

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

Date	15 October 2022
Team ID	PNT2022TMID10226
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 UserID/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 UserID/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
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 WiFi/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 canceled 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.