

GLA UNIVERSITY, MATHURA



GLA
UNIVERSITY
MATHURA
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12-B Status from UGC

Project Report on: Customer Relationship Management (CRM) System

Submitted By:

Name:Aditya Pathak

ID: 2215000107

Name:Mohit Kumar

ID: 2215001087

Name:Ravi Naulakha

ID: 2215001438

Name:Vishwas Chaudhary

ID: 2215001995

Name:Vivek Kumar

ID: 2215002001

Under the guidance of:

Mr. Udayveer Singh

INDEX

S. no.	Topic
0	Declaration
1	Title
2	Problem Statement
3	Describing the Problem Statement
4	Objective and Scope of the Project.
5	Methodology
6	Hardware & Software to be used
7	Future Work of this Project:
8	The Schedule of the Project (Gantt chart/PERT chart):
9	Additional Considerations
10	Conclusion
11	References

DECLARATION

We, the undersigned, hereby declare that the project titled "**Customer Relationship Management (CRM) System**" is our original work and has been carried out as part of our academic curriculum under the guidance of our mentor **Mr. Udayveer Singh**, Technical Trainer in the Department of Computer Science and Engineering. We affirm that the information presented in this report is true and accurate to the best of our knowledge and has not been submitted elsewhere for academic credit.

We have worked collaboratively on all phases of the project, including problem identification, system design, development, testing, and documentation. Any external resources or references used in this project have been duly acknowledged in the report.

Date:

Place: **GLA University, Mathura**

DECLARATION OF WORK

Aditya Pathak

Testing, deployment, and working on future enhancements.

- Plan and execute the testing phase (both unit testing and system testing).
- Work closely with the team to debug and fix any issues that arise.
- Handle the deployment of the system on cloud-based solutions for scalability.
- Collaborate with Mohit and others to ensure seamless deployment.
- Work on future enhancements, such as mobile application development or adding predictive analytics features.

Output: Tested and deployed CRM system, a well-documented plan for future enhancements.

Mohit Kumar

Backend development using Node.js, including server-side logic, API creation, third-party integrations, and handling the security of the system.

- Handle the backend development using Node.js.
- Implement the server-side logic, business logic, and manage interactions between the frontend and the database.
- Ensure integration with third-party APIs for email, calendar functionalities, and other features.
- Create the system's API endpoints, managing user authentication, and handling security.
- Ensure that the backend is scalable, secure, and able to handle concurrent requests.

Output: Robust backend system with working APIs, secure authentication, and smooth integration with third-party tools.

Ravi Naulakha

Database design and management using MongoDB.

- Set up the database using MongoDB.
- Design and create collections for storing customer information, lead details, and interaction history.
- Ensure data retrieval is efficient and scalable.
- Implement indexing strategies and manage data relationships to optimize database performance.

Output: Well-structured MongoDB database, efficient data storage, and retrieval system.

Vishwas Chaudhary

Frontend development (UI/UX) using React.js.

- Design and develop the CRM's frontend using React.js.
- Create a responsive, user-friendly interface that provides seamless interaction for users.
- Implement frontend functionalities like contact management, lead tracking, and interaction history.
- Ensure the user experience is intuitive and smooth.

Output: Fully developed frontend with all features implemented and a polished user interface.

Vivek Kumar

Requirement gathering, system architecture design, and initial wireframes.

- Collaborate with stakeholders to gather all necessary requirements.
- Create detailed functional and non-functional requirement documents.
- Develop the system design including the system architecture.
- Create initial wireframes or mockups for the CRM system.

Output: System requirement document, wireframes, and initial architecture design.

ACKNOWLEDGEMENT

I would like to express my heartfelt gratitude to everyone who contributed to the successful completion of my project titled “**Customer Relationship Management (CRM) System**”.

First and foremost, I extend my deepest gratitude to **Mr. Udayveer Singh, Technical Trainer** in the **Department of Computer Science and Engineering**, for his invaluable guidance, constant support, and constructive feedback throughout the course of this project. His expertise and insights have been instrumental in shaping this work.

I am also thankful to the faculty members of the **Department of Computer Science and Engineering, GLA University**, for providing me with the resources and encouragement necessary to undertake this project.

My sincere thanks go to my project teammates—**Vivek, Vishwas, Ravi, and Aditya**—for their cooperation and teamwork, which greatly enhanced the quality of the project. I am deeply grateful to my teammates and our Mentor for their unwavering support and encouragement, without which this project would not have been possible.

Date:

Certificate

Certificate

This is to certify that the following students of **Computer Science Engineering, GLA University**, have successfully completed the project titled “**Customer Relationship Management (CRM) System**” under the supervision of **Mr. Udayveer Singh, Technical Trainer in the Department of Computer Science and Engineering**, during the academic year **2024-2025**:

- **Aditya Pathak**
- **Mohit Kumar**
- **Ravi Naulakha**
- **Vishwas Chaudhary**
- **Vivek Kumar**

This project is a record of the students’ original work and has been conducted with diligence and integrity. It fulfills the requirements set forth by the department for the fulfillment of the academic program.

We wish the students success in their future endeavors.

Mentor:

Mr. Udayveer Singh

Technical Trainer,

Department of Computer Science and Engineering

Signature: _____

Head of Department:

Dr. Sandeep Kumar Rathore

Head of Department,

Department of Computer Science and Engineering

1. Title of the Project:

Customer Relationship Management (CRM) System

2. Statement about the Problem:

In today's competitive business environment, companies face significant challenges in managing customer interactions and data efficiently. This often results in missed opportunities, decreased customer satisfaction, and ultimately, a negative impact on business growth and profitability.

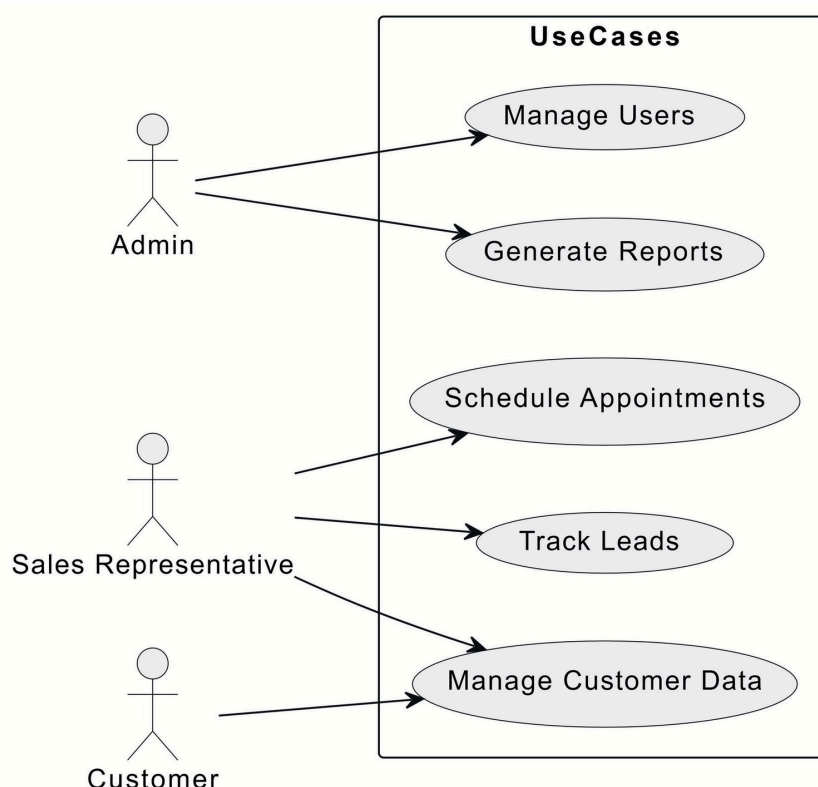
3. Describe the Problem Statement:

The absence of a centralized system for managing customer information, tracking interactions, and analyzing customer data leads to fragmented processes and suboptimal customer service. Businesses struggle to maintain a cohesive view of customer interactions, which hampers their ability to provide personalized and timely responses. This project aims to address these issues by developing a comprehensive CRM system that consolidates customer data, enhances communication, and provides actionable insights.

4. Objective and Scope of the Project:

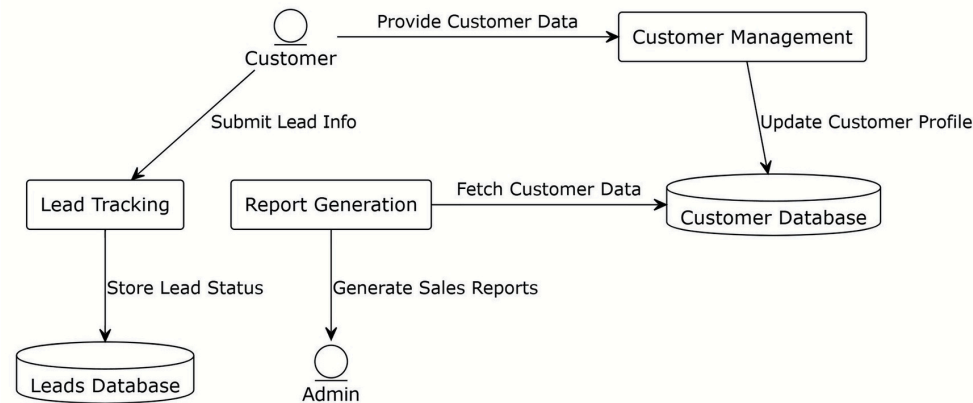
Objective: The primary objective is to develop a CRM system that centralizes customer data, streamlines communication, and enhances customer relationship management. By providing a unified platform, the system will enable businesses to improve customer engagement, increase sales efficiency, and foster long-term customer loyalty.

Scope: The CRM system will include features such as contact management, lead tracking, communication history, appointment scheduling, and reporting. It will be designed to cater to small and medium-sized businesses, offering scalability to accommodate future growth. The system will also support integration with existing business tools and platforms to ensure seamless operations.



5. Methodology:

The project will adopt an Agile development methodology which emphasizes flexibility, collaboration, and customer feedback. The development process will be divided into iterative cycles, each consisting of design, development, testing, and deployment phases.



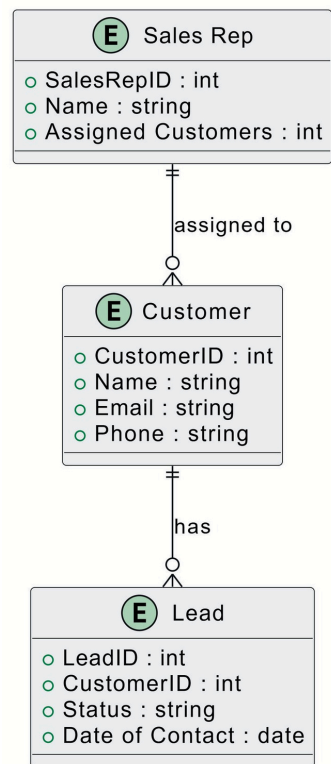
This approach allows for continuous improvement and adaptation to changing requirements. Key activities will include requirement gathering, system design, implementation, testing, and deployment. Regular stakeholder meetings will ensure alignment with business goals and user needs.

6. Hardware & Software to be Used:

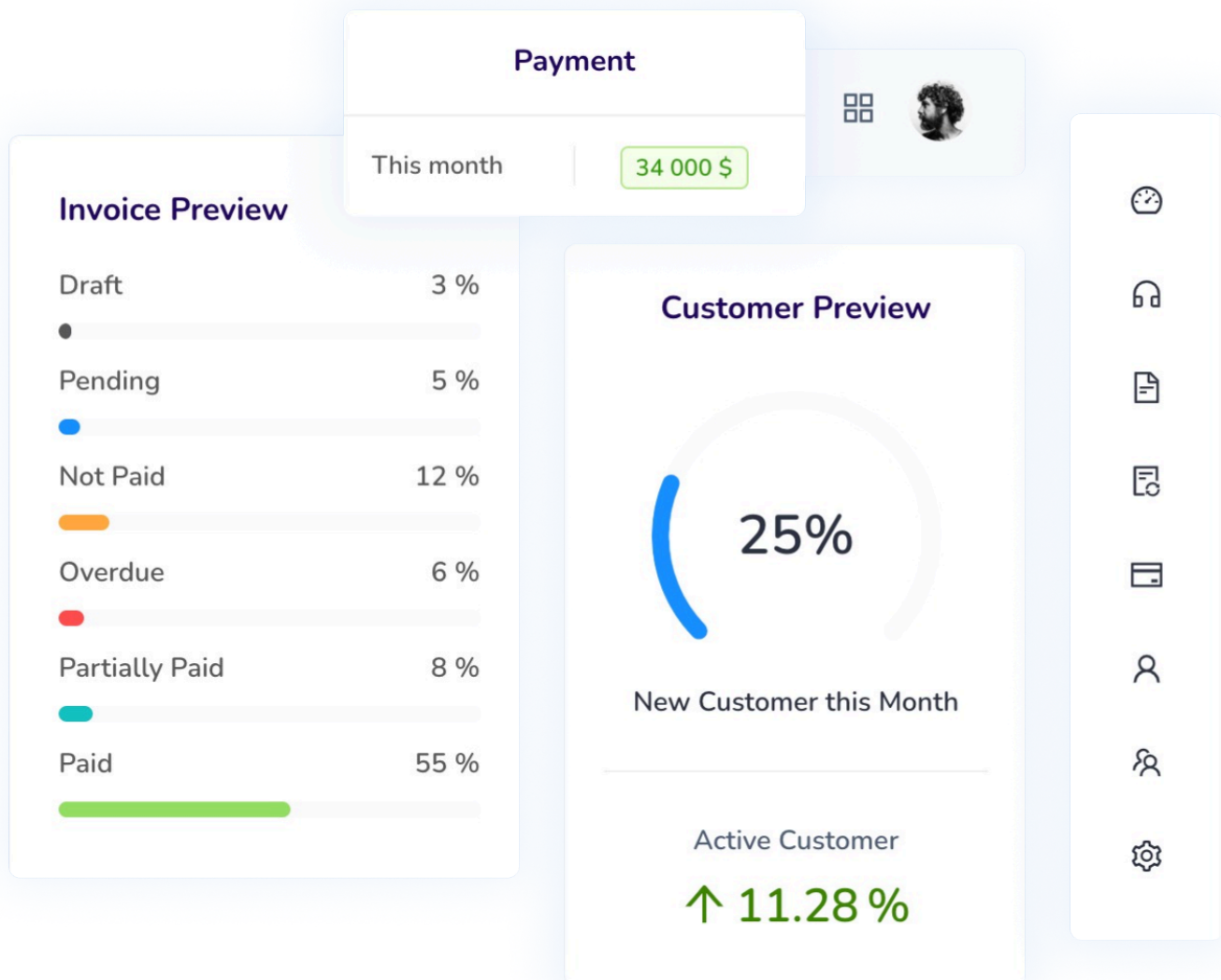
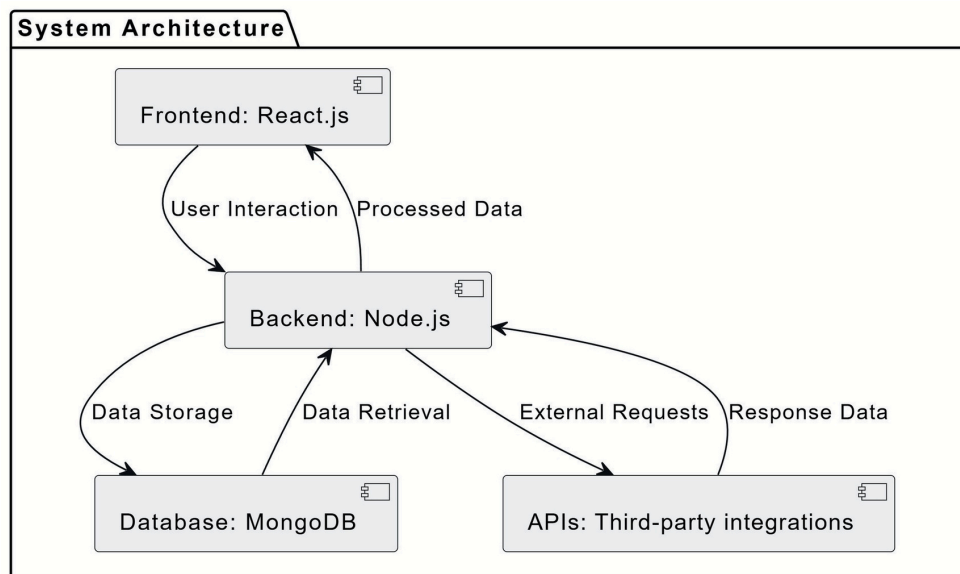
Hardware: The application will be hosted on a standard server infrastructure, ensuring reliability and scalability. Cloud-based solutions may be considered for enhanced flexibility and cost-effectiveness.

Software: The system will be developed using:

- React.js for the frontend, providing a responsive and user-friendly interface.
- Node.js will be used for the backend, offering a robust and scalable server environment.
- MongoDB will serve as the database, enabling efficient data storage and retrieval.

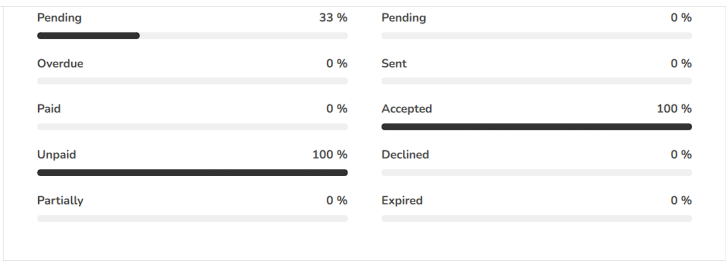


Integration with third-party APIs for email and calendar functionalities will enhance the system's capabilities.



Settings

About



New Customer This Month

Active Customer

↑ 40.00 %

Recent Invoices

Number	Client	Total	Status	
1	Mohit Kumar	\$ 273,900,000,000.00	sent	...
2	Vivek Kumar	\$ 220,000,000.00	pending	...
1	Vivek Kumar	\$ 1,047,200,000.00	sent	...

Recent Quotes

Number	Client	Total	Status	
1	Mohit Kumar	\$ 466,400,000,000.00	accepted	...

CUSTOMER RELATIONSHIP MANAGEMENT

Dashboard

Customers

Invoices

Quote

Payments

Payments Mode

Taxes

Settings

About

Invoice List

Search

Refresh

Add New Invoice

Number	Client	Date	Expired Date	Total	Paid	Status	Payment	
1	Mohit Kumar	26/11/2024	26/12/2024	\$ 273,900,000,000.00	\$ 0.00	sent	unpaid	...
2	Vivek Kumar	26/11/2024	26/12/2024	\$ 220,000,000.00	\$ 0.00	pending	unpaid	...
1	Vivek Kumar	27/11/2024	27/12/2024	\$ 1,047,200,000.00	\$ 0.00	sent	unpaid	...

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CUSTOMER RELATIONSHIP MANAGEMENT

Dashboard

Customers

Invoices

Quote

Payments

Payments Mode

Taxes

Settings

About

Invoices

This Month\$ 275,167,200,...

Quote

This Month\$ 466,400,000,...

Paid

This Month\$ 0.00

Unpaid

Not Paid\$ 275,167,200,...

Invoices

Draft

0 %

Pending

33 %

Overdue

0 %

Paid

0 %

Unpaid

100 %

Partially

0 %

Quote

Draft

0 %

Pending

0 %

Sent

0 %

Accepted

100 %

Declined

0 %

Expired

0 %

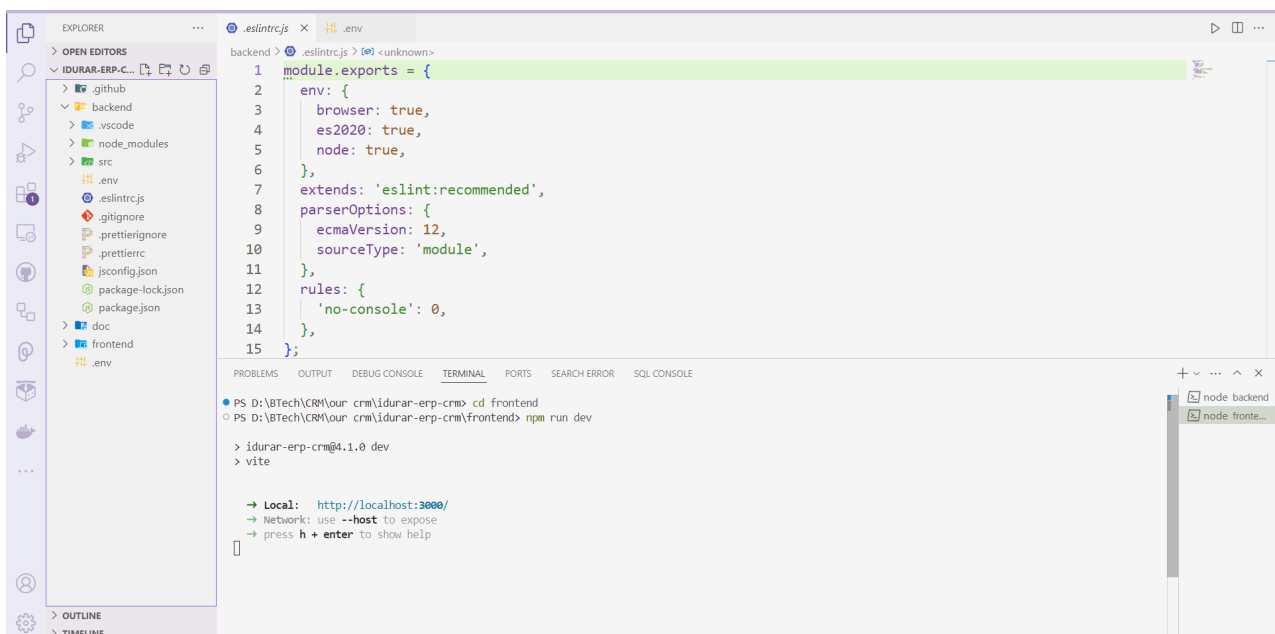
Customers

New Customer This Month

Active Customer

↑ 40.00 %

```
> .github
✓ backend
  > .vscode
  > node_modules
  > src
    .env
    .eslintrc.js
    .gitignore
    .prettierrc
    .prettierrc
    jsconfig.json
    package-lock.json
    package.json
  > doc
  > frontend
    .env
```



The screenshot shows the VS Code interface. The Explorer sidebar on the left displays the project structure, including folders like .github, backend, .vscode, node_modules, src, doc, and frontend, and files like .env, .eslintrc.js, .gitignore, .prettierrc, jsconfig.json, package-lock.json, and package.json. The main editor area shows the .eslintrc.js file with the following content:

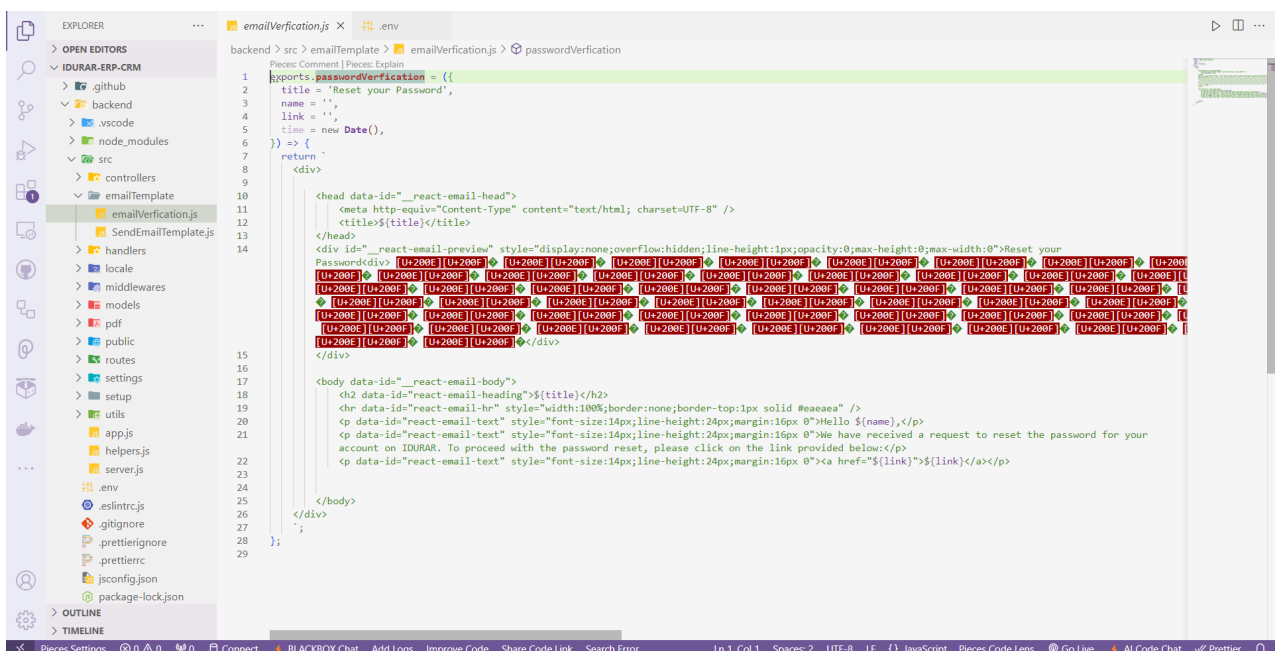
```
1 module.exports = {
2   env: {
3     browser: true,
4     es2020: true,
5     node: true,
6   },
7   extends: 'eslint:recommended',
8   parserOptions: {
9     ecmaVersion: 12,
10    sourceType: 'module',
11  },
12  rules: {
13    'no-console': 0,
14  },
15};
```

Below the editor, the TERMINAL panel is open, showing the following commands and output:

```
PS D:\BTEch\CRM\our crm\idurar-erp-crm> cd frontend
PS D:\BTEch\CRM\our crm\idurar-erp-crm\frontend> npm run dev

> idurar-erp-crm@4.1.0 dev
> vite

→ Local: http://localhost:3000/
→ Network: use --host to expose
→ press h + enter to show help
```



The screenshot shows the VS Code interface. The Explorer sidebar on the left displays the project structure, including folders like .github, backend, .vscode, node_modules, src, doc, and frontend, and files like .env, .eslintrc.js, .gitignore, .prettierrc, jsconfig.json, package-lock.json, and package.json. The main editor area shows the emailVerification.js file with the following content:

```
1 exports.passwordVerification = ({
2   title = 'Reset your Password',
3   name = '',
4   link = '',
5   time = new Date(),
6 }) => {
7   return `
8     <div>
9       <div data-id="__react-email-head">
10        <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
11        <title>${title}</title>
12      </div>
13      <div id="__react-email-preview" style="display:none;overflow:hidden;line-height:1px;opacity:0;max-height:0;max-width:0">Reset your
14        Password</div>
15      <div data-id="react-email-hr" style="width:100%;border:none;border-top:1px solid #eaeaea" />
16      <p data-id="react-email-text" style="font-size:14px;line-height:24px;margin:16px 0">Hello ${name},</p>
17      <p data-id="react-email-text" style="font-size:14px;line-height:24px;margin:16px 0">We have received a request to reset the password for your
18        account on IDURAR. To proceed with the password reset, please click on the link provided below:</p>
19      <p data-id="react-email-text" style="font-size:14px;line-height:24px;margin:16px 0"><a href="${link}">${link}</a></p>
20    </div>
21  `;
22};
```

Below the editor, the TERMINAL panel is open, showing the following commands and output:

```
backend > src > emailTemplate > emailVerification.js > passwordVerification
```

Dashboard

Customers

Invoices

Quote

Payments

Payments Mode

Taxes

Settings

About

Payment Mode List

Search

Refresh

Add New Payment Mode

Payment Mode	Description	Default	Enabled	
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...
TAKE ONE AND GIVE ONE	Can give us something worth equivalent to the product	<div><div></div></div>	<div><div></div></div>	...
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...
Default Payment	Default Payment Mode (Cash , Wire Transfert)	<div><div></div></div>	<div><div></div></div>	...

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Dashboard

Customers

Invoices

Quote

Payments

Payments Mode

Taxes

Settings

About

Client List

Search

Refresh

Add New Client

Name	Country	Address	Phone	Email	
Mohit Kumar	India	Mathura	1234567890	123@gmail.com	...
John Doe	Afghanistan	Mathura	01234567890	ecfmwyqm@hldrive.com	...
Ravi	India	House no. 155 Raj Vihar Colony Navada Mathura	51365465146545	harleycombined@puabook.com	...
Vivek Kumar	India	Mathura	01234567890	vivek.kumar3_cs22@gla.ac.in	...
Vishwas	Anguilla	House no. 155 Raj Vihar Colony Navada Mathura	3687684168	ecfmwyqm@hldrive.com	...

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Free Open Source ERP / CRM

Accounting / Invoicing / Quote App based on Node.js
React.js Ant Design

Sign In

Email

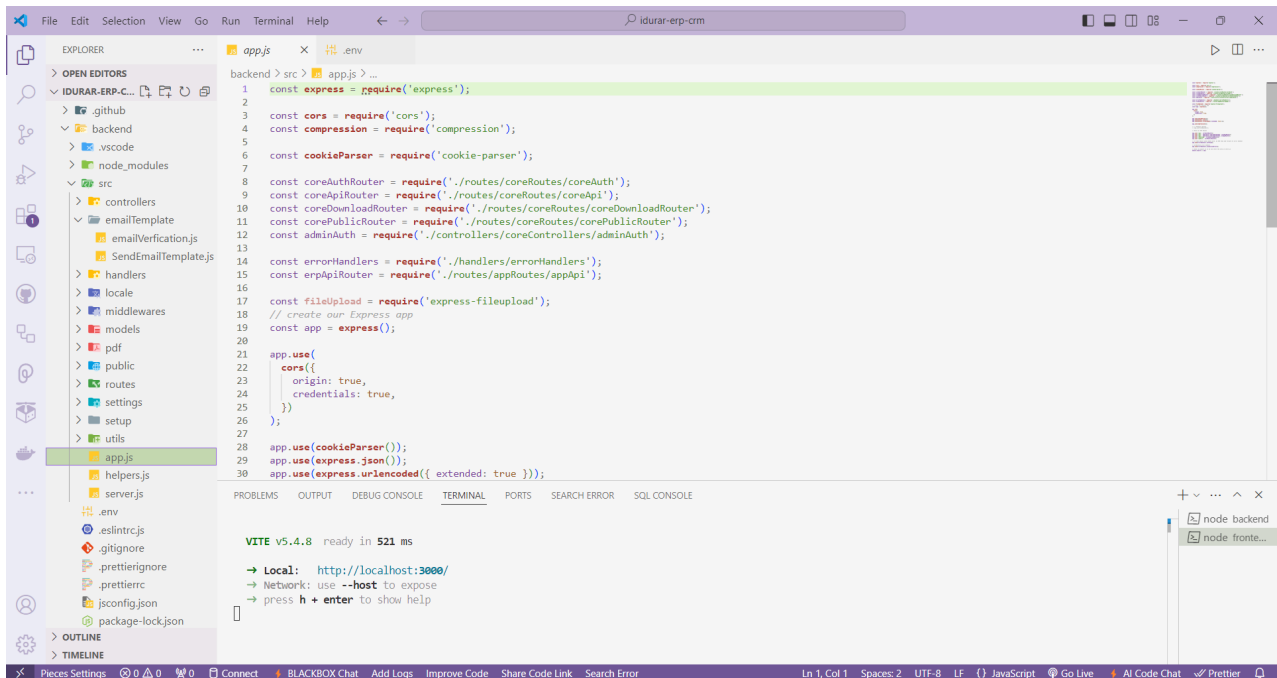
admin@demo.com

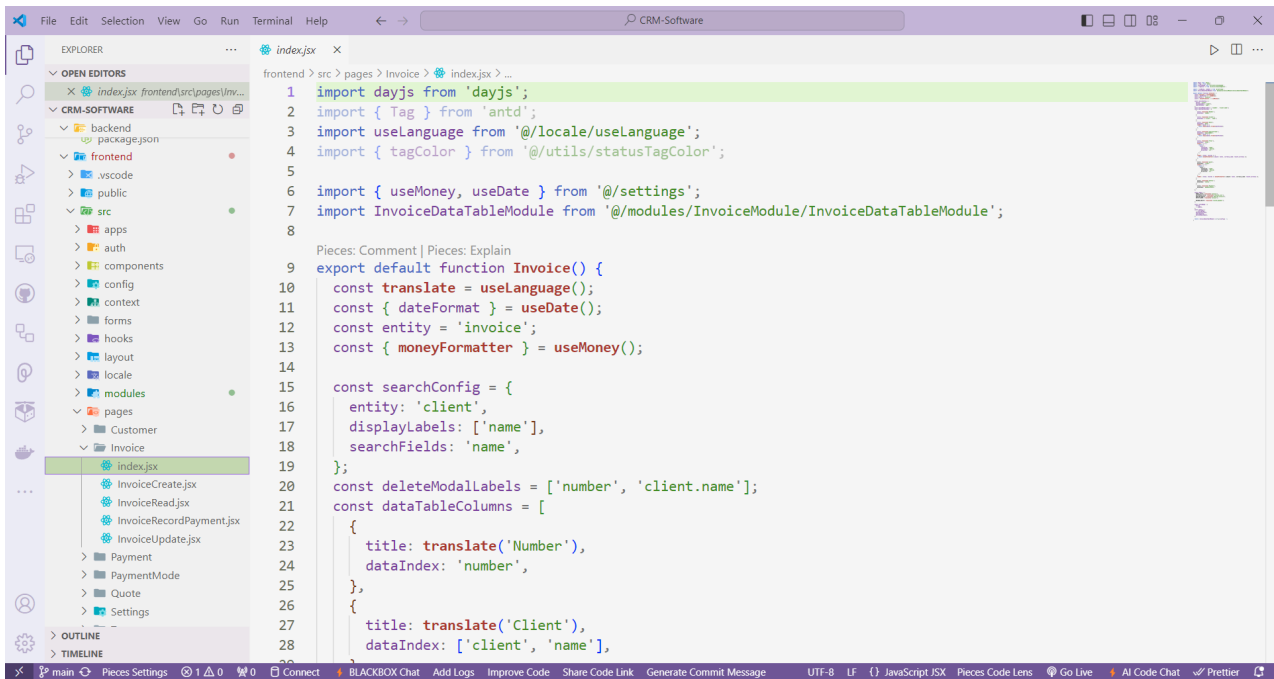
Password

☒ Remember Me

[Forgot Password](#)

Log In





7. Future Work of this Project:

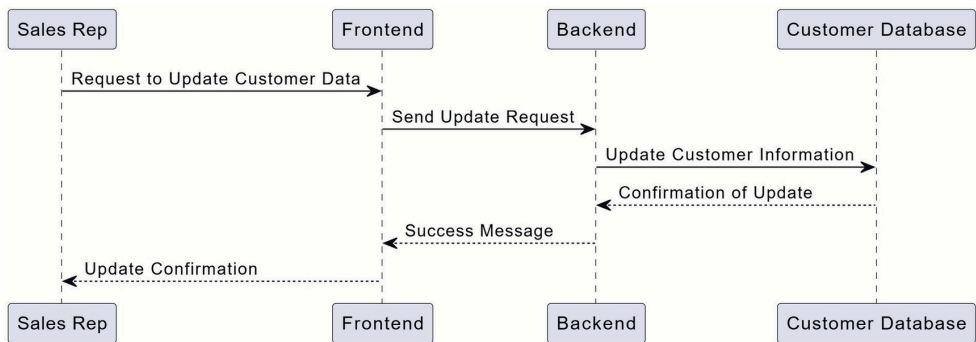
Future enhancements may include the implementation of advanced analytics features, such as predictive modeling and sentiment analysis, to provide deeper insights into customer behavior. Integration with social media platforms will enable businesses to engage with customers across multiple channels. Additionally, the development of a mobile application will provide users with on-the-go access to CRM functionalities, further enhancing productivity and customer engagement.

8. The Schedule of the Project (Gantt chart/PERT chart):

A detailed Gantt chart will be created to outline the project timeline, including key milestones such as requirement analysis, design completion, development phases, testing, and final deployment. The chart will provide a visual representation of the project schedule, helping to identify dependencies and allocate resources effectively. Regular progress reviews will ensure adherence to timelines and facilitate timely issue resolution.

9: Additional Considerations:

Process Description: The CRM system will be designed with a modular architecture, allowing for easy integration of additional features. Data Flow Diagrams (DFDs) and Use Case Diagrams be used to illustrate the system's processes and data flow. These diagrams will provide a clear understanding of the system's functionality and interactions, facilitating effective communication among stakeholders.



Resources and Limitations: The project will require a development team with expertise in web development and database management. Key resources will include software development tools, testing environments, and access to relevant data sources. Limitations may include budget constraints, which could impact the scope and timeline of the project. Additionally, ongoing maintenance and updates will be necessary to ensure the system remains secure and up-to-date with evolving business needs.

10: Conclusion:

The CRM system will provide businesses with a powerful tool to manage customer relationships more effectively, leading to improved customer satisfaction and business growth. Its modular design and scalability will ensure it remains relevant as business needs evolve. By centralizing customer data and streamlining communication, the system will enable businesses to deliver personalized and timely responses, fostering long-term customer loyalty and competitive advantage.

11: References:

- WPForms provides insights into CRM best practices that can enhance customer interactions by aligning CRM software with specific business needs.
- “Customer Relationship Management: Concepts and Technologies” by Francis Buttle offers foundational knowledge on CRM systems essential for understanding their implementation
- AppInventiv discusses key considerations in custom CRM software development that can guide project execution from planning through integration
- [Google](#)
- [YouTube](#)
- [Salesforce Inc](#)
- [Oracle](#)