

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID35911
Project Name	Smart solution for Railways
Maximum Marks	4 Marks

Technical Architecture:

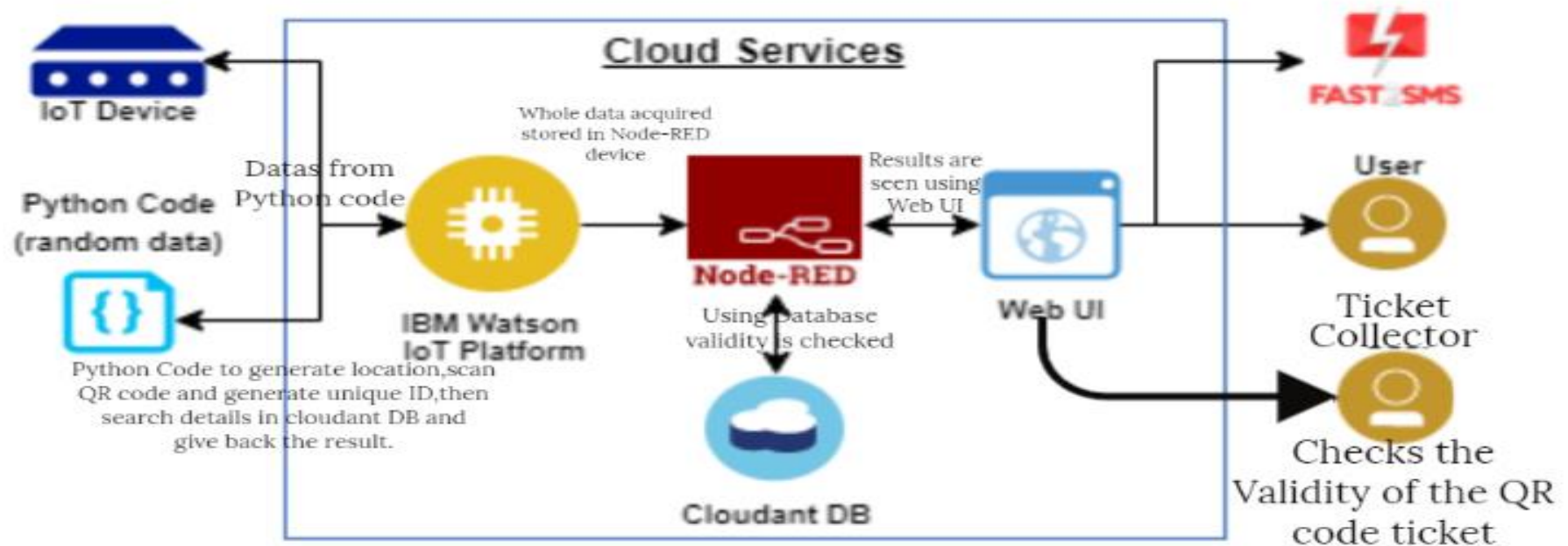


Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with the web UI application	HTML, CSS, Python, MIT Inventor App
2.	Application Logic-1	To generate location, scan QR code and generate unique ID.	Python, MIT Inventor App
3.	Application Logic-2	Getting model output for validation for cost estimation	IBM Watson
4.	Application Logic-3	Getting model output for database checking and result in Web UI	Node-RED
5.	Database	Data Type – Passenger Details	MySQL
6.	Cloud Database	Database Service on Cloud	IBM Cloudant DB
7.	File Storage	Received user details and received user location are stored in cloud	IBM Block Storage, IOT device
8.	External API-1	Purpose of External API is to generate location and weather information	IBM Weather API
9.	Infrastructure (Server / Cloud)	On cloud server we will deploy the Watson and Node-Red model.	Cloud Foundry, IBM cloud,.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used is IBM Watson	Technology of Opensource framework – IBM Watson
2.	Security Implementations	IBM Cloud	Certified Watson assistant for Encrypted file system, Encrypted storage systems, Key management systems.
3.	Scalable Architecture	Web Server – Static and Dynamic website content present in the website will be updated based upon user demands and suggestion. Application Server – Updation of the basic functionality of the website and integration of new logic within the website can be done. Database Server – Based upon the varying inputs given by the user. The Database will be modified constantly.	IBM Watson, Node-RED, Python.
4.	Availability	The IOT model is available instantly to user at any point of time.	IBM Watson Cloud Assistance
5.	Performance	IBM Watson- Automate Process. Node-Red – Validation and result process. IBM Watson used to process data using python and store Node-RED which searches details in Cloudant DB and shows result in WEB UI. The above IBM technology gives better performance and quick accessibility.	IBM Watson, Node-RED, Python, MIT App Inventor-Web UI.

