American International University-Bangladesh (AIUB)
Department of Computer Science
Faculty of Science &Technology (FST)
Spring 23 24

PROJECT TITLE

LEGAL DRIVER TRACKING MANAGEMENT SYSTEM

Software Requirement Engineering

Sec: **A**

By

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Sign: _____

Date: _____

1.PROBLEM DOMAIN

1.1 Background to the Problem

- **Write a background description that helps putting the project into the right context of a problem domain and gives everyone involved a common view of the project.**

In today's modern world, the administration and monitoring of drivers' legal compliance have become increasingly crucial, both from a safety and regulatory standpoint. It is of the utmost importance that commercial fleets, transportation companies, and individual drivers all comply with legal requirements and maintain valid and current driver licenses. The purpose of the "Legal Driver Tracking" system is to effectively mitigate these concerns. A comprehensive software solution has been developed with the aim of streamlining the process of monitoring and controlling the legal compliance of chauffeurs. This novel system facilitates the management of drivers' licenses, certifications, endorsements, and other documentation pertaining to compliance through a centralized and user-friendly interface.

A key benefit of the system is its capacity to augment safety through ongoing validation of driver licenses to ensure they remain valid and not expired. Real-time verification is a valuable tool for organizations to reduce the risks that arise from employing unauthorized or unqualified drivers, thereby making a significant contribution to the overall safety of roads and operations. Furthermore, the implementation of "Legal Driver Tracking" enables organizations to effectively oversee compliance, thereby diminishing the probability of incurring fines, penalties, or legal proceedings due to non-compliance, thereby contributing to the reduction of legal liabilities. Through the implementation of streamlined administrative processes and the provision of current and precise information, the system effectively optimizes costs and conserves resources. In essence, "Legal Driver Tracking" serves as an indispensable instrument for enterprises that depend on drivers, facilitating the preservation of optimal safety, operational effectiveness, and compliance standards while guaranteeing complete adherence to legal regulations. It signifies a notable advancement in the simplification of the intricacies associated with driver compliance management within the contemporary regulatory environment.

- What is the root cause of this problem? Why is this problem is so important to consider?

The problem domain of "Legal Driver Tracking" involves numerous challenges and issues related to managing driver compliance and ensuring legal adherence within organizations. Here are key elements within this problem domain:

➢ **Driver Complains and Analysis:** Organizations must monitor and manage compliance with legal requirements, including driver licenses, certifications, endorsements, and other documentation. This is a critical aspect of ensuring that drivers are qualified and authorized to perform their duties.

➢ **Documents Management:** The system must manage a multitude of documents, including driver licenses, medical certifications, training records, and endorsements. Efficiently organizing and managing these documents is essential.

➢ **Real Time Verification:** Instantly verifying the validity of driver licenses and certifications in real time is a challenge. Organizations need a system that can perform these checks swiftly and accurately.

➢ **Risk Management:** Non-compliance with legal requirements can lead to significant risks, including accidents, fines, penalties, legal liabilities, and reputational damage. Managing and mitigating these hazards is a top priority.

➢ **Driver Safety**: Ensuring driver safety is paramount. that drivers have the necessary qualifications and are not operating with expired licenses or certifications is crucial to preventing accidents and ensuring road safety.

➢ **Automation and Alerts:** Manually monitoring compliance and expiration dates is labor intensive and prone to errors. Automation is necessary to send alerts and reminders for renewals and compliance updates.

➢ **Data Security:** Handling sensitive driver information requires robust security measures to protect data from breaches or unauthorized access.

1.2 Solution to the Problem

- **What are the solutions you are going to propose to deal with the problem? Why is this solution being particularly appropriate to solve the problem? Is the solution feasible to meet the business objective?**

To address the problem of legal driver monitoring, we propose developing a comprehensive software solution designed to manage and monitor driver activities, compliance, and safety. This solution will incorporate features such as GPS tracking, speed monitoring, vehicle diagnostics, and compliance reporting. The proposed solution is particularly appropriate due to its multifaceted approach, addressing both operational efficiency and regulatory compliance. It is feasible and correlates with the business objectives of enhancing safety, reducing costs, and ensuring legal compliance. Here's an overview of the solution:

Real-Time Verification: Instantly verify driver credentials, such as license status and medical certifications, in real-time against government databases and relevant authorities.

Compliance Monitoring: Automate the tracking of driver compliance by monitoring expiration dates of licenses, certifications, endorsements, and medical clearances. Send automated alerts and notifications to drivers and administrators regarding forthcoming compliance deadlines.

Document Management: Efficiently manage and store digital copies of driver documents. Implement version control and document revision history for simple auditing.

Reporting and Analytics: Generate compliance reports and analytics to obtain insights into driver performance and adherence to legal requirements. Use data-driven insights for informed decision-making and identifying areas of improvement.

User-Friendly Interface: Provide an intuitive and user-friendly dashboard for both chauffeurs and administrators to access relevant information and perform necessary actions.

Security: Implement strong security measures to secure sensitive driver data and ensure compliance with data privacy regulations.

Audit Trail: Maintain a comprehensive audit trail of all actions and modifications within the system for compliance and legal purposes.

Legal Compliance: Ensure that the system complies with all relevant data privacy and legal requirements.

- **Provide a short description of the software being specified and its purpose, including relevant benefits, objectives, and goals.**

The software we are designing is a Legal Driver Tracking System, aimed at enhancing safety, compliance, and operational efficiency for businesses with fleets of vehicles. This system is designed to monitor and manage driver activities, assuring adherence to legal regulations and best practices in transportation. Its primary purpose is to mitigate risks associated with driver fatigue, acceleration, and non-compliance with traffic laws, thereby reducing the likelihood of accidents and legal penalties.

- **Existing studies presented in the problem area. What are the existing software solutions are available to solve the problem?**

In the area of legal driver tracking, several extant software solutions are designed to address the complexities and regulatory requirements of fleet management. These solutions range from comprehensive fleet management systems to specialized DOT compliance software, each offering unique features tailored to the requirements of transportation businesses.

Existing Software Solutions for Legal Driver Tracking:

1.DOT Compliance Software: These solutions are specifically designed to help fleets comply with Department of Transportation (DOT) regulations. They manage and streamline regulatory requirements, including monitoring driver qualifications, motor vehicle maintenance records, and Hours of Service (HOS) compliance. Examples include software that offers real-time monitoring and reporting, user-friendly interfaces, and seamless integration with existing fleet management systems.

2.Fleet Management Systems: Beyond compliance, many fleets require comprehensive management solutions that cover a wide range of operational requirements. These systems often include features for vehicle monitoring, fuel management, maintenance scheduling, and driver performance analysis. They are designed to enhance operational efficiency and safety while ensuring regulatory compliance.

3.Specialized Tracking and Analytics Tools: Some solutions concentrate on specific aspects of fleet management, such as driver behavior analysis, vehicle diagnostics, and route optimization. These tools leverage sophisticated technologies like GPS and AI to provide actionable insights that can improve safety, reduce costs, and increase operational efficiency.

Benefits and Objectives of Existing Solutions:

-Safety and Compliance: By automating compliance duties and providing real-time monitoring, these solutions help fleets operate safely and legally, reducing the risk of accidents and legal penalties.

-Operational Efficiency: Through automation and integration with existing systems, these solutions expedite operations, freeing up time and resources for core business activities.

-Risk Management: Continuous monitoring and analysis of driver behavior and vehicle conditions helps identify and mitigate risks, leading to safer and more reliable fleet operations.

The existing software solutions in the legal driver monitoring space are designed to address the multifaceted challenges of fleet management, from ensuring compliance with DOT regulations to enhancing operational efficiency and safety. By leveraging these solutions, transportation businesses can navigate the complexities of fleet management more effectively, ensuring that their operations are both compliant and optimized for success.

2.SOLUTION DESCRIPTION

2.1 System Features

Functional Requirements

1. Driver Document Management

Functional Requirements

1.1 The software shall allow authorized users to upload and store various types of driver-related documents, including driver licenses, medical certificates, vehicle registration documents, insurance certificates, etc. in various formats (PDF, images, Word, etc.).

1.2 The software shall provide a user-friendly interface for searching and retrieving driver documents based on various criteria (e.g., driver name, document type, expiration date).

1.3 Driver Document Management implements a workflow for document approval, ensuring that documents are verified and compliant with legal and company requirements and tracking the status of document approvals.

1.4 If the driver documents are nearing expiration or have expired it will send automated notifications to designated personnel.

Priority Level: High

Precondition: user have valid documents.

2. Document Verification

Functional Requirements

2.1 Users will have various types of driver documents, including licenses, medical certifications, training records, and endorsements in their profile section. Documents must be in an accepted file format (e.g., PDF, image) for verification.

2.2 The system should validate documents against predefined criteria. Criteria include document type, expiration date, and data accuracy.

2.3 The system must verify that extracted data matches the document's content. Any discrepancies should trigger alerts and be logged for review.

2.4 Documents must be checked for expiration dates. Documents nearing expiration should trigger notifications to both users and drivers.

2.5 The system should employ fraud detection techniques to identify potential counterfeit or tampered documents. Suspicious documents should be flagged for manual review.

2.6 System should integrate with licensing authorities for real-time document verification. Licenses and endorsements can be verified against official databases.

2.7 After successful verification, the document status is updated to "Verified" or a similar label. Users can easily identify compliant documents.

2.8 Users and drivers should receive notifications regarding the verification status of uploaded documents. Notifications indicate whether documents are valid, expired, or under review.

2.9 Verified documents should be archived securely for future reference. Archived documents can be retrieved for audit or compliance purposes.

Priority Level: High

Precondition: Document authenticity must be verified.

3. File case

Functional Requirements

3.1 The app shall include a "File Case" feature, allowing police officers to initiate and process traffic violation cases electronically.

3.2 Law enforcement officers must log in with their authorized accounts within the app using their provided username and password to access the "File Case" functionality within the app.

3.3 The app shall include a user-friendly interface for law enforcement officers to input case details efficiently.

3.4 Law enforcement officers shall be able to select specific violations and reasons from a predefined list within the app, along with capturing evidence (e.g., photos, videos, or notes) to support the case.

3.5 The app shall automatically record the date and time of the case filing, as well as the officer's identification information.

3.6 Law enforcement officers shall have the ability to add supplementary notes or comments to provide further context or details about the case.

3.7 The app will generate a unique case identification number for each filed case, ensuring traceability and reference for future actions.

3.8 Once a case is filed, the app shall send a digital notification to the driver's account, informing them of the case details, charges, and any time limits for payment.

3.9 The app shall securely store all case records, ensuring data integrity and compliance with relevant data protection regulations.

3.10 Law enforcement officers shall have access to a dashboard or case management system within the app, where they can review and manage the status of filed cases.

3.11 Law enforcement officers shall have the ability to search, query and export case records from the drivers account for reporting and auditing purposes.

3.12 The app shall maintain a comprehensive record of all filed cases, including case details, payments received, and actions taken, for auditing and reporting purposes.

Priority Level: High

Precondition: Police must be logged in.

4. Payment of case

Functional Requirements

4.1 The software shall provide a payment feature specifically designed for drivers to make payments to dismiss cases issued by the BRTA.

4.2 Users or drivers must log in to their accounts within the app using their provided username and password to access the payment functionality.

4.3 Users must enter their payment information, including credit card number, expiration date, and CVV code, to initiate a payment. Users will also be able to pay via bkash and nagad. Here they must enter their phone number and pin.

4.4 The payment information entered by users will be securely processed and verified with the payment gateway. For bkash and nagad payment, user will receive an otp on their account number.

4.5 The software shall calculate and display the total amount due for all outstanding cases, allowing users to pay for multiple cases in a single transaction.

4.6 Users will have the option to select individual cases to pay for or to pay for all outstanding cases at once.

4.7 Upon successful payment verification, the software shall generate a payment receipt that includes case details, payment amount, and a timestamp. This receipt should serve as proof of payment and case dismissal.

4.8 In the event of payment failure, the software shall provide clear error messages to the user, indicating the reason for the failure (e.g., insufficient funds, invalid card).

4.9 Users will receive reminders and notifications about the pending cases and the approaching deadline for payment to encourage timely resolution.

4.10 The software shall securely store payment transaction records and case dismissal receipts within the user's account for future reference.

4.11 The software shall provide real-time updates on the payment status of each case, indicating whether a payment has been successfully processed and the case has been dismissed.

4.12 To enhance security, the software should encrypt and protect all stored payment information and case-related data.

Priority Level: High

Precondition: user must be logged in.

Non-Functional Requirements

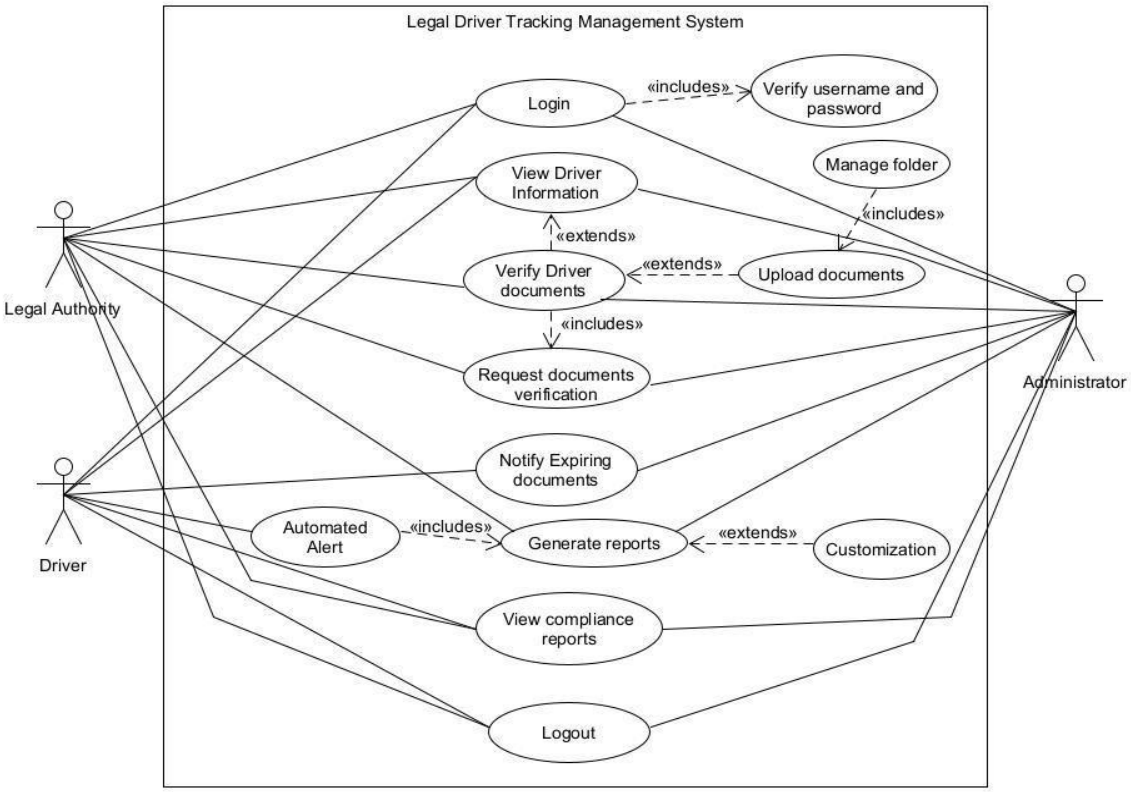
1. **Performance**: The system should be fast and responsive, able to handle many users at once without slowing down.
2. **Reliability**: Users should be able to count on the system to work without errors or unexpected crashes.
3. **Security**: The system must keep data safe from unauthorized access.
4. **Compliance**: It must follow all the rules and laws relevant to its operation.

5. **Usability**: The system should be easy for anyone to use without needing special training.

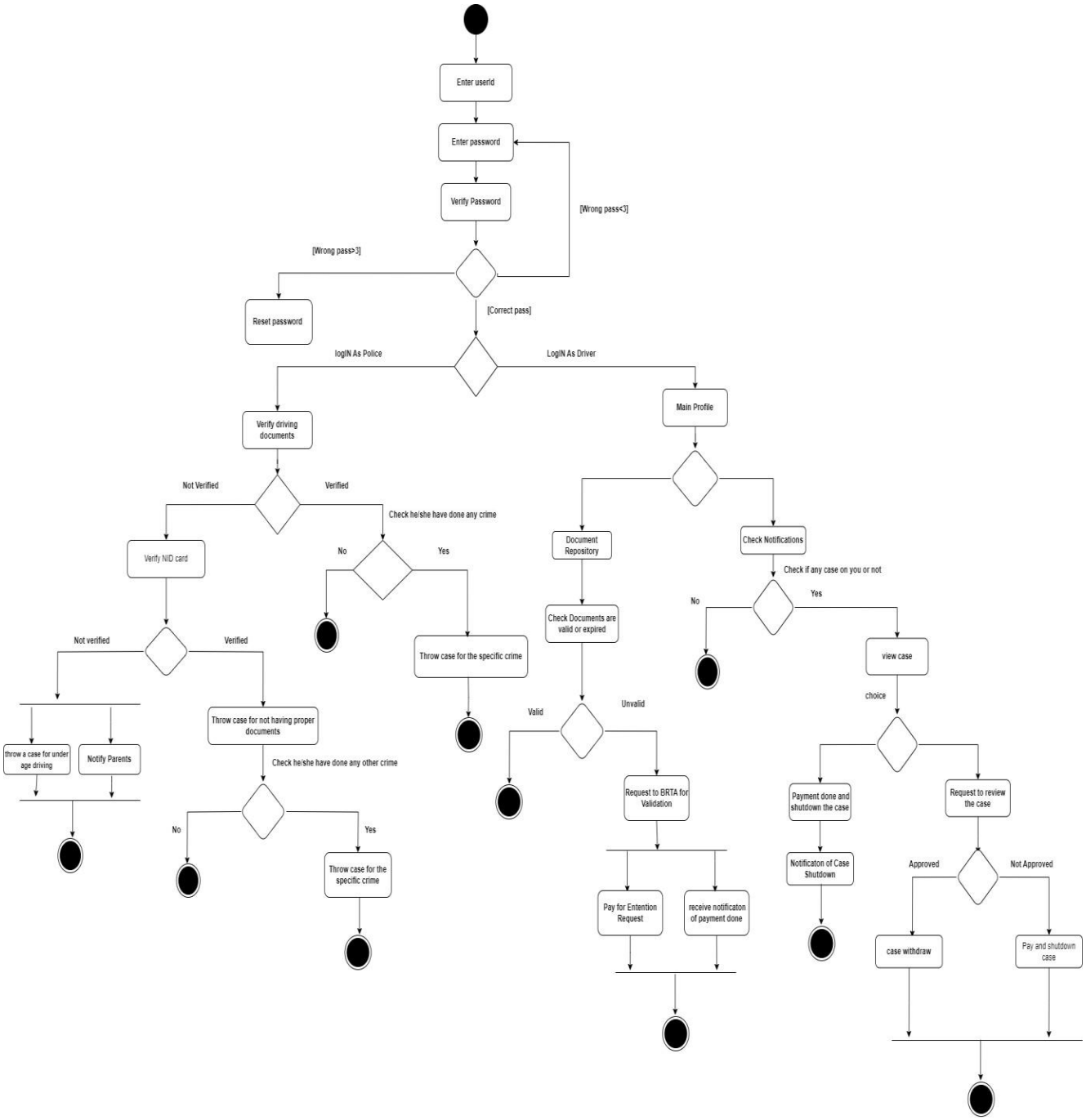
2.2 UML Diagrams

- Here are the Drawings of use-case diagram, activity diagram, class diagram to describe the solution software that we are proposing.

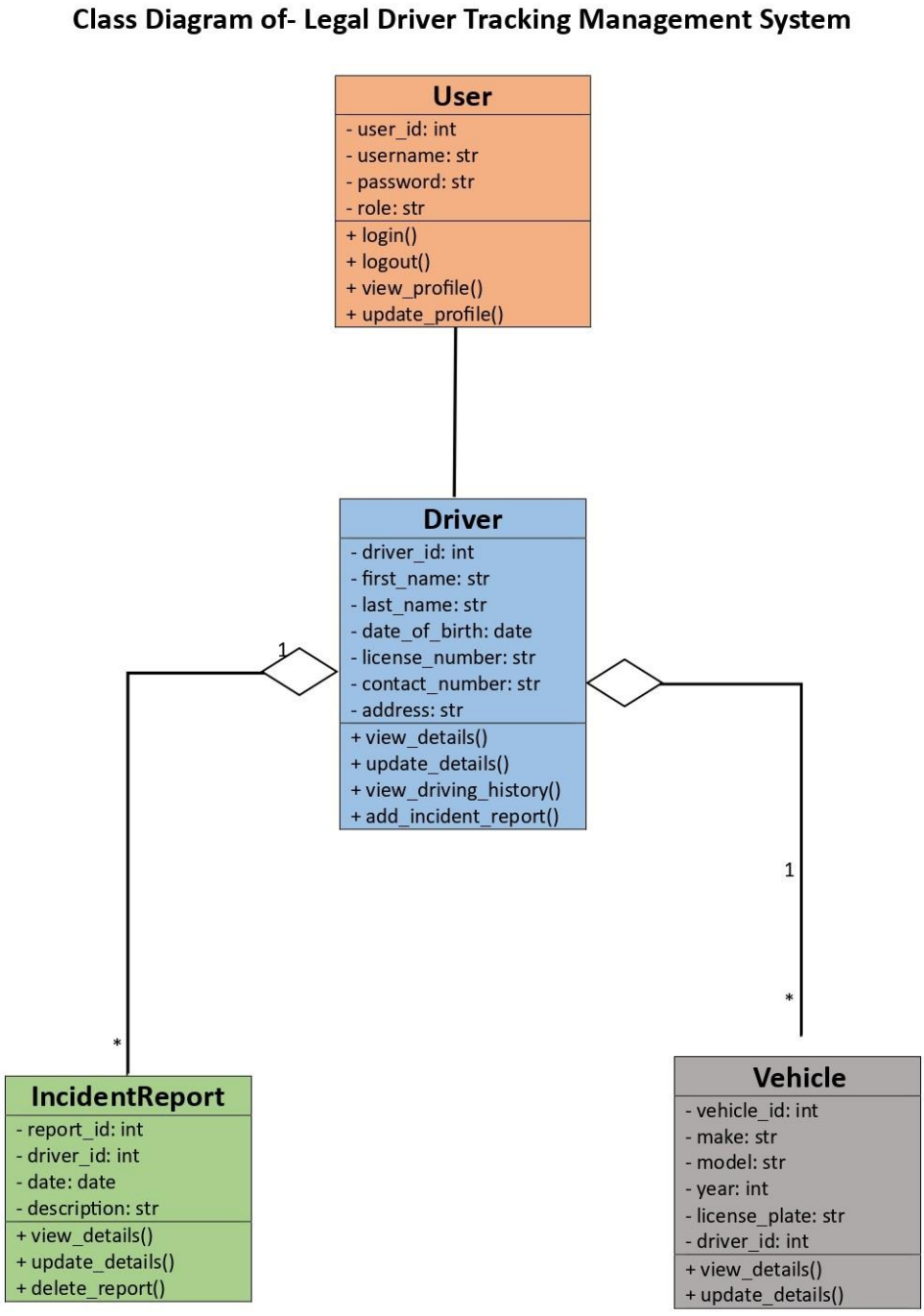
Use Case Diagram:



Activity Diagram:

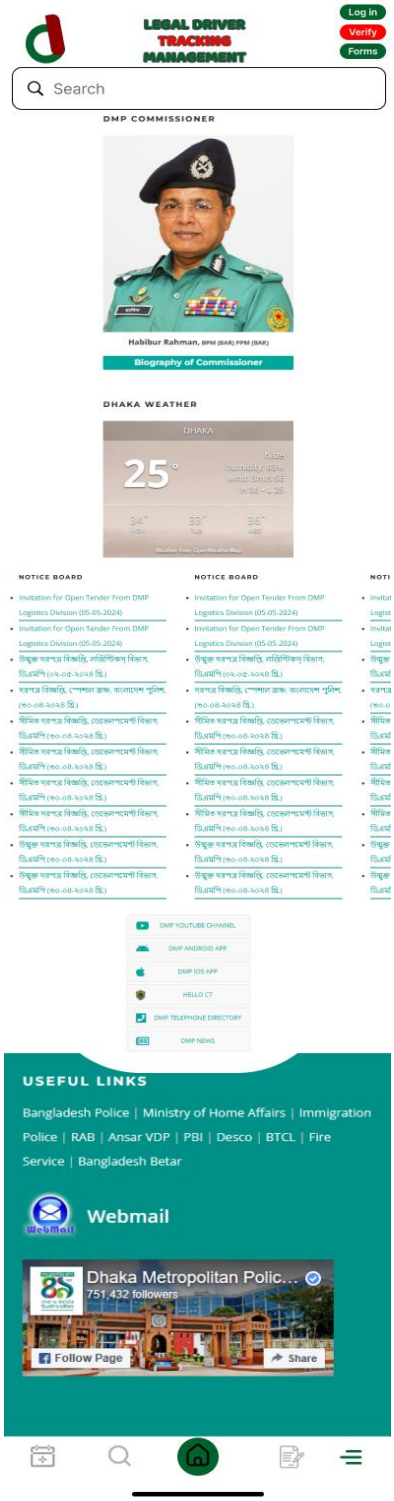


Class Diagram:

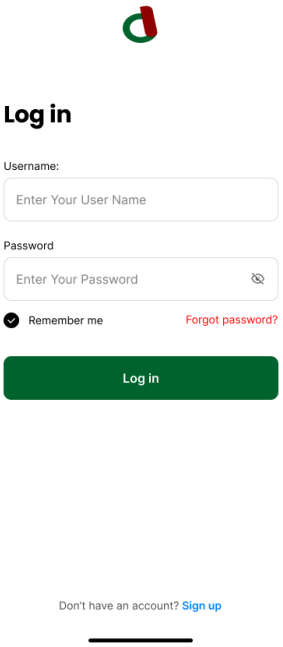


2.3UI/UX Design:

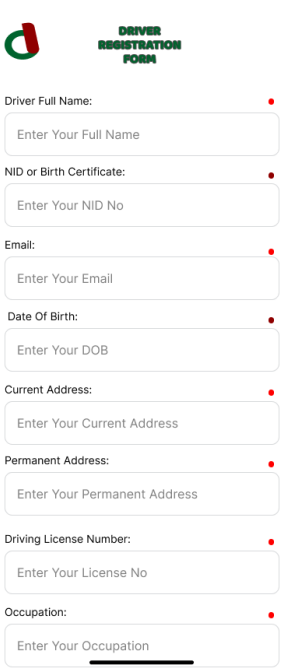
Home Page:

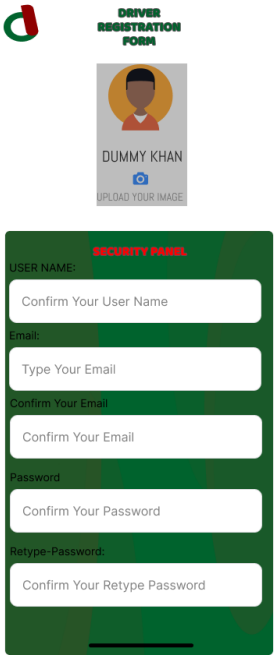


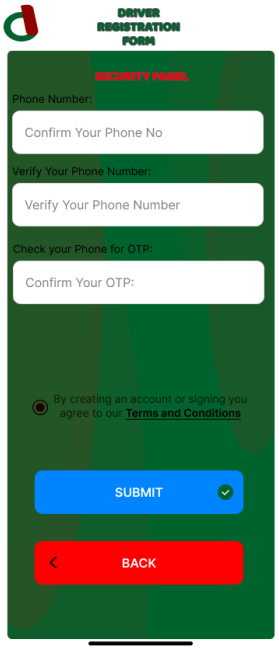
Welcome & Login Screen:



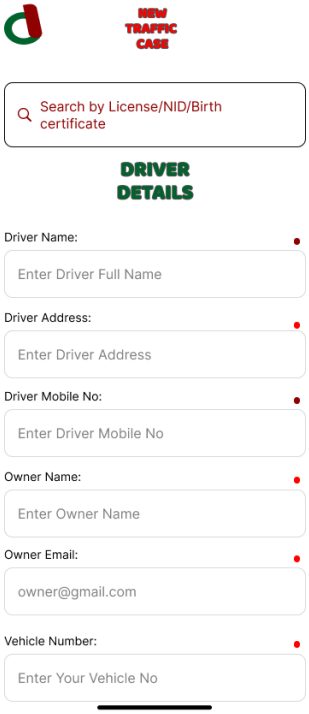
Registration:

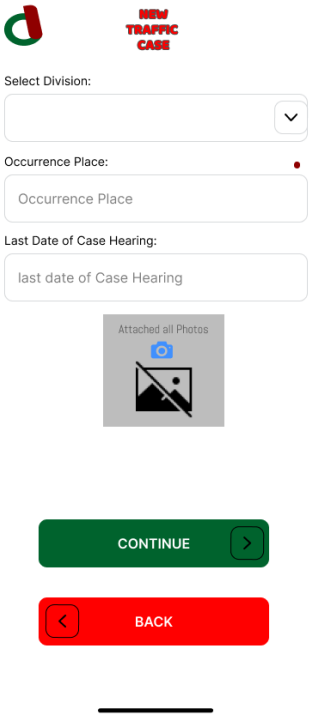


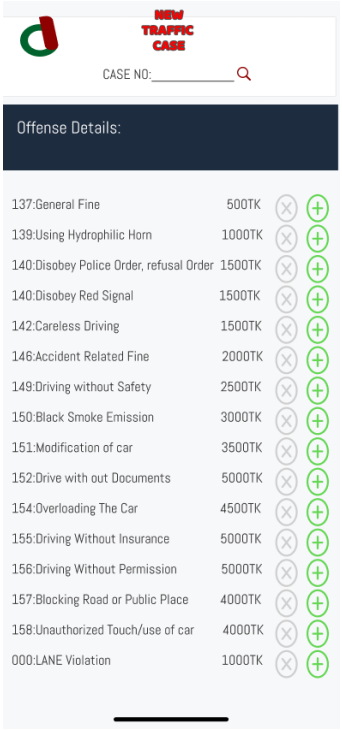


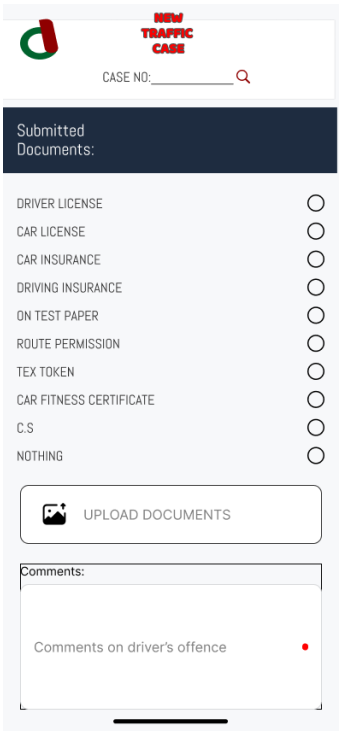


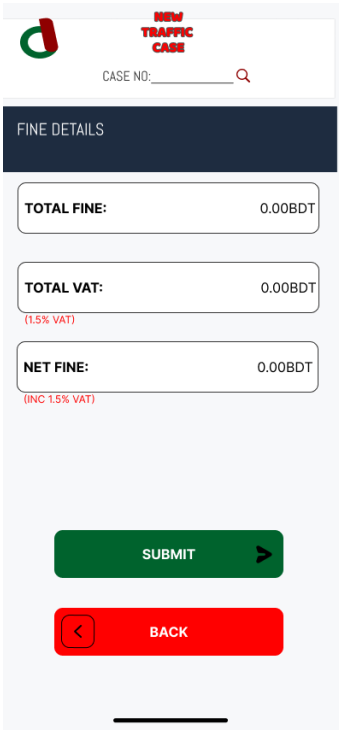
New Traffic Case:



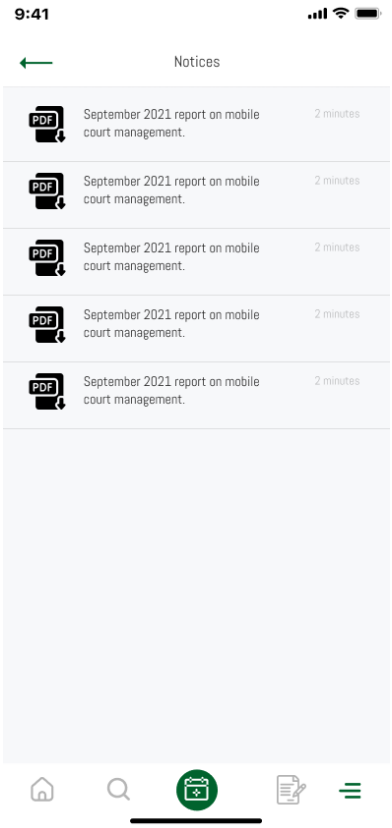








Notice board:



Social Impact

The proposed Legal Driver Tracking Software project has the potential to substantially benefit society in several ways, addressing both individual and collective needs related to safety, efficiency, and regulatory compliance in transportation.

Enhanced Public Safety

➢Reduced Accidents: By providing real-time monitoring and guidance for drivers, the software can help prevent accidents caused by fatigue, speeding, or reckless driving. This leads to safer roads for everyone, including pedestrians and other road users.
➢Improved Driver Training: Individualized driver safety profiles and trends data can emphasize common risky behaviors, motivating drivers to improve their safety records. This contributes to a secure environment for all road users.

Operational Efficiency and Cost Savings

➢Streamlined Fleet Management: The software simplifies and automates compliance work, including driving hours and inspections, making it simpler for fleet operators to manage their vehicles efficiently. This can lead to cost savings through reduced fines, lower insurance premiums, and extended vehicle lifespans.
➢Predictive Maintenance: By monitoring vehicle conditions and predicting maintenance requirements, the software supports the lifespan of vehicles, reducing downtime and maintenance costs.

Regulatory Compliance

➢Ensuring Legal Compliance: The software aids in meeting regulatory requirements, such as those established by the Department of Transportation (DOT), by automating compliance tasks and providing real-time monitoring. This ensures that fleets operate legally, benefiting not just the corporations themselves but also the public by preventing legal actions against them .

Transparency and Accountability

➢Transparency in Operations: Sharing crucial information with the public about fleet operations can enhance transparency and trust between public works organizations and the communities they serve. This can lead to improved public perception and support for these organizations [2].

Addressing Legal Risks

➢Data Protection and Privacy: While the software accumulates extensive personal information, it's crucial to ensure the protection of users' privacy and data integrity. Developers must navigate the complex legal sphere of tracking applications to mitigate legal risks and maintain user trust.

In summary, the Legal Driver Tracking Software initiative has the potential to bring about significant societal benefits by enhancing public safety, improving operational efficiency, ensuring regulatory compliance, and promoting transparency and accountability in transportation. By addressing these important areas, the project can contribute to a safer, more efficient, and more responsible transportation sector.

3 Development Plan with Project Schedule

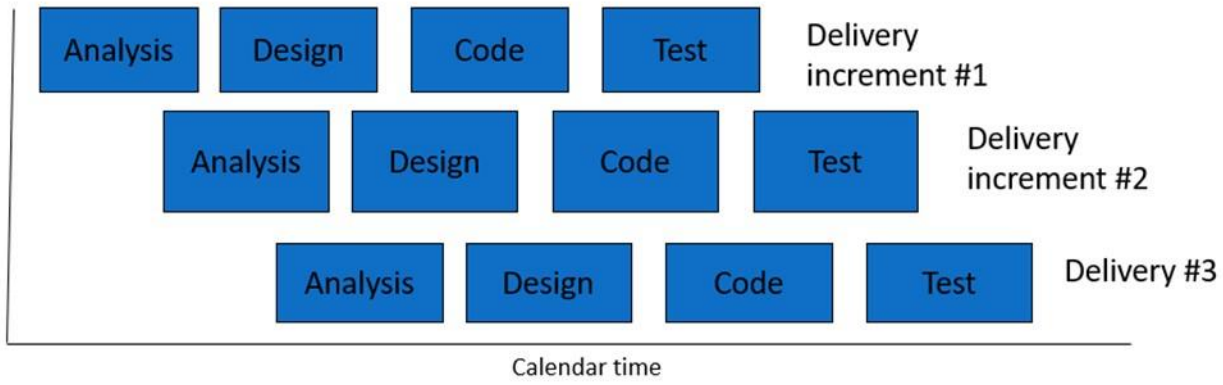


Fig: Development Plan

Test Planning

<table>
<tr><td colspan="3">Project Name: Legal Driver Tracking Management System</td><td colspan="3">Test Designed by: XY</td></tr>
<tr><td colspan="3">Test Case ID: LDT_1
Test Priority (Low, Medium, High): High
Module Name: New Case Form Session</td><td colspan="3">Test Designed date: 01/11/2023
Test Executed by: Sudeep Mondal Deep
Test Execution date: 05/11/2023</td></tr>
<tr><td colspan="6">Test Title: Verify New Case Form with valid Driving License and NID Number</td></tr>
<tr><td colspan="6">Description: Test website New Case Form page

Precondition (If any): Police must have users valid Driving License/NID Number</td></tr>
<tr><td>Test Steps</td><td>Test Data</td><td>Expected Results</td><td>Actual Results</td><td>Status (Pass/Fail)</td></tr>
<tr><td>1. Go to the website
2. Enter Driving License/NID
3. Enter Driver Name
4. Enter Driver address
5. Driver mobile number
6. Enter Vehicle number
7. Submit offence details
8. Browse Document
9. Click submit</td><td>Driving License/NID: 999999
Driver Name: AB
Driver Address: XY
Driver Mobile No: 0171234567
Vehicle No: 2222222
Offence Details: Checkbox option selects
Submitted Documents: checkbox option selects
Browse: File upload</td><td>Police should login into the application</td><td>Error</td><td>Fail</td></tr>
<tr><td colspan="6">Post Condition: Police is validated with database and successfully login to account. The account session details are logged in the database.</td></tr>
</table>

Project Name: **Legal Driver Tracking Management System**	Test Designed by: AB
Test Case ID: **LDT_2** Test Priority (Low, Medium, High): **Medium** Module Name: **Payment Gateway**	Test Designed date: **02/11/2023** Test Executed by: **Habibur Rahman Masum** Test Execution date: **06/11/2023**
Test Title: **Test online payment process**	
Description: **Test online payment gateway page** Precondition (If any): **User must have valid bank or SSLCOMMERZ account, OTP, PIN**	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the payment gateway option **2. Select payment method** **3. Enter account no.** **4. Click Send** **5. Enter OTP** **6. Enter PIN** **7. Click Confirm Payment**	**Payment Method: Bkash Acc No: 01749857345 OTP: 432123 PIN: 1234**	**User can make payment through the application**	**Error**	**Fail**

Post Condition: **User can make the payment and his/her bank or SSLCOMMERZ account debited by amount.**

Project Name: **Legal Driver Tracking Management System**	Test Designed by: **GH**
Test Case ID: **LDT_3**	Test Designed date: **03/11/23**
Test Priority (Low, Medium, High): **High**	Test Executed by: **Nazim Uddin**
Module Name: **Driver registration from**	Test Execution date: **07/11/23**
Test Title: **Failure to Prompt for Renewal**	
Description: **If the system does not update the status to "Expired," it won't prompt the user or driver to renew the document, potentially leading to individuals driving with expired or invalid documents.** Precondition (If any): **User must have valid driving license**	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website **2. Enter registration form 3. Fill the registration form** **4. Click submit**	**Driving license number: 3-24114196**	**Notify the driver: Your driving license validity expired please renew your document.**	**Error**	**Fail**

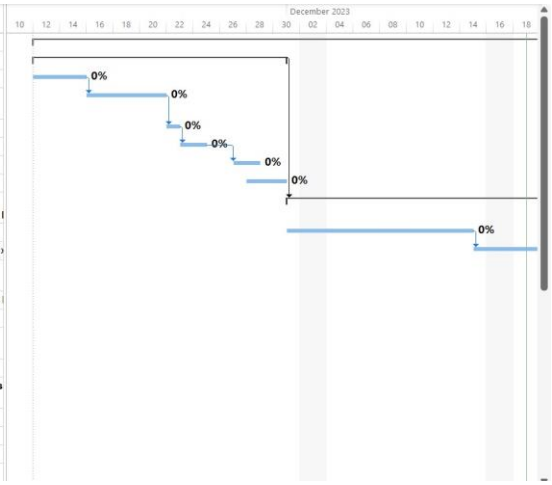
Post Condition: **User can get notify on time for renew the document on time**.

Project Name: **Legal Driver Tracking Management System**			Test Designed by: **LK**	
Test Case ID: **LDT_3** Test Priority (Low, Medium, High): **High** Module Name: **Document Verification**			Test Designed date: **04/11/23** Test Executed by: **Nafiur Rahman Niloy** Test Execution date: **08/11/23**	
Test Title: **verify document for authentication.**				
Description: **Tests verify document page.** Precondition (If any): **User must have documents.**				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Log in to the system 2Navigate to the document verification page. 3. must verify that extracted data matches the document's content. 4. Documents must be checked for expiration dates. 5. Verifying the document's authenticity using digital signatures or other security features. 6. Checking for evidence of tampering or alteration	**Driving license, vehicle papers**	**The system should display a message indicating that the documents are authentic or not.**	**Invalid documents**	**Fail**
Post Condition: **Invalid driver's licenses with forged signatures, incorrect names, or suspended status**				

○ Project Schedule

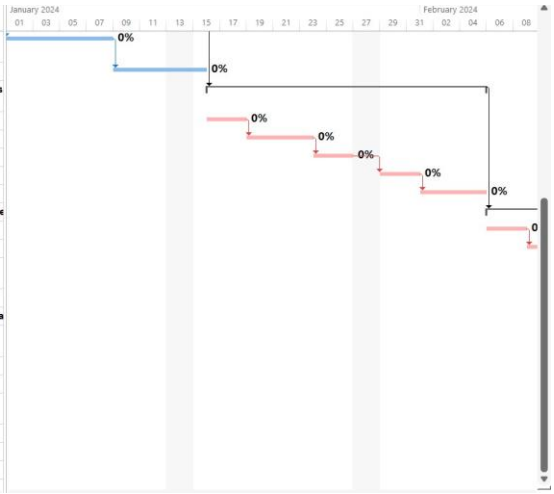
TRACKING GANTT

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Legal Driving Tracking**	**108 days**	**Sun 12-11-23**	**Mon 08-04-24**		
2		**Problem Analysis**	**16 days**	**Sun 12-11-23**	**Thu 30-11-23**		**Business Analysts,Domain Experts**
3		Background	4 days	Sun 12-11-23	Wed 15-11-23		Business Analysts
4		Problem Domain and Root Cause	5 days	Thu 16-11-23	Tue 21-11-23	3	Domain Experts
5		Objectives	1 day	Wed 22-11-23	Wed 22-11-23	4	
6		Solutions	2 days	Thu 23-11-23	Fri 24-11-23	5	
7		Target User and Benefits	2 days	Mon 27-11-23	Tue 28-11-23	6	
8		Basic Functionality	3 days	Tue 28-11-23	Thu 30-11-23		
9		**Selection of Process Model**	**17 days**	**Fri 01-12-23**	**Mon 25-12-23**	**2**	**Project Manager, Software Development Methodology**
10		Model	10 days	Fri 01-12-23	Thu 14-12-23		Project Manager
11		Arguments	3 days	Fri 15-12-23	Tue 19-12-23	10	Software Development Methodology Ex
12		Roles and Responsibilities	4 days	Wed 20-12-23	Mon 25-12-23	11	
13		**Requirements Analysis**	**15 days**	**Tue 26-12-23**	**Mon 15-01-24**	**9**	**Business Analysts,Stakeholders,Legal**
14		Functional Requirements	4 days	Tue 26-12-23	Fri 29-12-23		Stakeholders
15		Non-Functional Requirements	6 days	Mon 01-01-24	Mon 08-01-24	14	Business Analysts
16		Project Requirements	5 days	Tue 09-01-24	Mon 15-01-24	15	Legal Experts
17		**System Design Specification**	**15 days**	**Tue 16-01-24**	**Mon 05-02-24**	**13**	**Database Designers,System Architects**
18		E-R diagram	3 days	Tue 16-01-24	Thu 18-01-24		Database Designers
19		Use Case Diagram	3 days	Fri 19-01-24	Tue 23-01-24	18	System Architects
20		Activity Diagram	3 days	Wed 24-01-24	Fri 26-01-24	19	Technical Leads
21		Sequence diagram	3 days	Mon 29-01-24	Wed 31-01-24	20	

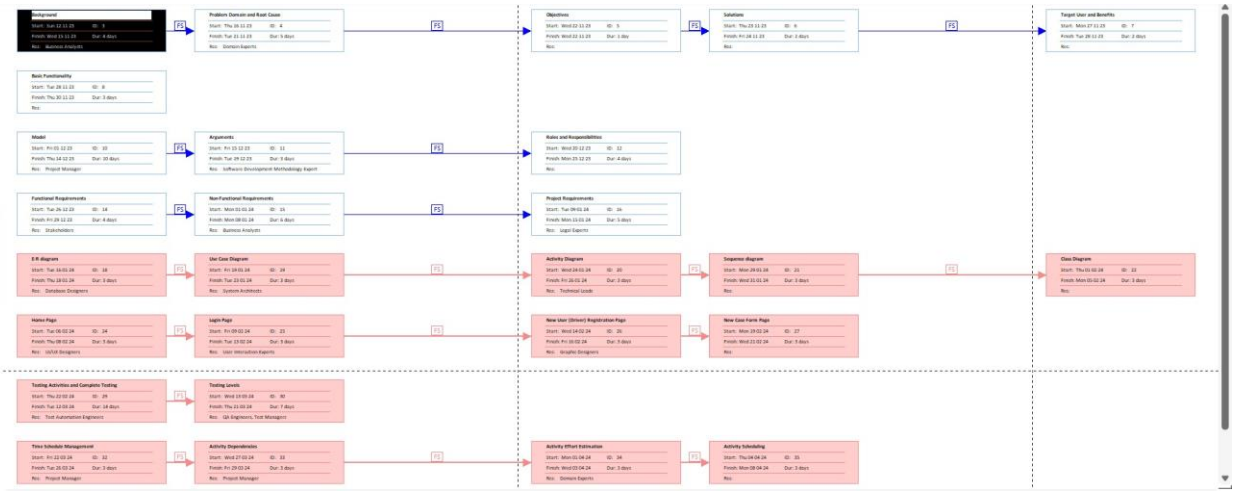


TRACKING GANTT

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
15		Non-Functional Requirements	6 days	Mon 01-01-24	Mon 08-01-24	14	Business Analysts
16		Project Requirements	5 days	Tue 09-01-24	Mon 15-01-24	15	Legal Experts
17		**System Design Specification**	**15 days**	**Tue 16-01-24**	**Mon 05-02-24**	**13**	**Database Designers,System Architects**
18		E-R diagram	3 days	Tue 16-01-24	Thu 18-01-24		Database Designers
19		Use Case Diagram	3 days	Fri 19-01-24	Tue 23-01-24	18	System Architects
20		Activity Diagram	3 days	Wed 24-01-24	Fri 26-01-24	19	Technical Leads
21		Sequence diagram	3 days	Mon 29-01-24	Wed 31-01-24	20	
22		Class Diagram	3 days	Thu 01-02-24	Mon 05-02-24	21	
23		**UI/UX Design**	**12 days**	**Tue 06-02-24**	**Wed 21-02-24**	**17**	**UI/UX Designers,User Interaction Expe**
24		Home Page	3 days	Tue 06-02-24	Thu 08-02-24		UI/UX Designers
25		Login Page	3 days	Fri 09-02-24	Tue 13-02-24	24	User Interaction Experts
26		New User (Driver) Registration Page	3 days	Wed 14-02-24	Fri 16-02-24	25	Graphic Designers
27		New Case Form Page	3 days	Mon 19-02-24	Wed 21-02-24	26	
28		**Project Test Planning**	**21 days**	**Thu 22-02-24**	**Thu 21-03-24**	**23**	**Test Automation Engineers,Test Mana**
29		Testing Activities and Complete Testing	14 days	Thu 22-02-24	Tue 12-03-24		Test Automation Engineers
30		Testing Levels	7 days	Wed 13-03-24	Thu 21-03-24	29	QA Engineers,Test Managers
31		**WBS and Effort Estimation**	**12 days**	**Fri 22-03-24**	**Mon 08-04-24**	**28**	**Project Manager,Domain Experts**
32		Time Schedule Management	3 days	Fri 22-03-24	Tue 26-03-24		Project Manager
33		Activity Dependencies	3 days	Wed 27-03-24	Fri 29-03-24	32	Project Manager
34		Activity Effort Estimation	3 days	Mon 01-04-24	Wed 03-04-24	33	Domain Experts
35		Activity Scheduling	3 days	Thu 04-04-24	Mon 08-04-24	34	



NETWORK DIAGRAM



RESOURCE USAGE

		Resource Name	Work	Add New (	Details	February 2024 21 Jan	04 Feb	18 Feb	March 2024 03 Mar	17 Mar	April 2024 31 Mar	14 Apr	May 2024 28 Apr
6		**Stakeholders**	**152 hrs**		Work								
		Requirements Analysis	*120 hrs*		Work								
		Functional Requirements	*32 hrs*		Work								
7		**Legal Experts**	**160 hrs**		Work								
		Requirements Analysis	*120 hrs*		Work								
		Project Requirements	*40 hrs*		Work								
8		**System Architects**	**144 hrs**		Work	96h	8h						
		System Design Specification	*120 hrs*		Work	80h	8h						
		Use Case Diagram	*24 hrs*		Work	16h							
9		**Technical Leads**	**144 hrs**		Work	104h	8h						
		System Design Specification	*120 hrs*		Work	80h	8h						
		Activity Diagram	*24 hrs*		Work	24h							
10		**Database Designers**	**144 hrs**		Work	80h	8h						
		System Design Specification	*120 hrs*		Work	80h	8h						
		E-R diagram	*24 hrs*		Work								
11		**UI/UX Designers**	**120 hrs**		Work		96h	24h					
		UI/UX Design	*96 hrs*		Work		72h	24h					
		Home Page	*24 hrs*		Work		24h						
12		**Graphic Designers**	**120 hrs**		Work		96h	24h					
		UI/UX Design	*96 hrs*		Work		72h	24h					
		New User (Driver) Registration Page	*24 hrs*		Work		24h						
13		**User Interaction Experts**	**120 hrs**		Work		96h	24h					
		UI/UX Design	*96 hrs*		Work		72h	24h					
		Login Page	*24 hrs*		Work		24h						
14		**Test Managers**	**224 hrs**		Work			56h	104h	64h			
		Project Test Planning	*168 hrs*		Work			56h	80h	32h			
		Testing Levels	*56 hrs*		Work				24h	32h			

5.Marketing Plan

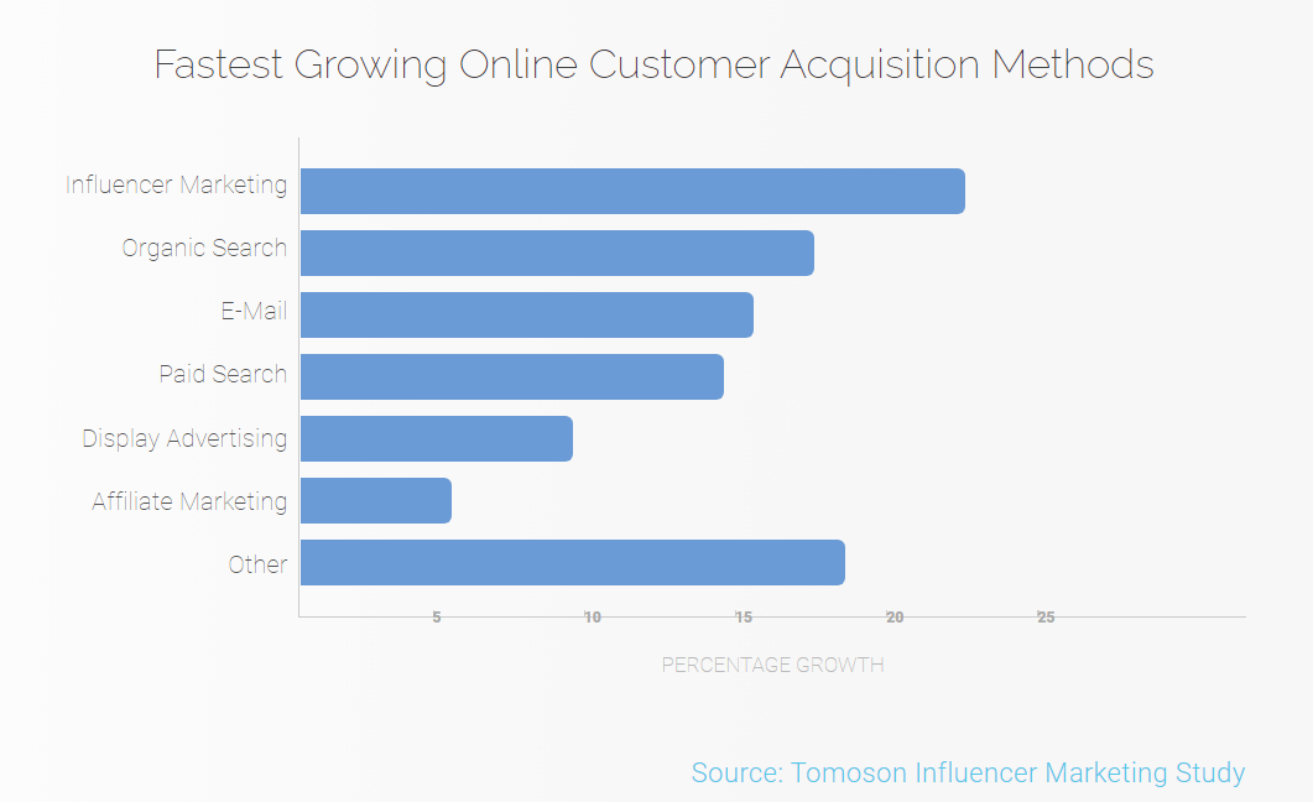
- In your document you should provide a proper marketing plan that will make your idea popular among the community so that you can do business. Marketing plan should have short term, long term, and continuous plan.

Original Video Content:

Video content as a marketing tool is becoming extremely prevalent with technology companies to introduce their solutions. While someone might not have the time to go through a product or company datasheet, almost everyone has the time to watch an entertaining, engaging two or three-minute video about a solution that might be of value to them

Influencer Marketing:

Business leaders and enterprise decision makers often look to others who are experts in their field when evaluating new technologies to purchase and implement. Technology companies are increasingly partnering with influencers to up their credibility and social media reach.



High-Value Content:

The amount of digital content being generated today is astounding. And it ranges from high-quality, unique content all the way down to content mills and "clickbait" that people don't necessarily get much out of. The same is true for content in the B2B technology marketing space.

- Tell better stories.
- Personalize for each stake-holder.
- Deliver real value.
- Make content unique

Live Event Integration:

In a post-pandemic world, it might seem counterintuitive, but with so much emphasis being placed on digital marketing, face-to-face interactions are becoming that much more important.

While much of the time enterprise solutions can build a case for themselves solely via digital channels, many tech buyers want to get to know their partners in person to separate contenders from pretenders.

Marketing Automation Tools:

A critical part of staying on top of, contacting, and nurturing leads for enterprise tech companies is employing a marketing automation tool. To build a sustainable and predictable revenue model, you'll need to have automated systems for collecting leads, building a marketing pipeline, segmenting contacts, and marketing to them on a consistent (and intelligent) basis.

Marketing automation helps B2B enterprise companies nurture, qualify, and pass leads over to sales when they're finally ready. This is essential in the technology space, as both pre-sales and sales cycles can last weeks, months, and even years. What tool you use will depend on the size of your company, as well as the nature of your solution and target buyer.

6.Cost and Profit Analysis

- In your document you should provide proper cost analysis including development and marketing costs. Then you can show profit analysis. Based on your profit analysis investors will agree to invest in your idea.

Cost Estimation:
If we consider the project is organic:
Then,
Coefficient=effort factor=2.4
COCOMO (constructive cost model) is used to estimate the effort for our project.

Lets consider, SLOC (source line of coding) = 4000
For organic project value of P (project complexity) = 1.05
The value of T(sloc dependent coefficient) = 0.38

Effort=PM= Coefficient *(SLOC/1000)^P
PM(persons-months needed for the project)= 2.4 (40000/1000)^1.05=115.44

DM= (duration time in months for project) = 2.5*(115.44)^0.38 = 15.19
Required number of people= PM/DM =115.44/15.19 = 7.6~ 8

Designing and coding= 1.5* 22* 8 = 264 h

Total salary= 264* 2000 = 528000 (8 dev salary) (1 dev salary= 66000)
Per month salary= 66000/1.5= 44000

Requirement analysis= 7*8*600 (7 days, 600 per h salary) = 33600

Maintenance = 2*4*3*2500 (per month 2500) = 60000

Travel Expense = 5000*3= 15000

Office rent = 20000*3= 60000

Utilities Expense = 3500*3 = 10500

Training/hardware = 5000*3 = 15000

Total Cost = 528000 + 33600 + 60000 + 15000 + 60000 + 10500 + 15000
= 722100
Profit Margin = 722100 * 15% = 108315

Client Bill= 722100 + 108315= 830415

7.References

- Dhaka metropolitan police- Dhaka Metropolitan Police https://dmp.gov.bd/
- Cilo cloud-based management Firm- https://www.clio.com/manage/
- Traffic Rules & Fines- Bangladesh Traffic Rules & Fines In 2024 (Updated Rules) - BDesheba.Com
- Comprehensive study of driver behavior monitoring systems using computer vision and machine learning techniques- Comprehensive study of driver behavior monitoring systems using ...
  Fangming Qu, Nolan Dang, Borko Furht & Mehrdad Nojoumian
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