

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

Date	03 October 2022
Team ID	PNT2022TMIDxxxxxx
Project Name	Project - xxx
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>

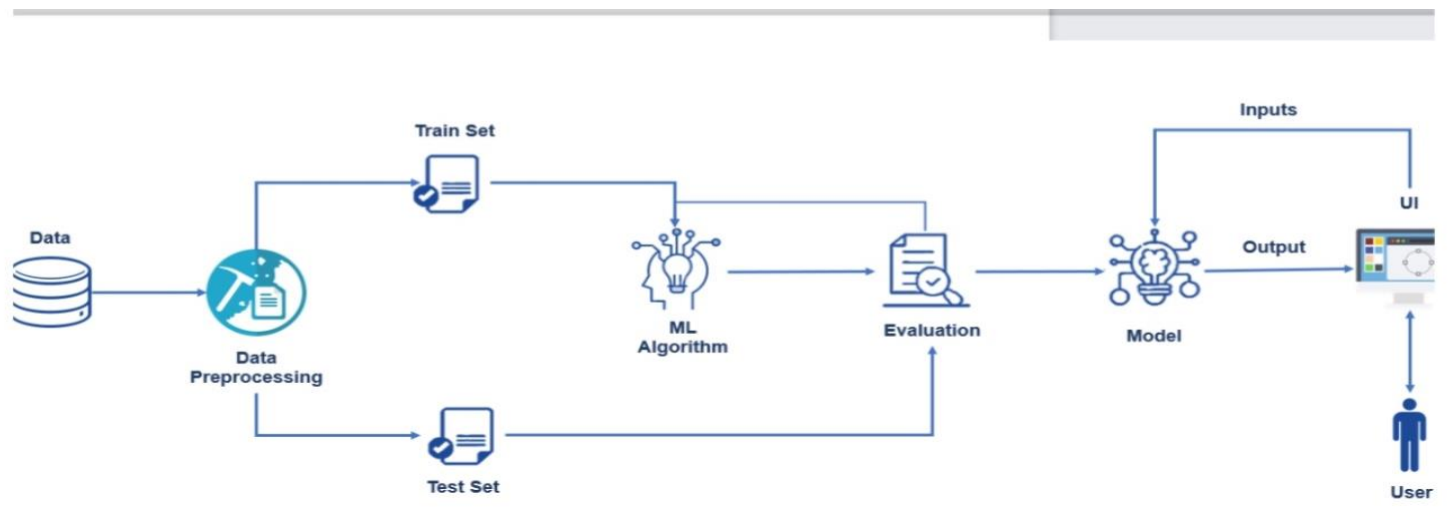


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	provides a UI development framework you can use to ensure apps present in cars	HTML, CSS, JavaScript
2.	Application Logic-1	The logic behind this factor is that the more the number of owners there, the higher is the possibility of the car being used roughly.	Java / Python
3.	Application Logic-2	If you get a good resale price, your loan for the new car will fall accordingly.	IBM Watson STT service
4.	Application Logic-3	AI that one needs to calculate the approximate value of a pre-owned car.	IBM Watson Assistant
5.	Database	predictive models were applied to predict price of cars in an order: random forest , linear regression, ridge regression, lasso, KNN, XG Boost.	MySQL
6.	Cloud Database	A cloud database is a database that is built, deployed, and accessed in a cloud environment, such as a private, public, or hybrid cloud.	IBM Cloudant

7.	File Storage	The car's glove compartment is often known as the safe place to keep your vehicle's documents, your IDs, and other valuables. So, ensuring that your car glove box is organized properly is something that can't be overlooked.	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	the API 's functionality, be accurate, educational, and inspire usage. It's a big job that can roughly be broken down into three types: Reference and functionality. Guides and tutorials.	IBM Weather API
9.	External API-2	API is an acronym that stands for “application programming interface,” and it allows apps to send information between each other. While there are numerous protocols and technologies involved, the underlying purpose of AP Is is always the same: to let one piece of software communicate with another	Aadhar API, etc.
10.	Machine Learning Model	Learning rate is a hyper-parameter that controls how much we are adjusting the weights of our network concerning the loss gradient. The lower the value, the slower we travel along the downward slope.	Object Recognition Model
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud These requirements include scalability, adaptability, extensibility, and manageability. In addition, the cloud must exhibit additional capabilities that address the best-in-class requirements of the enterprise-	Local, Cloud

		<p>such as providing for security, real-time availability, and performance.</p> <p>Local Server Configuration: The main objective of the Car Rental System is to manage the details of Car, Payment, Customer, Supplier, Insurance. It manages all the information about Car, Booking, Insurance, Car. The project is totally built at administrative end and thus only the administrator is guaranteed the access.</p> <p>Cloud Server Configuration : The main requirement to implement the cloud computing is security and Customer support. Explanation: The cloud host based requirement for business is completely based on an organization's present structure.</p>	
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1. Table-2: Application Characteristics:	Open-Source Frameworks	There are over 80 variations of open-source licenses, but they generally fall into one of two primary categories: copyleft and permissive. Copyleft license is a license type in which code derived from the original open source code inherits its license terms.	Data-driven intelligent, machine learning, artificial intelligence
2.	Security Implementations	Cyber security , within the context of road vehicles, is the protection of automotive electronic systems, communication networks, control algorithms, software, users, and underlying data from	AI-driven algorithm,

		malicious attacks, damage, unauthorized access, or manipulatio	
3.	Scalable Architecture	Security. Auto scaling also protects against application, hardware, and network failures by detecting and replacing unhealthy instances while still providing application resiliency and availability. Availability. Auto scaling improves availability and uptime, especially when production workloads are less predictable.	Machine learning
4.	Availability	Load balancing is a core networking solution used to distribute traffic across multiple servers in a server farm. Load balancer improve application availability and responsiveness and prevent server overload.	Predictive technology
5.	Performance	The 'performance' in a performance car represents a more powerful engine, superior speed, agility, and overall driving experience. While regular cars have moderately powerful engines that are easier to handle, performance and sports cars need a powerful engine to provide higher performance	Smart Sensor Car Kit, TREEL MTrac, GPS Fleet Trackers

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<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>