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COMPANY PROFILE

Company Name : EZ Trainings and Technologies Pvt. Ltd.

Introduction:

EZ Trainings and Technologies Pvt. Ltd. is a dynamic and innovative organization dedicated to providing comprehensive training solutions and expert development services. Established with a vision to bridge the gap between academic learning and industry requirements, we specialize in college trainings for students, focusing on preparing them for successful placements. Additionally, we excel in undertaking development projects, leveraging cutting-edge technologies to bring ideas to life.

Mission:

Our mission is to empower the next generation of professionals by imparting relevant skills and knowledge through specialized training programs. We strive to be a catalyst in the career growth of students and contribute to the technological advancement of businesses through our development projects.

Services:

College Trainings:

- Tailored training programs designed to enhance the employability of students.
- Industry-aligned curriculum covering technical and soft skills.
- Placement assistance and career guidance.

Development Projects:

- End-to-end development services, from ideation to execution.
- Expertise in diverse technologies and frameworks.
- Custom solutions to meet specific business needs.

Locations: Hyderabad | Delhi NCR

At EZ Trainings and Technologies Pvt. Ltd., we believe in transforming potential into excellence

Internship Program on Python for BE-3rd Sem students
From 15th April to 4th May 2024 (During 3rd semester vacations).

Student Name: T.ROHITHA USN No: 3BR22CA054 Branch: CSE-AI

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Day	Date	Content Covered	Signature of the faculty in-charge
1	15.04.24	Introduction to Python, Setup & Installation, First Python Program, Variables, Data Types, and Basic I/O	
2	16.04.24	Control Structures: If-else, Loops, Functions and Modules	
3	17.04.24	Lists, Tuples, and Dictionaries, File Handling	
4	18.04.24	Exception Handling, Practice exercises on Python basics	
5	19.04.24	Introduction to OOP, Classes, and Objects	
6	20.04.24	Inheritance, Polymorphism, and Encapsulation	
7	22.04.24	Abstract Classes and Interfaces	
8	23.04.24	Practice exercises on OOP concepts	
9	24.04.24	Introduction to DSA, Arrays, and Linked Lists	
10	25.04.24	Stacks and Queues	
11	26.04.24	Trees and Graphs	
12	27.04.24	Searching and Sorting Algorithms	
13	28.04.24	Project Building & Presentations	
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ABSTRACT

- ✓ The Road Safety Audit System is a prototype system aimed at improving road safety by facilitating the auditing and reporting of safety issues on roads and intersections.
- ✓ It provides functionalities for creating, reading, updating, and deleting audit records, as well as conducting safety audits and reporting safety issues.
- ✓ This system helps authorities and stakeholders in ensuring the safety of road infrastructure and addressing potential hazards promptly.
- ✓ The Road Safety Audit System Proof of Concept (POC) provides a comprehensive framework for managing road safety audits and issues effectively. With functionalities encompassing CRUD operations for audit records, conducting safety audits for roads and intersections, and reporting safety issues identified during audits, this system offers a structured approach to enhance road safety measures.
- ✓ Through this POC, the foundation is laid for further development and refinement, aiming to streamline road safety management processes and contribute to the creation of safer road environments

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INTRODUCTION OF THE PROJECT

- The Road Safety Audit System addresses the critical need for proactive measures to enhance road safety.
- With increasing traffic volumes and evolving road infrastructure, regular safety audits are essential to identify and mitigate potential risks.
- This project aims to streamline the process of conducting safety audits and managing safety issues effectively.
- By providing a centralized platform for audit management and issue reporting, the system contributes to fostering safer road environments for motorists, pedestrians, and cyclists.
- The main goal of this system is to enhance road safety by conducting audits and effectively managing and resolving safety issues.
- By having a centralized system to record and track safety audits and issues, it becomes easier to identify problem areas and take appropriate actions to improve road safety.

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MODULE DESCRIPTION

The problem statement is about developing a Road Safety Audit System Proof of Concept (POC). The system should have the ability to perform CRUD operations (Create, Read, Update, Delete) on audit records. It should also include a function called "conduct road_safety_audits(audit_id)" which allows conducting safety audits of roads and intersections. Additionally, there should be a function called "report_safety_issues(issue_id)" which enables reporting and tracking road safety issues identified during the audits.

- **CRUD OPERATIONS FOR AUDIT RECORDS:**

This module enables users to perform CRUD operations (Create, Read, Update, Delete) on audit records.Users can create new audit records by providing details such as audit ID, location, auditor, and date/time.Existing audit records can be retrieved, updated with new information (e.g., location), or deleted as needed.

- **CONDUCT ROAD SAFETY AUDITS:**

This module facilitates the conduction of safety audits for roads and intersections.

Users can initiate safety audits by providing the audit ID corresponding to the location to be audited.

The system evaluates various factors during audits, including road conditions, traffic signs, road markings, and visibility, to assess safety levels.

- **REPORT SAFETY ISSUES:**

This module allows users to report and track safety issues identified during audits.

Users can report safety issues associated with a specific audit ID, providing descriptions and severity levels for each issue.Reported safety issues are tracked within the system, enabling further analysis and resolution by stakeholders

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ALGORITHM

1. Initialization: Define classes for Audit and SafetyIssue with their attributes.
2. Create Databases: Initialize dictionaries to store audits, issues, and unsuccessful audits.
3. Create Audit Function: Define a function to create a new audit entry.
4. Read Audit Function: Implement a function to read an audit based on the provided audit ID.
5. Update Audit Function: Create a function to update existing audit details.
6. Delete Audit Function: Implement a function to delete an audit entry.
7. Report Safety Issue Function: Define a function to report safety issues related to an audit.
8. Conduct Safety Audit Function: Implement a function to conduct safety audits for a given audit ID.
9. Check Road Conditions Function: Define a function to assess road conditions during an audit.
10. Check Traffic Signs Function: Implement a function to assess the condition and visibility of traffic signs during an audit.
11. Check Road Markings Function: Define a function to assess the condition and visibility of road markings during an audit.
12. Check Visibility Function: Implement a function to assess visibility conditions at intersections and for pedestrians during an audit.
13. User Interaction Loop: Set up a while loop to continuously prompt the user for actions.
14. User Options: Provide options for creating, reading, updating, and deleting audits, conducting safety audits, reporting safety issues, and exiting the program.
15. Handle User Input: Based on the user's choice, execute the corresponding function or action.

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OUTPUTS

OUTPUT 1:

OPTION 1: CREATE

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 1
Enter audit ID: 11
Enter location: STREET G
Enter auditor: JOHN
Enter date and time (YYYY-MM-DD HH:MM:SS): 2024-04-16 5:30:00
Audit created successfully.
```

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 1
Enter audit ID: 1
Already record exists with the same audit_id, please enter with a different ID
```

OPTION 2: READ

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 2
Enter audit ID to read: 1
Audit ID: 1, Location: Intersection A, Auditor: John Doe, Date Time: 2023-04-25 09:00:00
```

OPTION 3: UPDATE

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 3
Enter audit ID to update: 11
What would you like to update?
1. Location
2. Auditor
3. Date
Enter your choice: 1
Enter new location: STREET H
Location updated successfully.
```

OPTION 4: DELETE

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 4
Enter audit ID to delete: 11
Are you sure to delete record ? (Enter yes or no)
YES
Audit record deleted successfully.
```

OPTION 5: CONDUCT SAFETY AUDIT

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 5
Enter audit ID to conduct safety audit: 1
Conducting safety audit for Audit ID: 1, Location: Intersection A, Auditor: John Doe, Date Time: 2023-04-25 09:00:00
ENTER THE REVIEWS OF ROAD CONDITIONS (road surface, potholes, cracks): 3.2
ENTER THE REVIEWS OF TRAFFIC SIGNS (condition and visibility of traffic signs): 2.2
ENTER THE REVIEWS OF ROAD MARKINGS (condition and visibility of road markings): 3.2
ENTER THE REVIEWS OF VISIBILITY CONDITIONS AT INTERSECTIONS AND PEDESTRIANS: 4.5
Safety audit conducted unsuccessful
```

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 5
Enter audit ID to conduct safety audit: 1
Conducting safety audit for Audit ID: 1, Location: Intersection A, Auditor: John Doe, Date Time: 2023-04-25 09:00:00
ENTER THE REVIEWS OF ROAD CONDITIONS (road surface, potholes, cracks): 3.2
ENTER THE REVIEWS OF TRAFFIC SIGNS (condition and visibility of traffic signs): 4.2
ENTER THE REVIEWS OF ROAD MARKINGS (condition and visibility of road markings): 2.8
ENTER THE REVIEWS OF VISIBILITY CONDITIONS AT INTERSECTIONS AND PEDESTRIANS: 3.6
Safety audit conducted successfully.
```

OPTION 6: REPORT THE ISSUE

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 6
Enter related audit ID: 1
Enter issue ID: 1
ISSUES are: TRAFFIC SIGNS(condition and visibility of traffic signs)
Enter severity of the issue: MEDIUM
Safety issue reported successfully.
```

```
Choose an option:
1. Create audit
2. Read audit
3. Update audit
4. Delete audit
5. Conduct safety audit
6. Report safety issue
7. Exit
Enter your choice: 6
Enter related audit ID: 1
Enter issue ID: 1
No issues with this audit_id
```

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CONCLUSION

The Road Safety Audit System POC demonstrates functionality encompassing the essential aspects of managing road safety audits, from recording audit data to conducting audits and reporting safety issues. By incorporating CRUD operations, audit conduction, and issue reporting functionalities, the system offers a comprehensive framework for enhancing road safety through proactive assessment and mitigation of potential hazards. Further development and refinement based on user feedback and additional requirements can strengthen the system's effectiveness in promoting safer road environments

CHAPTER-9

REFERENCES

- https://chat.openai.com/c/b56f9c6e-5e56-4dd8-9646-1e515c9cb56d
- google, class notebook