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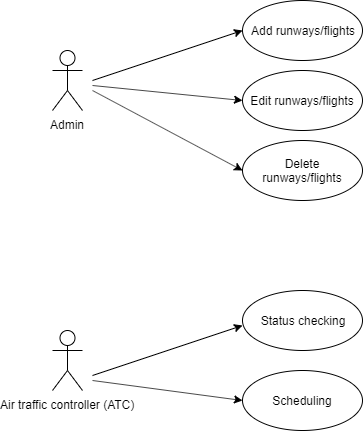
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1. **Project Repository**

GitHub repository for the project can be found on this link

<https://github.com/SWE-Group/FlightSchedulingSystem>

1. **Flight Scheduling System: Use Case Diagram**



1. **Flight Scheduling System: Use Case Description**

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| --- | --- | --- |
| **Use Case Number: 1** | | |
| **Name** Admin adds the runways/flights | | |
| **Brief Description** This use case allow the admin to add the runways and flights. | | |
| **Actors**  Admin | | |
|  | | |
| **Preconditions** | | |
| The admin must login to the system. | | |
| **Flow of Events** | | |
| **1. Basic Flows** | | |
| **1.1.0 Add the runways/flights** | | |
| **Step** | **User Actions** | **System Actions** |
| 1 | The admin creates the runways. | The system displays the runway form with fields for runwayNo, description, and status. |
| 2 | The admin creates the flights info. | The system displays the flights info form with fields for flightNo, from, to, airline, departTime, arriveTime, status, and assignedRunway. |
| 3 | The admin fills the form and request the system to save the details. | The system verifies the runway/flight in the database and return the message success if the data inserted or return the message failure if fail on data inserted. If the data already existed, display the message duplicate data. |
| **Postconditions** | | |
| The runway/flight record persists in the system. | | |
| **Business Rules** | | |
| No duplicate record. Identify the runway by runwayNo and flight by flightNo. | | |
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| --- | --- | --- |
| **Use Case Number: 2** | | |
| **Name** Admin update the runways/flights | | |
| **Brief Description** This use case allow the admin to update the runways and flights. | | |
| **Actors**  Admin | | |
|  | | |
| **Preconditions** | | |
| The admin must login to the system. | | |
| **Flow of Events** | | |
| **1. Basic Flows** | | |
| **1.1.0 Update the runway/flight** | | |
| **Step** | **User Actions** | **System Actions** |
| 1 | The admin views the list of runways/flights. | The system will list all the runways/flights. |
| 2 | The admin selects the runway/flight they want to update. | The system will display the runways/flights form with prepopulate details. |
| 3 | The admin updates the runways form and request the system to save the details. | The system will update the record and return the success message or failure message if fail. |
| **Postconditions** | | |
| The runway/flight will update. | | |
| **Business Rules** | | |
| The runway/flight id should unwritable. | | |
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| --- | --- | --- |
| **Use Case Number: 3** | | |
| **Name** Admin delete the runways/flights | | |
| **Brief Description** This use case allow the admin to delete the runways and flights. | | |
| **Actors**  Admin | | |
|  | | |
| **Preconditions** | | |
| The admin must login to the system. | | |
| **Flow of Events** | | |
| **1. Basic Flows** | | |
| **1.1.0 Delete the runway/flight** | | |
| **Step** | **User Actions** | **System Actions** |
| 1 | The admin views the list of runways/flights. | The system will list all the runways/flights. |
| 2 | The admin selects the runway/flight they want to remove. | The system will display the confirmation dialog window. |
| 3 | The admin selects OK to confirm delete the runway/flight. | The system checks if this runway/flight is being used or related to other runway/flight and delete the runway/flight. The system returns success message if delete succeed. If the runway/flight is being occupied, the message should indicate that without delete. |
| **Postconditions** | | |
| The runway/flight will be deleted. | | |
| **Business Rules** | | |
| Only runway/flight that has not been occupied or assigned can be delete. | | |
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| **Use Case Number: 4** | | |
| **Name** ATC schedules flights | | |
| **Brief Description** This use case allows air traffic controllers to schedule flights | | |
| **Actors**  Air Traffic Controller | | |
|  | | |
| **Preconditions** | | |
| ATC must be logged in and on work-shift.  Flight must be already on the static airline list | | |
| **Flow of Events** | | |
| **1. Basic Flows** | | |
| **1.1.0** | | |
| **Step** | **User Actions** | **System Actions** |
| 1 | ATC receives a flight request to land/takeoff | The system highlights the requested flight together with its request. |
| 2 | ATC schedules an inbound/outbound flight request | System updates the schedule list with the requested flight action. |
| **Postconditions** | | |
| A flight has a slot to utilize the runway  No two flights will have conflicting access to the runway | | |
| **Business Rules** | | |
| Only ATC can schedule a flight to land or takeoff | | |
| Scheduling depends on a Runway Status check | | |

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| **Use Case Number: 5** | | |
| **Name** ATC checks the status of the runway | | |
| **Brief Description** This use case is used by ATC to check the status of the runway | | |
| **Actors**  Air Traffic Controller (ATC) | | |
|  | | |
| **Preconditions** | | |
| ATC must be logged in and on shift. | | |
| **Flow of Events** | | |
| **1. Basic Flows** | | |
| **1.1.0 Check the status of the runway** | | |
| **Step** | **User Actions** | **System Actions** |
| 1 | ATC request to see the status of the runway | The system performs status check on the runway to see if it is available or unavailable and return the status to the user |
| 2 | ATC confirm the status and lunch the scheduler | The system lunches the scheduler to schedule based on the status of the runway |
| **Postconditions** | | |
| Scheduling will take place whether the runway is available or not | | |
| **Business Rules** | | |
| Only ATC can check the status of the runway | | |
| Scheduling is done only after status check | | |