



Faculty of Engineering
and Technology



MIT-World Peace University (MIT-WPU)
School of Computer Science and Engineering
Department of Computer Engineering and Technology

Course Name: TY Mini Projects

Mini-Project Synopsis

Team ID	CSE C5
TY CSE Panel Number	C
Name of Student, PRN No, Roll. No	<ol style="list-style-type: none"> Jay Mehta, PRN 1032210499, Roll No. 14 Devanshu Surana, PRN:1032210755, Roll No. 23 Pranav Pisal, PRN:1032210794, Roll No. 26 Prachiti Kulkarni, PRN:1032210844, Roll No. 32 Sanika Deore, PRN:1032210852. Roll No.33
Problem Statement	IntelliTrack – A Smart Vehicle Tracking System
Objectives & Methodology of the Proposed Work (Algorithms)	<p>Objectives :</p> <ol style="list-style-type: none"> Develop a user-friendly Smart Parking Locator system. Utilize technology such as GPS, mobile applications. Track the location of their parked vehicles within large parking areas. Provide intuitive interfaces and personalized settings for marking parking spots to vehicles. <p>Methods/Algorithms</p> <ol style="list-style-type: none"> Integration of GPS technology for accurate vehicle location tracking. Development of mobile applications with user-friendly interfaces for easy interaction. Usage of pathfinding algorithms such as Dijkstra's algorithm or A* search algorithm to find the shortest path on the map. <p>Proposed Results</p> <ol style="list-style-type: none"> Improved user convenience and reduced stress associated with finding parked vehicles in crowded environments. Decreased instances of wasted time and potential expenses due to forgotten vehicle locations.

	<p>3. Enhanced overall parking experience with features such as automated reminders, parking history logs, and customizable alerts.</p>
<p>Sources:</p>	<p>Source of Project : The development and implementation of the project will be carried out by the team members based on research, analysis, and software development methodologies.</p> <p>Sources of Dataset:</p>
<p>System Architecture Diagram</p>	<pre> graph TD subgraph TRACKER LS[Location Sensing] DP[Data Preprocessing] PM[Power Management] C[Communications] LS -- "Data and status" --> DP DP --> PM PM --> LS C --> LS C --> DP end subgraph CLOUD DMC[Data Management and flow control] end subgraph UI[USER INTERFACE] UC[User control] VI[Visual Interface] end GPS[GPS Signal] --> LS LS -- "Status" --> CLOUD CLOUD --> C DCB[DC Rechargeable battery] --> PM UC -- "User Input Command" --> C C -- "Visual Data" --> VI </pre>
<p>UML Activity Diagram</p>	<pre> classDiagram class SmartParking { parkingSpotList: List<ParkingSpot> userInterface: UserInterface vehicleLocation: VehicleLocation SmartParking() } class UserInterface { map: Map UserInterface() markParkingSpot(location: Location): void findMyCar(): Location showMap(): void } class VehicleLocation { currentLocation: Location VehicleLocation() trackLocation(): void getLocation(): Location } class ParkingSpot { spotID: int «PK» location: Location ParkingSpot(spotID: int, location: Location) getSpotID(): int getLocation(): Location } class Map { mapID: int «PK» mapImage: Image Map(mapID: int, mapImage: Image) displayMap(): void } class Location { latitude: float longitude: float Location(latitude: float, longitude: float) getLatitude(): float getLongitude(): float } SmartParking "1" -- "1" UserInterface : contains SmartParking "1" -- "1" VehicleLocation : contains SmartParking "1" -- "0..*" ParkingSpot : contains UserInterface "1" -- "1" Map : uses VehicleLocation "1" -- "1" Location : has ParkingSpot "1" -- "1" Location : has </pre>
<p>References (min 05 Research papers /</p>	<p>1. Testing Intelligence: Accelerating the Verification and Validation of Intelligent Vehicles," IEEE Transactions on Intelligent Vehicles, vol. 8, no. 2, pp. 1003, February 2023.</p>

/Website (with link)	<p>2. W. Xing, Y. Yang, S. Zhang, Q. Yu, and L. Wang, "NoisyOTNet: A Robust Real-Time Vehicle Tracking Model for Traffic Surveillance," <i>IEEE Transactions on Circuits and Systems for Video Technology</i>, vol. 32, no. 4, pp. 2107, April 2022.</p> <p>3. M. Driusso, C. Marshall, M. Sabathy, F. Knutti, H. Mathis, and F. Babich, "Vehicular position tracking using LTE signals," <i>IEEE Transactions on Vehicular Technology</i>, 2016.</p> <p>4. M. Driusso, C. Marshall, M. Sabathy, F. Knutti, H. Mathis, Member, IEEE, and F. Babich, Senior Member, IEEE, "Vehicular Position Tracking Using LTE Signals," <i>IEEE Transactions on Vehicular Technology</i>, 2016.</p> <p>5. T. P. Yunck, S. Wu, J. Wu, and C. L. Thornton, "Precise Tracking of Remote Sensing Satellites With the Global Positioning System," <i>IEEE Transactions on Geoscience and Remote Sensing</i>, vol. 28, no. 1, January 1990.</p>
Name of Mini Project Guide	Dr. Shamla Mantri
Sign of Mini Project Guide as approval to topic and feasibility.	

Remarks by Co-ordinator: Approved / Not Approved

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