Project Design Phase-II
TechnologyStack(Architecture&Stack)

Date	16 May 2023
TeamID	NM2023TMID01183
ProjectName	Street quality identification

TechnicalArchitecture:

TheDeliverableshallincludethearchitecturaldiagramasbelowandtheinformationasperthetable1&table2

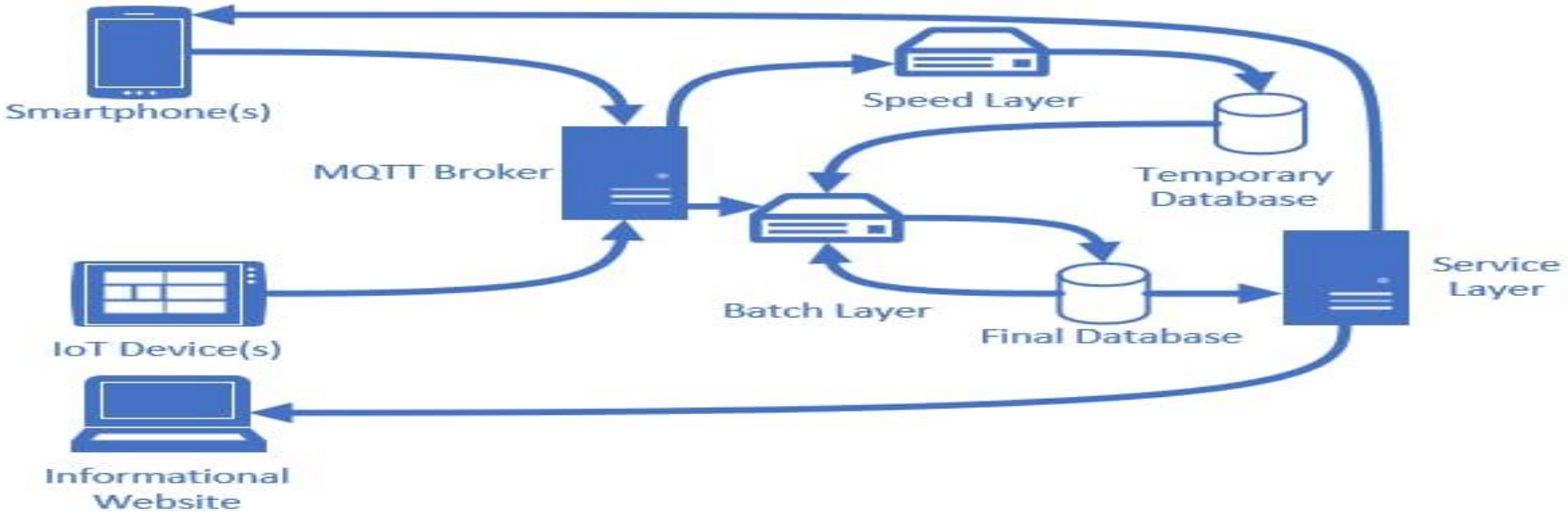

Table-1:Components&Technologies:

S.No	Component	Description	Technology
1.	User Interface	Once the address in entered, the user can click on the identify street quality button to initiate the process.	JavaScript,python

2.	Application Logic-1	User authentication : provide secure login mechanism for authorized users to access the system.	Java/Python
3.	Application Logic-2	These systems typically employ image processing algorithms to analyze street images captured by camers mounted on vechiles or other mobile platforms.	IBM Watson STTservice
4.	ApplicationLogic-3	Users can report street quality issues they encounter, including potholes, obstrutions, or any other road-related problems.	IBM Watson Assistant
5.	Database	We can utilize a relational database management system(RDBMS)	MySQL ,SQLite,python
6.	Cloud Database	We can use cloud database service that provide scalability, high availability, and easy data management.	Google cloud firestore
7.	FileStorage	Cloud store it as plain text, structured data or even consider using a binary format if performance or space efficiency is concern.	CRUD
8.	ExternalAPI-1	Geocoding API'S such as google maps geocoding API or open street map nominatim API ,allow you to convert street addresses into geographic coordinates.	Google location
9.	ExternalAPI-2	We can analyze street images or video to automatically detect and assess street quality indicators like potholes,cracks, or pavement condition.	Google location
10.	MachineLearningModel	Collect a dataset of street quality samples .the dataset should included labeled examples of streets with different quality levels.	Python ,R, Java.
11.	Infrastructure(Server/Cloud)	You may need to integrate this data collection process with your programming language infrastructure.	MySQL,postgreSQL,

Table-2:ApplicationCharacteristics:

S.No	Characteristics	Description	Technology
1.	Open-SourceFrameworks	The open source frameworks used are tensor flow ,open cv.	Open cv

2.	Security Implementations	Use appropriate input validation techniques like parameterized queries or prepared statements to avoid direct user input in queries or commands.	XSS,HTTPS
3.	Scalable Architecture	Capable of efficiently accommodating growing user demand and increasing data vloumes while maintaining high performance and accuracy	Technology used
4.	Availability	Widely accessible and readily available for users,providing real-time street quality data and analysis through user-friendly platform and applicaions.	Technology used

S.No	Characteristics	Description	Technology
5.	Performance	The systems typically employ image processing algorithms to analyze street images captured by cameras mounted on vechicles or other mobile platforms.	Technology used