

11. Allocate emergency runway

11.1 Introduction:

This use case documents the procedure when some runaways are allocated for emergency landing or take-off

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts the emergency
- Tells about the success rate

11.2 Actors

Flight Manager

11.3 Pre-Condition

Correctly mention the details of flight and runway

11.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

11.5 Flow of Events

11.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

11.5.2 Alternative Flow

11.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

11.5.2.2 On stopping the simulation, the assignment of runway is stopped.

11.6 Special Requirements

None

11.7 Related Use cases

None

11.1 Deallocate runway after landing

11.2 Introduction:

This use case documents the procedure for when the aircraft lands and the runaway allocated to the flight gets deallocated

- After flight and ground details submit and simulate for the flight function
- Runway is assigned to the aircraft
- Depicts weather it is an emergency or not
- Tells about the success rate
- Informs about the smooth or rough landing
- Deallocates the flight information from the runaway database

7.2 Actors

Flight Manager and aircraft

7.3 Pre-Condition

Correctly mention the details of flight and runway

7.4 Post-Condition

To get the information about the flight we need to simulate the following function to see the runaway details and success rate of the flight.

7.5 Flow of Events

7.5.1 Basic Flow

The use case starts when the user enters flight data into the designated fields.

- The system reads and validates the input entered by the user
- Input validation is done by matching the data type of desired and entered values.
- Simulate button is created to see the flight status
- The use case ends.

7.5.2 Alternative Flow

7.5.2.1 Incorrect input

If the entered input is not matching with the correct data type of every input field an error message “Input mismatch” is shown. Enter runaway details

7.5.2.2 On stopping the simulation, the assignment of runway is stopped.

7.6 Special Requirements

None

7.7 Related Use cases

None