

**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	15 October 2022
Team ID	PNT2022TMID35251
Project Name	Developing a flight delay prediction model using machine learning
Maximum Marks	4 Marks

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Signup	<ul style="list-style-type: none"><li>• Registration through UserID/Password</li><li>• Registration through Gmail</li><li>• Registration through Phone number</li></ul>
FR-2	User Confirmation	<ul style="list-style-type: none"><li>• Confirmation via Email</li><li>• Confirmation via OTP</li></ul>
FR-3	User Login	<ul style="list-style-type: none"><li>• Login with UserID/Password</li><li>• Login with gmail</li><li>• Login with phone number/OTP</li></ul>
FR-4	Search Flight	<ul style="list-style-type: none"><li>• Get the entered flight details</li></ul>
FR-5	Predict Delay Time	<ul style="list-style-type: none"><li>• Feed the details to the model and find prediction</li><li>• Display the received prediction</li></ul>
FR-6	Predict Delay Accuracy	<ul style="list-style-type: none"><li>• Get the accuracy of delay</li><li>• Display the accuracy</li></ul>
FR-7	Notify the user	<ul style="list-style-type: none"><li>• Send prediction results to mail</li><li>• Notify 30 minutes before flight arrival/departure</li></ul>
FR-8	Get feedback	<ul style="list-style-type: none"><li>• Get descriptive feedback</li><li>• Get ratings from user</li></ul>
FR-9	User Logout	<ul style="list-style-type: none"><li>• Logout of the application</li></ul>

### Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	<ul style="list-style-type: none"><li>● An app tour would be shown to the users.</li><li>● To guide new users who search flights, in the search box where the user needs to type the flight details,</li><li>● a message such as Try “BOM MAA” or “Mumbai Chennai” will be displayed.</li></ul>
NFR-2	Security	<ul style="list-style-type: none"><li>● During registration, a 2 factor authentication through mail would confirm if the user is reliable.</li><li>● The user would be able to login to the app only with his credentials.</li><li>● He would be allowed to change the password only after a 2-factor authentication and a notification would also be sent to his mailbox to indicate the change.</li></ul>
NFR-3	Reliability	<ul style="list-style-type: none"><li>● There is a 75 percent chance under optimal condition that the application won't experience critical failure</li><li>● There is 80 percent restoring capability even if the system fails.</li></ul>
NFR-4	Performance	<ul style="list-style-type: none"><li>● The application load time would take 3 seconds or less with a WiFi/LTE connection.</li><li>● Time taken to predict the delay would be no more than 5 seconds.</li></ul>
NFR-5	Availability	<ul style="list-style-type: none"><li>● During any new update/maintenance, a message would be displayed in the application 48 hours before the scheduled time regarding the same.</li><li>● The functional requirement ‘Search flight’ function may not be available when all the flights are canceled as in case of pandemic or in war stricken areas..</li><li>● The user gets the prediction result through mail.</li><li>● If there is any problem with the model, the user would receive an alert that there is an issue in the prediction and the system would get back within 10 mins.</li><li>● The system would be available to use during the other times.</li></ul>
NFR-6	Scalability	<ul style="list-style-type: none"><li>● Though it is out of scope keeping our implementation in mind, the system can be made scalable enough to support 1,000,000 visits at the same time while maintaining optimal performance.</li><li>● It can also be scaled to predict delays with international flights and delays due to weather by training the model with appropriate data, given that it must be available.</li></ul>