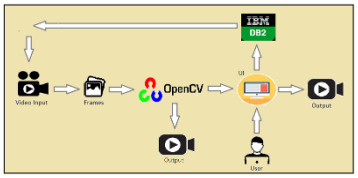
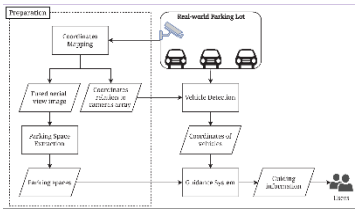
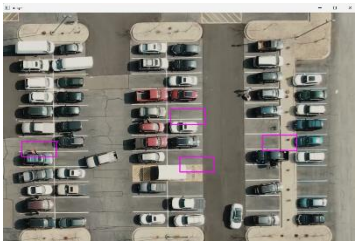
Project Development Phase
Model Performance Test

Date	20 May 2023
Team ID	NM2023TMID16858
Project Name	Project – AI-enabled car parking using OpenCV

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Model Summary	The AI-enabled car parking system using OpenCV automates the parking process by utilizing computer vision techniques. It captures live video footage of a parking lot, detects and tracks cars using OpenCV's functions, and identifies available parking slots through image processing. The system updates the occupancy status of each slot in real time and provides a user interface to display the parking lot layout. It can guide drivers to the nearest available slots and enhance security by incorporating features like license plate recognition. Integration with payment systems is possible for streamlined transactions. Overall, the system optimizes parking space utilization and improves parking lot management.	 
2.	Accuracy	**Training Accuracy** – For our project to train our AI model we have used "car parking.png" to detect car-parked space and empty space. If you perform the left click operation in the mouse it will indicate a rectangle if you perform the right click in the mouse it will remove the rectangle box. **Validation Accuracy** – It will automatically detect if the car was parked it will indicate a red rectangle box if the car was not	

		parked then it indicates a green rectangle box.	
3.	Confidence Score	**Class Detected** - The confidence score in an AI-enabled car parking system represents the level of certainty or confidence in the system's prediction for a specific class, such as a car. A probability value between 0 and 1 is associated with each detected object. The higher the confidence score, the more confident the system is in accurately identifying the class. The confidence score filters out false positives and determines the reliability of class predictions. By setting a threshold, only detections above the threshold are considered valid. In a car parking system, the confidence score is particularly relevant for the "car" class, helping ensure accurate detection and efficient parking management. **Confidence Score** - In an AI-enabled car parking system using OpenCV, the confidence score is not inherently provided by OpenCV itself. However, it can be incorporated by combining OpenCV and Pickle. These packages enable the use of object detection models such as YOLO or SSD, which generate confidence scores alongside detected objects. The confidence score represents the probability of an object being correctly classified, such as a car. It helps determine the reliability of the system's object detection and can be used to set a threshold for filtering out false positives. By integrating OpenCV with pickle packages and leveraging confidence scores, the car parking system can improve accuracy, enhance decision-making, and	

		optimize parking management based on reliable detections.	