

A MAJOR PROJECT REPORT ON
Road and Transportation Maintenance System

A report Submitted in partial fulfilment of the requirements of the degree

Bachelor of Technology
IN
COMPUTER SCIENCE AND ENGINEERING

Submitted by

D.JAHNAVI(R170346)



Under the guidance of

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RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES,

RK Valley,

AS A PART OF MAJOR PROJECT

May 2023.

Acknowledgement

The satisfaction that accompanies the successful completion of any task would be incomplete without the mention of the people who made it possible and whose constant guidance and encouragement crown all the efforts success.

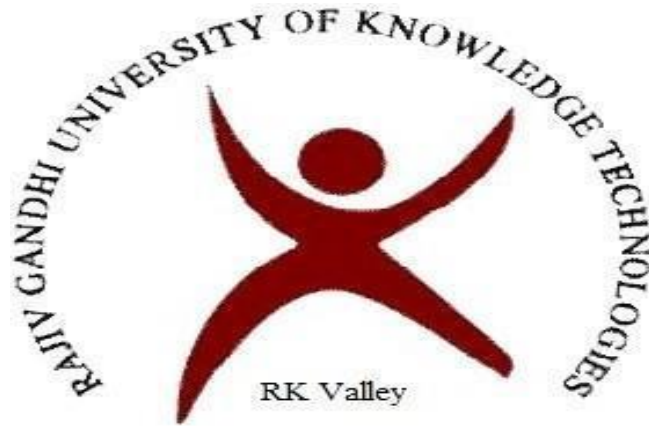
I am extremely grateful to our respected Director, Prof. K. SANDHYA RANI for fostering an excellent academic climate in our institution.

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My sincere thanks to all the members who helped me directly and indirectly in the completion of project work. I express my profound gratitude to all our friends and family members for their encouragement.

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
RAJIV GANDHI UNIVERSITY OF KNOWLEDGE
TECHNOLOGIES, RK VALLEY ,
May 2023.**



CERTIFICATE

This is to certify that the report entitled “**Road and Transportation Maintenance System**” submitted by D. Jahnavi(R170346) partial fulfilment of the requirements for the award of Bachelor of Technology in Computer Science and Engineering is a bonafide work carried out by them under my supervision and guidance.

The report has not been submitted previously in part or in full to this or any other University or Institution for the award of any degree or diploma.

E. Susmitha,
Project Internal Guide,
Computer Science and Engineering,
R.K Valley, RGUKT.

N. Satyanandaram,
Head of the Department,
Computer Science and Engineering,
R.K.Valley, RGUKT.

DECLARATION

We are certifying that, I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature of the student

D. JAHNAVI

R170346

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6.1 Conclusion.	
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ABSTRACT

Roads are the transport infrastructures which play an important role in supporting the economic growth of a region. Therefore, it is necessary to do maintenance efforts so that the roads can function optimally. Recently, there is a rapid development of road transportation network. This situation arises due to the number of vehicles on the road that keeps increasing year by year. Thus, this will increase the possibility of dangerous situations to the road users if roads are not being maintained appropriately. Therefore, in order to keep the road in safe condition, the road management activity should be improved.

So, Here in Cube highways provides a complete software system for road management. It invests in road and highway projects along with other select infrastructure sectors in India. Maintenance all activities such as accidents, issues, bills, safety, Assessment of road pavement conditions in the roads which are maintained by the company.

Tools and Technologies:

Company provides apps and websites for easy maintenance. The Technologies used for frontend development are JavaScript, html, CSS, bootstrap, angular and backend development uses mongo dB, NodeJS, express JS.

1.INTRODUCTION

Road Maintenance means to protect and to repair the construction elements of the road in order to sustain its condition. An effective Road Maintenance Management System (RMMS) is needed in order to maintain the Roads and Highways effectively.

1.1 PURPOSE

This website is used to maintain the activities related to Roads and Highways. The Purpose of the website is to reduce the manpower in the roads, and all will be done in software itself. If there are any type of issues (accidents, bills, pavements, assets, incidents) all would be maintained in the software Itself.

It is also used for newly constructing roads. This website is used to store the required information for construction example Raw Materials, Labour, Payments and Bills etc...

1.2 FEATURES

This website is used to provide the information about accidents, issues, incidents occur in the particular road. It also contain the details about Bills, Pavements, Vendors and all the details about how many vehicles are passed on the road, how many accidents or issues happening on the particular road etc...

Whatever Issues happening on the road are updated and filled in this website we store the information and maintain the activities in the road. If the road has any Pothole or any issues(damages) in the road and the manager report in the website, then the related person can see and rectify or reconstruct that particular damages. It also manages the assets (lights, signboards, footpath etc..) on the highways.

2. REQUIREMENT ANALYSIS

2.1 Requirement Specification

2.1.1 Functional requirements

- Graphical User Interface to interact with the website.
- MongoDB and NodeJS to store and retrieve the information.

2.1.2. Hardware Requirements

- System: Pentium Dual Core
- Hard Disk: 120 GB
- Monitor: 15'' LED
- Input Devices: Keyboard, Mouse
- Ram: 1 GB

2.1.3. Software Requirements

- Operating system: Windows 10
- Coding Language: HTML, CSS, JavaScript, Bootstrap, Angular, NodeJS.
- Tool: Visual Studio
- Database: MongoDB.

2.2 Technologies Used

HTML

It is a markup language for formatting and displaying web documents and web pages. It gives basic structure to the webpage without any styling. HTML elements tell the browser how to display the content. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript for styling and functionality.

CSS

It gives styling for the web pages created by HTML. It gives ‘look and feel’ to the website.

Types of CSS

- Inline CSS (Using styles as attributes in html elements)
- Internal CSS (Including a separate Style tag in html document)
- External CSS (Using external file for styling)

Bootstrap

Bootstrap is a CSS framework which helps in developing web pages very faster and with little efforts. Helps to customize the CSS properties. Used for developing responsive and mobile- first websites. Components like navbar, carousel, utility, cards, dropdowns, buttons etc.

JavaScript

JavaScript is used to develop interactive web applications. Used to develop Dynamic websites. JavaScript is the programming language of the Web. Responsible for performing actions in a website.

JavaScript is a high-level, often just-in-time compiled language that conforms to the ECMAScript standard.

Angular

Angular is a development platform, built on TypeScript. As a platform, Angular Includes:

1. A component-based framework for building scalable web applications.
2. A collection of well-integrated libraries that cover a wide variety of features, including routing, forms management, client-server communication, and more.
3. A suite of developer tools to help you develop, build, and update your code.

NodeJS and MongoDB

Node. JS is a JavaScript that commonly powers web servers. Developers can use these two pieces of technology, along with MongoDB Atlas, a fully managed, multi-cloud database service, to rapidly create modern applications.

MongoDB and Node.js have a long history of working well together and are paired in many popular tech stacks, including the MEAN stack (MongoDB, Express.js, AngularJS, and Node.js) and more recently, the MERN stack (MongoDB, Express.js, React.js and Node.js).

3. SOFTWARE ENVIRONMENT

Visual Studio Code (IDE)

Visual Studio Code, also commonly referred to as VS Code is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.

Visual Studio code is a free, lightweight but powerful source code editor that runs on your desktop and on the web and is available for windows, macos, Linux, and RaspberryPi OS. It comes with built-in support for JavaScript, Typescript, and Node.js and has a rich ecosystem of extensions for other programming languages (such as C++, C#, Java, Python, PHP, and Go), runtimes (such as .NET and Unity), environments (such as Docker and Kubernetes), and clouds (such as Amazon Web Serives, Microsoft Azure, and Google Cloud Platform).

4. IMPLEMENTATION

4.1 Graphical user interface

The user interface is kept simple and understandable. The user need not take any additional effort to understand the functionality and navigation in the application. The UI designing should be easily understandable and should know where the input is given. Hints are given to help the user in giving the correct input.

4.2 Logic & Sample Screenshots

There would be an Accidents Module which shows the details about all the accidents occur in the road.

- In Accidents page there will be 4 components.
- ACCIDENT LIST.

On clicking on the accidents list page, we redirected to accident details page. In accident details page we are showing the details of the accident. In that page I made a change that every accident should have a vehicle and every vehicle should have a driver for it. I added a FORM PAGE AND DETAILS displaying of vehicle and driver and I display and update the details in the form page itself after submitting the vehicle driver details and I added some alerts based on requirement.

ROADAID | Admin

adminv2.hydfm.com/apel/accidents/viewAccident?id=ACC-2056&ind=0&sortBy=createdAt&sortOrder=-1&page=1&limit=10&skipCount=0&status=ALL&fl...

Search by Issue Category / T

Documentation Download APP

Accidents

- Accident List
- Custom Accident
- Accident Map
- Accident Codes

Enter Driver Details

Type of Licence

☐ Valid Permanent Licence
☐ Learner Licence
☐ Without Licence
☐ Not Known

Licence Number

Enter Licence Number

Gender

☐ Male
☐ Female
☐ Others

Age

Enter Age of Driver

Type of Injury

Choose

Type Of Traffic Violation

☐ Over Speeding
☐ Jumping Red Light
☐ Driving on Wrong Side
☐ Drunken Driving
☐ Use of Mobile Phone
☐ No Violation
☐ Not Known

Safety Device

Choose

Submit

Pedestrian

Pedestrians Involved

78°F Partly cloudy

Search

ENG IN

12:48 AM 5/3/2023

ROADAID | Admin

adminv2.hydfm.com/apel/accidents/viewAccident?id=ACC-2056&ind=0&sortBy=createdAt&sortOrder=-1&page=1&limit=10&skipCount=0&status=ALL&fl...

Search by Issue Category / T

Documentation Download APP

Accidents

- Accident List
- Custom Accident
- Accident Map
- Accident Codes

Enter Vehicle Details

Vehicle Mode Type*

Choose

Identification details (If any)

Identification details

Loading Type

Choose

Load Condition

Choose

Damage Side

☐ Front
☐ Rear
☐ Side
☐ Top
☐ Bottom
☐ Unknown

Disposition

Choose

Number of Non Injured

Number of Non-Injured

Number of Unknown persons

Number of Unknown persons

Enter Driver Details

Type of Licence

☐ Valid Permanent Licence
☐ Learner Licence
☐ Without Licence
☐ Not Known

Licence Number

Enter Licence Number

Gender

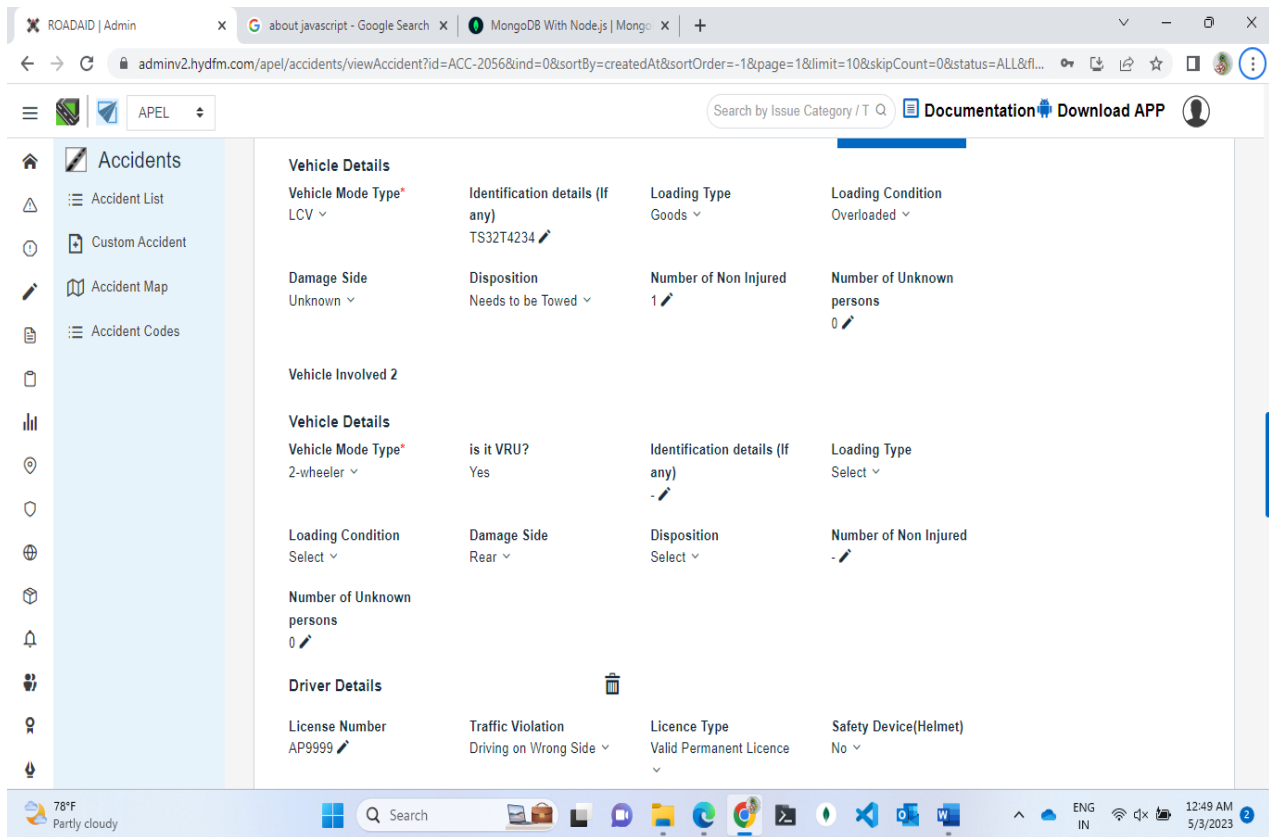
☐ Male
☐ Female
☐ Others

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Search

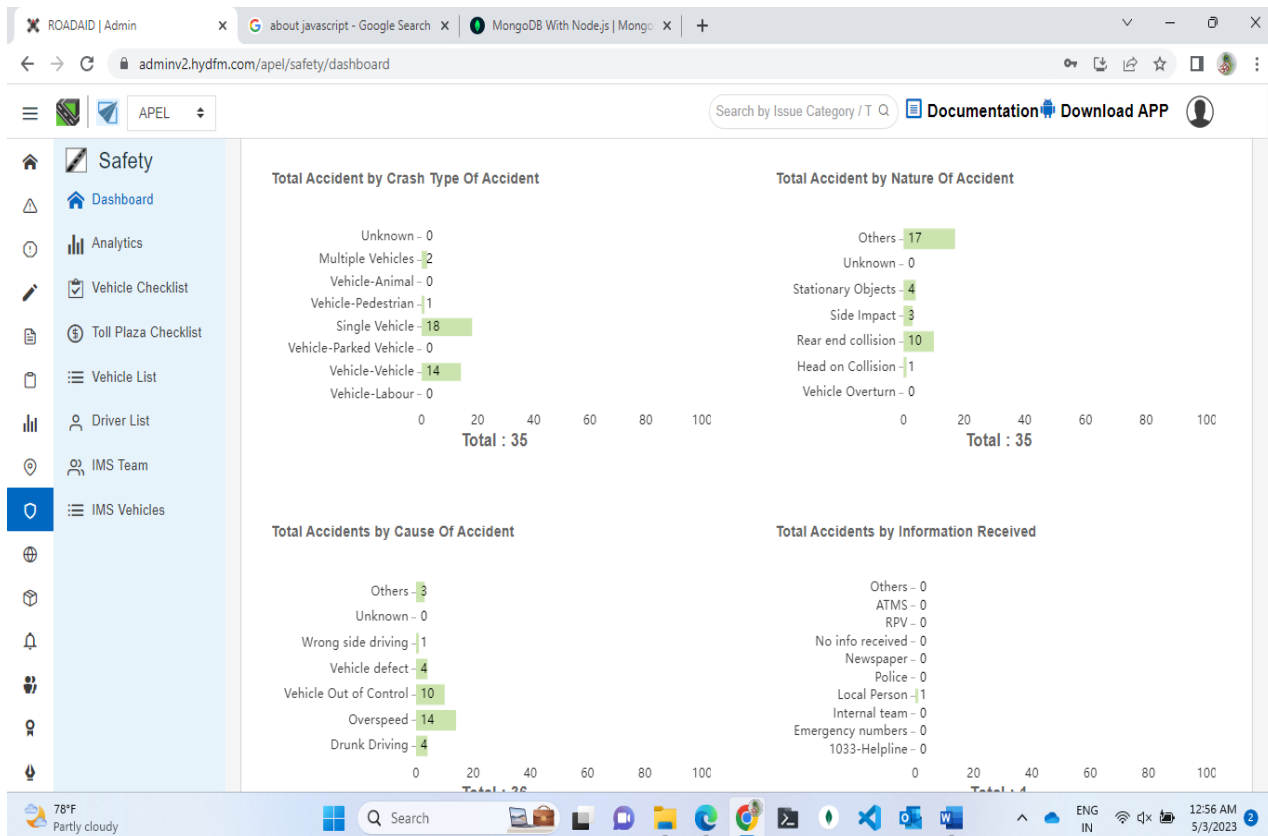
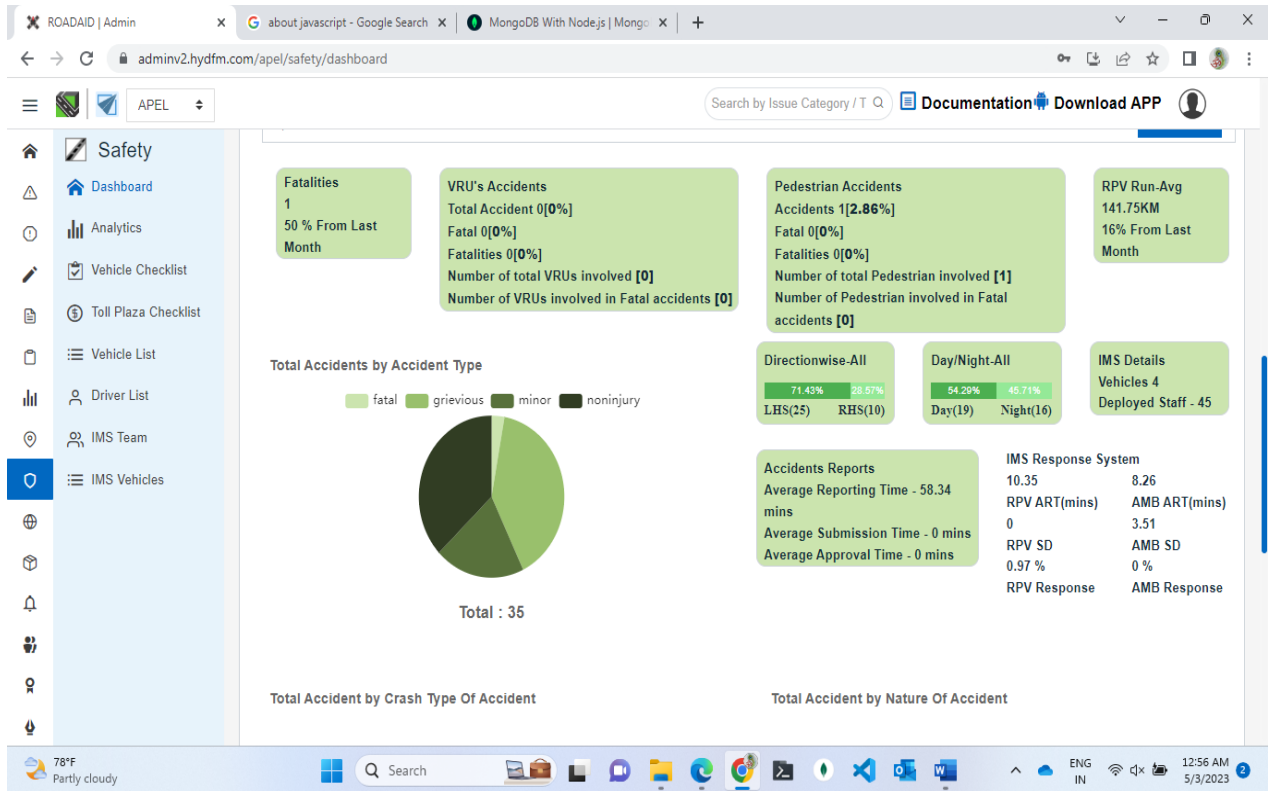
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I created this whole component (SAFETY DASHBOARD) in website.

In Safety dashboard module we display the analytics of the accidents, Average issues raised, History of Updates in accidents. All these issues and accidents analytics we displayed using Pie chart, Bar charts, Line graphs etc.



In INCIDENTS COMPONENT we are displaying all the incidents that are occurred. we created a new module for incidents. In this incidents module 4 components are available.

➤ I created INCIDENTS LIST and DETAILS components

ROAD AID | Admin

adminv2.hydfm.com/apel/incident/list

Search by Issue Category / T

Documentation Download APP

Incident

Incident List

Incident Map

Create Incident

Custom Incident

Incident Strip Chart

ALL ISSUES TO DO IN-PROGRESS COMPLETED CLOSED

SHOW ON PAGE: 10 DOWNLOAD

ID	INCIDENT TYPE	PROPERTIES	CHAINAGE	PRIORITY	STATUS	REPORTEE	ASSIGNEE	DATE CREATED	TAI
INC-5698	Incidents	Vehicle Breakdown	191.9	HIGH	OPEN	RPV-1	-	19-Apr-23, 10:42:35 AM	20-
INC-5697	Incidents	Vehicle Breakdown	185.4	HIGH	OPEN	RPV-1	-	19-Apr-23, 8:57:12 AM	20-
INC-5696	Incidents	Vehicle Breakdown	209.4	HIGH	OPEN	RPV-1	-	18-Apr-23, 12:45:47 PM	19-
INC-5695	Incidents	Vehicle Breakdown	176.45	HIGH	OPEN	RPV-1	-	18-Apr-23, 7:22:29 AM	19-
INC-5694	Incidents	Vehicle Breakdown	162.15	HIGH	OPEN	RPV-2	-	18-Apr-23, 7:14:42 AM	19-
INC-5693	Incidents	Vehicle Breakdown	174.54	HIGH	OPEN	RPV-1	-	17-Apr-23, 4:38:01 PM	18-
INC-5692	Incidents	Vehicle Breakdown	180.4	HIGH	OPEN	RPV-1	-	17-Apr-23, 4:04:10 PM	18-
INC-5691	Encroachment	Shelter	153.05	HIGH	IN-PROGRESS	RPV-2	-	17-Apr-23, 12:21:32 PM	02-
INC-5690	Incidents	Vehicle Breakdown	209.64	HIGH	OPEN	RPV-1	-	17-Apr-23, 2:13:58 AM	18-
INC-5689	Incidents	Vehicle Breakdown	168.4	HIGH	OPEN	RPV-2	-	16-Apr-23, 11:41:35 AM	17-

Previous 1 2 3 ... 570 Next

ROAD AID | Admin

adminv2.hydfm.com/apel/incident/detail?id=INC-5693&ind=5&sortBy=createdAt&sortOrder=-1&page=1&limit=10&skipCount=0&status=all&flag=1

Search by Issue Category / T

Documentation Download APP

Incident

Incident List

Incident Map

Create Incident

Custom Incident

Incident Strip Chart

DETAILS IMAGE MAP ISSUE PROGRESS CHART COMMENTS HISTORY SIMILAR ISSUES

INC-5693

Category Incident

Incident Type Incidents

Properties Vehicle Breakdown

GPS Coordinates Lat: 16.0781542 | Lon: 77.9017691

Chainage 174.54

Status OPEN

Date Created 17-Apr-23, 4:38:01 PM

Reporter Rpv-1

Authority Type INTERNAL

Direction RHS

Road Type MCW

Priority HIGH

Expected Completion 18-Apr-23, 4:38:00 PM

Assignee Not Assigned

Description Lorry machinery problem stopped shoulder side safety cones provide

Download INC-5693 Download Images

17 Apr 2023, 4:16:19 PM Lat: 16.0781542 Lon: 77.9017691

User: Rpv-1, Time: 17-Apr-23, 5:04:23 PM Lat: 16.0778666 | Lon: 77.9019259

ISSUE DASHBOARD

➤ SUMMARY OF ISSUE DASHBOARD OF ALL SPVS.

➤ Created a table for the summary.

ROAD AID | Admin

adminv2.hydfm.com/roadAnalytics/issue-dashboard

ROAD AID Documentation Download APP Reddy

Select Month: May Select Year: 2023 Issue Category: Select Issue Category Authority Type: IC Search

SPV NAME	PROJECT LENGTH(KM)	NO OF ISSUES CREATED PER KM	NO OF ISSUES CREATED	IC LETTERS	START DATE	END DATE	TOTAL CLOSED	OPEN / INPROGRESS	LETTER SUBMISSION DATE	OPEN							IN-PROGRESS		
										HIGHWAY	INCIDENT	PAVEMENT	ROAD FURNITURE	STRUCTURES	TOLL PLAZA	TOTAL	HIGHWAY	INCIDENT	PAVEMENT
Jmtl	109.31	2	215	Apr-Letter-1	10-Apr-23	10-May-23	14	149	-	76	0	4	51	0	0	131	18	0	0
Kmtl	80	-	7	Apr-Letter-4	17-Apr-23	16-May-23	-	5	-	0	0	4	0	0	0	4	0	0	1
				Apr-Letter-5	17-Apr-23	01-May-23	-	2	-	0	0	0	1	0	0	1	0	0	0
Mbel	57.305	2	106	Apr-Letter-1	11-Apr-23	10-May-23	46	59	-	41	3	0	3	0	0	47	12	0	0
Ndepl	80.2	1	54	Apr-Letter-1	03-Apr-23	03-May-23	45	5	-	0	0	0	0	0	0	0	5	0	0
Total	326.81	5	382	-	-	-	105	220	-	117	3	8	55	0	0	183	35	0	1

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ROAD AID | Admin

about javascript - Google Search

MongoDB With Node.js | Mongo

adminv2.hydfm.com/roadAnalytics/issue-dashboard

ROAD AID

DocumentationDownload APPReddy

Select Month

May

Select Year

2023

Issue Category

Select Issue Category

Authority Type

IC

Search

SPV NAME	PROJECT LENGTH(KM)	NO OF ISSUES CREATED PER KM	NO OF ISSUES CREATED	IC LETTERS	START DATE	END DATE	TOTAL CLOSED	OPEN / INPROGRESS	LETTER SUBMISSION DATE	INCOMPLETE				COMPLETED							CLOSED				
										ROAD FURNITURE	STRUCTURES	TOLL PLAZA	TOTAL	HIGHWAY	INCIDENT	PAVEMENT	ROAD FURNITURE	STRUCTURES	TOLL PLAZA	TOTAL		HIGHWAY	INCIDENT	PAVEMENT	
Jmtl	109.31	2	215	Apr-Letter-1	10-Apr-23	10-May-23	14	149	-	0	0	0	0	29	0	3	20	0	0	52	4	2	3	8	
Kmtl	80	-	7	Apr-Letter-4	17-Apr-23	16-May-23	-	5	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Apr-Letter-5	17-Apr-23	01-May-23	-	2	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mbel	57.305	2	106	Apr-Letter-1	11-Apr-23	10-May-23	46	59	-	0	0	0	1	0	0	0	0	0	0	0	32	0	2	1	
Ndepl	80.2	1	54	Apr-Letter-1	03-Apr-23	03-May-23	45	5	-	0	0	0	0	4	0	0	0	0	0	4	30	4	0	1	
Total	326.81	5	382	-	-	-	105	220	-	0	0	0	1	33	0	3	20	0	0	56	66	6	5	2	

78°F Mostly cloudy

Search

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1:29 AM 5/3/2023

LITIGATION MODULE

- Added Litigation module. It consists of all the litigations list created.
- It has Date to Date from and some specifications.

The screenshot shows the ROADAI LITIGATION module interface. The top navigation bar includes 'Roads List', 'Legal Reports', and 'Map'. The main content area has a 'LITIGATION' tab selected. Below the tab, there are filters for 'From Date' (2022-09-01), 'To Date' (2023-05-03), 'Entity' (Select Entity), 'Type of Case' (Select Entity), and 'Filed by/Against us' (Select Entity). A 'Search' button is present. Below the filters is a table with columns: LITIGATION ID, TYPE, PETITIONER/PLAINTIFF, RESPONDENTS/DEFENDANTS, CASE NUMBER, and FILE. The table contains 9 rows of litigation data.

LITIGATION ID	TYPE	PETITIONER/PLAINTIFF	RESPONDENTS/DEFENDANTS	CASE NUMBER	FILE
LITIGATION-1	Writ Petition	SMT. DAHRIAYA	NHAI AND ORS.	WP 11420/2020	File
LITIGATION-2	Writ Petition	SMT. K. LAKSHMI BAI	THE STATE OF ANDHRA PRADESH	WP 3969/2021	File
LITIGATION-3	Writ Petition	P NAGANNA	THE STATE OF ANDHRA PRADESH & ORS.	WP 23242/2021	File
LITIGATION-1	Writ Petition	PRITHAVI SINGH AND ORS.	UNION OF INDIA AND ORS	CWP-3887-2018	File
LITIGATION-2	Writ Petition	RAJIV BANSAL AND ANR	UNION OF INDIA AND ORS	CWP-12453-2019	File
LITIGATION-3	Criminal	STATE OF HARYANA	LARSEN AND TOUBRO LTD. AND ORS.	CHI-7718-2018	File

This screenshot is similar to the one above, but it shows the 'Filed by/Against us' dropdown menu open. The menu has three options: 'Filed by us', 'Filed against us', and 'All'. The table data is the same as in the previous screenshot.

LITIGATION ID	TYPE	PETITIONER/PLAINTIFF	RESPONDENTS/DEFENDANTS	CASE NUMBER	FILE
LITIGATION-1	Writ Petition	SMT. DAHRIAYA	NHAI AND ORS.	WP 11420/2020	File
LITIGATION-2	Writ Petition	SMT. K. LAKSHMI BAI	THE STATE OF ANDHRA PRADESH	WP 3969/2021	File
LITIGATION-3	Writ Petition	P NAGANNA	THE STATE OF ANDHRA PRADESH & ORS.	WP 23242/2021	File
LITIGATION-1	Writ Petition	PRITHAVI SINGH AND ORS.	UNION OF INDIA AND ORS	CWP-3887-2018	File
LITIGATION-2	Writ Petition	RAJIV BANSAL AND ANR	UNION OF INDIA AND ORS	CWP-12453-2019	File
LITIGATION-3	Criminal	STATE OF HARYANA	LARSEN AND TOUBRO LTD. AND ORS.	CHI-7718-2018	File

USERS MODULE

1. Added user details page for all the users.
2. user details consist of what are the roads and roles accessible by user, history of the user and organisation chart.

The screenshot displays the ROADAI Admin interface. The top navigation bar includes the ROADAI logo, a search bar, and links for Documentation and Download APP. The main content area is titled 'User Details' and features tabs for PROFILE, ACTIVITY, HISTORY, and ORGANIZATION CHART. The user profile for 'Lakshmi Pv - cube' (ID: 6380736165) is shown, including their name, mobile number, email, and reporting manager. The 'Road & Roles' section lists various roles like Mbel-HO, Jmtl-HO, Nam-HO, Keti-HO, Mdt-HO, Ndepl-HO, Nds-HO, and Smtl-HO. The 'All Roads' toggle is currently off. The bottom of the page shows a Windows taskbar with the date 5/3/2023.

The screenshot displays the ROADAI Admin interface, specifically the 'User History' tab for the user 'Lakshmi Pv - cube'. The history table shows a list of actions performed by 'Sridhar Tirumala' on May 22, 2022, and by 'B Ravi Kumar' on March 29, 2023. The actions include role changes and password updates. The bottom of the page shows a Windows taskbar with the date 5/3/2023.

EDITED BY	ACTION	DATE
B Ravi Kumar	Password is changed	29-Mar-23, 2:50:21 PM
B Ravi Kumar	Reporting Manager is changed to "Hullahally Mallareddy Karna - cube"	29-Mar-23, 2:50:16 PM
Sridhar Tirumala	Roles changed from (superuser,HO) to (HO) in road WUPTL	05-May-22, 1:02:21 PM
Sridhar Tirumala	Roles changed from (superuser) to (superuser,HO) in road WUPTL	05-May-22, 1:02:21 PM
Sridhar Tirumala	Roles changed from () to (HO) in road NAM	05-May-22, 1:02:09 PM
Sridhar Tirumala	Roles changed from (superuser) to () in road NAM	05-May-22, 1:02:09 PM
Sridhar Tirumala	Roles changed from (superuser) to (HO) in road MBEL	05-May-22, 1:01:57 PM
Sridhar Tirumala	Roles changed from (superuser) to (HO) in road MBEL	05-May-22, 1:01:57 PM
Sridhar Tirumala	Roles changed from () to (HO) in road JMTL	05-May-22, 1:01:48 PM
Sridhar Tirumala	Roles changed from (superuser) to () in road JMTL	05-May-22, 1:01:48 PM

The screenshot shows the ROADAI Admin interface. The user profile for 'Lakshmi Pv - cube' is displayed. The profile includes a role of 'Not Assigned' and a reporting manager 'Hullahally Mallareddy Karna - cube'. The organization chart shows Hullahally Mallareddy Karna - cube as the manager of Lakshmi Pv - cube.

CUSTOM USER

1. Custom user page consists of data based on the filters applied.

The screenshot shows the ROADAI Admin interface. The 'Custom User' page is displayed, showing a table of users. The table is filtered by 'Admin Last Active' and 'App Last Active'. The table shows 3197 filtered users.

NAME	REPORTING MANAGER	MOBILE NUMBER	EMAIL
Chaitanya	B Ravi Kumar	9121898315	Tadepalli.Chaitanya@cubehighways.com
Pillala Navaneeth Kumar	KATHIRESAN THIYAGARAJAN	8520976824	localNAVANEETH.KUMAR@WVEL.CO.IN
RAVI KUMAR BANSLA	Ajay - cube	9927631379	localRAVIKUMARBANSLA@GMAIL.COM
Control Room-Ip-2	Dilip Kumar Pandey	8170041005	localmistp21@bthl.org
Control Room-Ip-1	Saroj Kumar	8170041002	localmistp1@bthl.org
Avinash Kumar Gupta	Saroj Kumar	7001261535	localAVINASHGUPTA813@GMAIL.COM
Srikant Mallick	Dilip Kumar Pandey	8456807270	localmistp2@bthl.org
Dilip Kumar Pandey	Sanjay Ray	8170041060	localdilip.pandey@bthl.org
Chakresh Amar Anshuman Singh	Bovin Kumar	9068959111	localCHAKRESH.SINGH@CUBEHIGHWAYS.CO
Anchit Agarwal	Neeraj Singh	8077800073	localANCHIT.AGARWAL@CHOMPL.COM

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adminv2.hydfm.com/apel/users/search

Search by Issue Category / Documentation Download APP

Users

Users List Add User Custom User

Apply Clear Collapse

Admin Last Active

App Last Active

Roads

- APEL
- DATL
- FRHL
- JMTL
- KETL
- KMTL
- MBEL
- MKTL
- NAM

Customize Users Report Filtered Users Count: 3197 Generate PDF Generate CSV

NAME	REPORTING MANAGER	MOBILE NUMBER	EMAIL
Chaitanya	B Ravi Kumar	9121898315	Tadepalli.Chaitanya@cubehighways.com
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1:39 AM 5/3/2023

ROADAID | Admin x ROADAID | Admin x about javascript - Google Search x MongoDB With Node.js | Mongo x +

adminv2.hydfm.com/apel/users/search

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Users

Users List Add User Custom User

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Admin Last Active

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Roads

Roles

- supervisor
- superuser
- admin
- Maintenance Manager
- RPV
- HO-Operations Coordinator
- Safety Site Coordinator
- Construction Manager

Customize Users Report Filtered Users Count: 3197 Generate PDF Generate CSV

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ADD CONTRACTOR

1. Added contractor form page in the module.

The screenshot shows a web browser window with the URL `adminv2.hydfm.com/apel/contractors/add`. The page is titled "Add Contractor" and is part of the "ROAD AID | Admin" application. The left sidebar contains a menu with "Contractors List" and "Add Contractor" (highlighted). The main content area is a form with the following fields:

- Contractor***: A text input field with the placeholder "Enter Contractor".
- Contractor Supervisor***: A text input field with the placeholder "Enter Supervisor Contractor".
- Date of Contract***: A date picker field with the placeholder "yyyy-mm-dd".
- Contractor Supervisor's Phone Number***: A text input field.
- Validity of Contract***: A date picker field with the placeholder "yyyy-mm-dd".
- Contractor Manager***: A text input field with the placeholder "Enter Contract Manager Nai".
- Chainages**: A section with a "1. From:" field, a "To:" field, and a "+" button to add more chainages.
- Address**: A text input field with the placeholder "Enter Address".
- Upload Files (Image/Pdf)**: A button labeled "Choose Files" and a status "No file chosen".

A "Submit" button is located at the bottom right of the form. The browser's taskbar at the bottom shows the date and time as 1:46 AM on 5/3/2023.

5. Testing

System tests are designed to validate a fully developed system to assure that it meets its requirements. The test cases are therefore designed solely based on the SRS document.

(OR)

System testing is nothing but how the customer is going to start using your application and checking whether everything is up to the mark and meeting the needs of the customer.

5.1 Unit Testing:

Unit testing, a testing technique using which individual modules are tested to determine if there are any issues by the developer himself. It is concerned with functional correctness of the standalone modules. Reduces Defects in the Newly developed features or reduces bugs when changing the existing functionality.

Improves design and allows better refactoring of code. Unit Tests, when integrated with build gives the quality of the build as well. It is the first level of functional testing. Below are the test cases on the individual modules of the designed website. The functionality of each module has been checked by the developer of the module.

5.2 Integration Testing:

Integration testing is the second level of the software testing process comes after unit testing. In this testing, units or individual components of the software are tested in a group. The focus of the integration testing level is to expose defects at the time of interaction between integrated components or units. Unit testing uses modules for testing purpose, and these modules are combined and tested in integration testing. The goal of integration testing is to check the correctness of communication among all the modules. It includes four types of approaches.

A typical software project consists of multiple software modules, coded by different programmers. The purpose of this level of testing is to expose defects in the interaction between these software modules when they are integrated.

Integration testing includes various approaches like

1. Big bang approach

2. Top-down approach
3. Bottom-up approach
4. Sandwiched Integration testing.

7. Conclusion and References

6.1 Conclusion

Road should be viewed as an important national assets. Like any other assets, road must be regularly maintained to keep them serviceable.

The primary goal of highway maintenance is maintaining the roads in a circumstance that turns to a good service and maximum safety to the travelling highway users. The aim of this software is to investigate on how to improve road maintenance management system in order to reduce time and cost.

maintenance is always a must for any structure in order to maintain its serviceability and to prevent deterioration that may shorten the service life. Maintenance works are not given the attention it should have a budget allocated for maintenance work in which seldom become a prior consideration. However, it is a fact that maintenance is the most important and the activity to be carried out to prolong or at least maintain serviceability of structure until the end of its service life.

This software shows the whole information about all the activities such as accidents, incidents, issues, pavements, assets, bills etc... using this software we can have the data about all roads which will be useful by the government. This company is responsible for the whole road including the potholes or any damages in the road street lights etc...

This software provides websites not only for the maintenance of roads and also, we develop websites and applications for the construction of roads too. Construction plays an important role in the present society. In websites we display information about the raw materials and about construction stuff.

6.2 References

For adding this features(tasks) in the project, I had referred the following

<https://angular.io/tutorial>

<https://www.geeksforgeeks.org/angular-8-introduction/>

<https://stackblitz.com/angular/>

<https://www.javatpoint.com/angular-8>

<https://stackoverflow.com/>