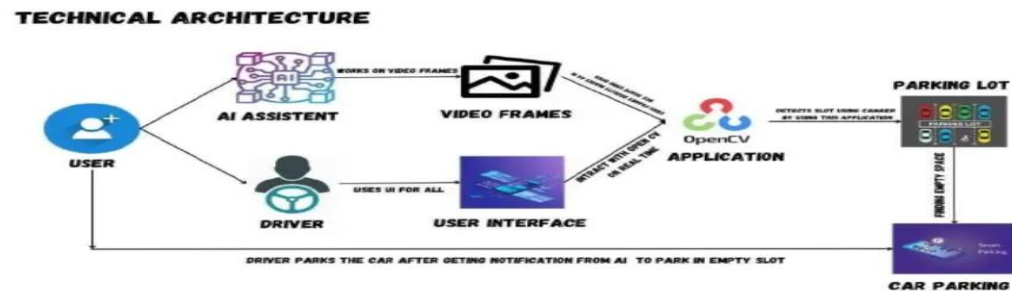


## Project Design Phase-II Technology Stack (Architecture & Stack)

Date	27 October 2023
Team ID	Team-592107
Project Name	Project - AI Enable Car Parking Using OpenCV
Maximum Marks	4 Marks

### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



### Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	User Interface	User Interface is used by user in mobile application or In Build in car display itself	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	User Logic-1	Framework used for design the software	Python , python-flask
3.	User Logic-2	Access the software inthe car by the driver todetect spot	Open CV,python
4.	Application Logic-1	Open CV is an open-source platform for providing real time computer vision technology	Open CV
5.	Database	Contains images and video frames stores in data base	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	They make it easy for developers to store manage and deploy container images	Container registry
9.	Machine Learning Model	Uses test and trained data images and video to learn the environment	Object Recognition Model, etc.
10.	Infrastructure (Server / Cloud)	Application Development on Local system / cloud	Local, Cloud Foundry, Kubernetes, etc.

**Table-2: Application Characteristics:**

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	OpenCV ,IBM db	Technology of Opensource framework
2.	Security Implementations	Secure Data Storage, Image and Video Security, Physical Security, User Privacy Protection	OpenCV, Cameras and Sensor, Web Development Frameworks, Databases
3.	Scalable Architecture	Modular Design, Cloud Integration, AI-Based Optimization	Load Balancers, Containerization and Orchestration, Real-time Monitoring and Auto-Scaling
4.	Availability	Load Testing, User Support, Security and Maintenance, Monitoring and Alerting	Load Balancers, Redundancy and Failover, Cloud Computing
5.	Performance	Scalable Architecture, Scalable Architecture, Database Optimization, Browser Caching	Caching Mechanisms, Content Prioritization, Content Prioritization:

**References:**

<https://c4model.com/>

<https://www.ibm.com/cloud/architecture> <https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d> [AI enable car parking using OpenCV.docx.pdf](#)

<https://www.ibm.com/docs/en/db2/11.5?topic=framework-application-development-db>