

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

Date	20 October 2022
Team ID	PNT2022TMID27642
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"> Registration through User ID/Password Registration through Gmail Registration through Phone number
FR-2	User Confirmation	<ul style="list-style-type: none"> Confirmation via Email Confirmation via OTP
FR-3	User Login	<ul style="list-style-type: none"> Login with User ID/Password Login with Gmail Login with phone number/OTP
FR-4	Search Flight	<ul style="list-style-type: none"> Get the entered flight details
FR-5	Predict Delay Time	<ul style="list-style-type: none"> Feed the details to the model and find prediction Display the received prediction
FR-6	Predict Delay Accuracy	<ul style="list-style-type: none"> Get the accuracy of delay Display the accuracy
FR-7	Notify the user	<ul style="list-style-type: none"> Send prediction results to mail Notify 30 minutes before flight arrival/departure
FR-8	Get feedback	<ul style="list-style-type: none"> Get descriptive feedback Get ratings from user
FR-9	User Logout	<ul style="list-style-type: none"> Logout of the application

Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
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NFR-1	Usability	<ul style="list-style-type: none"> • An app tour would be shown to the users. • To guide new users who search flights, in the search box where the user needs to type the flight details, a message such as Try “BOM MAA” or “Mumbai Chennai” will be displayed.
NFR-2	Security	<ul style="list-style-type: none"> • During registration, a 2-factor authentication through mail would confirm if the user is reliable. • The user would be able to login to the app only with his credentials. • 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.
NFR-3	Reliability	<ul style="list-style-type: none"> • There is a 75 percent chance under optimal condition that the application won't experience critical failure • There is 80 percent restoring capability even if the system fails.
NFR-4	Performance	<ul style="list-style-type: none"> • The application load time would take 3 seconds or less with a Wi-Fi/LTE connection. • Time taken to predict the delay would be no more than 5 seconds.
NFR-5	Availability	<ul style="list-style-type: none"> • During any new update/maintenance, a message would be displayed in the application 48 hours before the scheduled time regarding the same. • The functional requirement ‘Search flight’ function may not be available when all the flights are cancelled as in case of pandemic or in war stricken areas.. • The user gets the prediction result through mail. • 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. • The system would be available to use during the other times.
NFR-6	Scalability	<ul style="list-style-type: none"> • 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. • 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.

