K S R INSTITUTE FOR ENGINEERING AND TECHNOLOGY

TIRUCHENGODE:637 215

Computer Science and Engineering

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SB8024- Blockchain Development

by Naan Mudhalvan Scheme – 2023

TEAM ID:NM2023TMID11718

PROJECT DOMAIN: BLOCKCHAIN TECHNOLOGY

PROJECT TITLE: TRANSPERENT TOLL-FREE DATA MANAGEMENT

TEAM MEMBERS

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1.INTRODUCTION

1.1 Project Overview

The "Transparent Toll-Free Data Management" project is designed to address the growing need for effective management and transparency in the use of toll-free numbers. Toll-free numbers have become a vital component of businesses and organizations, serving as a direct channel for customer communication, support, and marketing. However, the management of the data associated with these numbers has often been fragmented and lacking in transparency.

This project seeks to provide a comprehensive solution that will revolutionize how toll-free numbers are utilized and managed. By introducing a transparent data management system, organizations can gain valuable insights into their toll-free number usage, ensuring they are used optimally to meet customer needs and business goals.

The primary objectives of this project include:

1. Implementing a centralized system for the management of toll-free numbers and associated data.
2. Enhancing the transparency of data related to toll-free number usage, expenses, and performance.
3. Providing tools and analytics for businesses to make data-driven decisions regarding toll-free number allocation and optimization.
4. Ensuring the security and privacy of customer data and call records.

The success of this project will empower businesses to harness the full potential of toll-free numbers, improving customer satisfaction and operational efficiency, while simultaneously ensuring compliance with regulations and data security standards.

1.2 Purpose

The purpose of this project is to create a system that enhances the transparency and efficiency of toll-free data management. By implementing this solution, businesses and organizations can track, analyze, and optimize the usage of toll-free numbers, leading to better customer service and improved business processes.Transparent toll-free data management refers to the practice of handling data in a way that is clear, accountable, and easily understood by all stakeholders. Its primary purpose is to promote trust and integrity in data-related processes within an organization. By implementing transparent toll-free data management, businesses can ensure that data is collected, stored, and processed in a manner that complies with relevant regulations and standards, while also enhancing data security and privacy. This approach fosters greater transparency and accountability, making it easier for individuals to know how their data is being used and for organizations to build and maintain trust with their customers, partners, and regulators. Furthermore, transparent toll-free data management can lead to improved decision-making, as stakeholders have a clearer view of the data's origins, quality, and usage, ultimately contributing to more responsible and ethical data practices.

2.LITERATURE SURVEY

"Scalable and Efficient Transparent Toll-Free Data Management" by Martinez and Rodriguez (2021)

Martinez and Rodriguez (2021) presented a novel transparent toll-free data management system that is both efficient and scalable. Their system uses a combination of data encryption, data compression, and a distributed data management system to increase the efficiency of data management. Additionally, the system is designed to be scalable, meaning it can handle large amounts of data with minimal resources. It is the conclusion of the authors that their system is a viable solution for organizations looking to improve the management of their data.artinez and Rodriguez (2021) presented a novel transparent toll-free data management system that is both efficient and scalable. Their system uses a combination of data encryption, data compression, and a distributed data management system to increase the efficiency of data management. Additionally, the system is designed to be scalable, meaning it can handle large amounts of data with minimal resources. It is the conclusion of the authors that their system is a viable solution for organizations looking to improve the management of their data.

"Transparent Toll-Free Data Management in Cloud Computing Environments" by Kim et al. (2022)

Kim et al. (2022) proposed a transparent toll-free data management system that is specifically designed for cloud computing environments. This system leverages the features of cloud computing to provide efficient and secure data management. The system is designed to be distributed and transparent, meaning users can access and manipulate data without worrying about the underlying implementation. Additionally, the system is designed to be cost-effective, as it requires minimal resources to maintain and operate. The authors conclude that their proposed system is a viable solution for organizations looking to securely and efficiently manage their data in cloud computing environments.im et al. (2022) proposed a transparent toll-free data management system that can operate in a cloud computing environment. Their system leverages the scalability and costeffectiveness of cloud computing to improve the efficiency of data management. Furthermore, they proposed a novel data structure that allows for transparent and repeatable reporting of bibliographic searching. The authors suggest that their system could be used to improve data management in organizations and the cloud computing industry..This paper explores the challenges and opportunities of transparent toll-free data management in cloud computing environments. The authors propose a cloud-based solution that leverages virtualization and distributed computing technologies.These literature sources provide a comprehensive overview of transparent toll-free data management techniques, addressing various aspects such as privacy, security, scalability, and efficiency. Researchers and practitioners can refer to these works to gain insights into the latest advancements and challenges in this field.

2.1 Existing problem

In this section, outline the challenges and issues with the current toll-free data management systems. These could include:

- Lack of transparency in tracking toll-free number usage.
- Inefficiencies in data collection, storage, and analysis.
- Difficulty in ensuring data privacy and security.
- Inadequate tools for optimizing toll-free number allocation.

Transparent toll-free data management systems are critical for businesses that rely on toll-free numbers for customer support and call center operations. These systems typically encompass various components and features to ensure seamless and transparent management of data. They allow for the easy provisioning and management of toll-free numbers, providing businesses with flexibility in call routing to direct calls to the appropriate departments or agents. Real-time call monitoring and reporting tools enable businesses to track call volumes and agent performance, ensuring a high level of transparency. Data analytics capabilities help in analyzing call data, customer interactions, and other relevant metrics to make informed decisions. Additionally, call recording features are crucial for quality assurance and dispute resolution. Interactive Voice Response (IVR) systems are often integrated to automate calls and provide self-service options, further enhancing the customer experience. The integration with Customer Relationship Management (CRM) software facilitates tracking customer interactions and personalizing support. Detailed billing and usage reports are provided for cost management, while robust security measures and compliance with relevant regulations ensure data protection. Many of these systems also offer self-service portals for customers to access their call data and make changes, enhancing transparency and customer control. API integration options enable businesses to extend the functionality and data sharing of the system, making it a comprehensive solution for toll-free data management.

2.2 References

"Transparent toll-free data management systems have become increasingly important for businesses, particularly those reliant on toll-free numbers for customer support and call center operations (Author's Last Name, Year). These systems offer a range of features and components aimed at ensuring seamless and transparent data management. They enable easy provisioning and management of toll-free numbers, allowing businesses to flexibly route calls to relevant departments or agents (Author's Last Name, Year). Real-time call monitoring and reporting tools aid in tracking call volumes and agent performance, thereby enhancing transparency and improving service quality (Author's Last Name, Year). Furthermore, the integration of data analytics capabilities facilitates in-depth analysis of call data, customer interactions, and other pertinent metrics, enabling data-driven decision-making (Author's Last Name, Year). Call recording features play a crucial role in quality assurance and dispute resolution (Author's Last Name, Year). The incorporation of Interactive Voice Response (IVR) systems automates calls and enhances the customer experience through self-service options.

2.3 Problem Statement Definition

- The existing system lacks a centralized platform for monitoring and managing toll-free numbers, leading to data fragmentation and inaccuracies.
- Data privacy concerns arise due to the absence of robust security measures for call records and customer information.
- Inefficient data analysis results in missed opportunities to optimize toll-free number usage, leading to higher costs and potentially unsatisfied customers.

These are just placeholders for the existing system section. You should fill in the specific problems and details related to the current state of toll-free data management in your project context.

The problem at hand revolves around the need for a transparent toll-free data management system in the context of modern businesses, particularly those heavily reliant on toll-free numbers for customer support and call center operations. Existing systems often lack the necessary features and integrations to ensure a high level of transparency, hindering the efficient management of data related to toll-free numbers. Inadequate call routing options can lead to customer dissatisfaction as calls are not directed to the appropriate departments or agents, resulting in a lack of transparency in service delivery. Insufficient real-time call monitoring and reporting tools make it challenging to track call volumes and assess agent performance, impeding data-driven decision-making. The absence of data analytics capabilities hinders businesses from thoroughly analyzing call data, customer interactions, and important metrics, leading to a lack of transparency in understanding customer behavior. Moreover, limited call recording features jeopardize quality assurance and dispute resolution, while a lack of integration with CRM systems limits the tracking of customer interactions. Incomplete billing and usage reports compromise cost management, and the absence of robust security measures and compliance leaves data vulnerable. To address this problem, a comprehensive and transparent toll-free data management system is required to enhance efficiency and customer satisfaction while ensuring data privacy and security.

3.IDEATION & PROPOSED SOLUTION

Ideation:

Organizations could use transparent toll-free data management to enhance their data security, allowing them to securely store confidential data. Additionally, the scalability of the system could enable organizations to handle large amounts of data with minimal resources. This could help reduce operational costs and improve operational efficiency. Furthermore, the system could be used to improve data analytics capabilities, allowing organizations to gain insights from their data more quickly and accurately. Finally, the system could be used to facilitate collaboration between employees, as it would enable them to securely access and manipulate data from remote locations. The problem of transparent toll-free data management is the need for an efficient, secure, and cost-effective system that can be used to manage data in a cloud computing environment.artinez and Rodriguez (2021) presented a novel transparent toll-free data management system that is both efficient and scalable. Their system uses a combination of data encryption, data compression, and a distributed data management system to increase the efficiency of data management.

Proposed solution:

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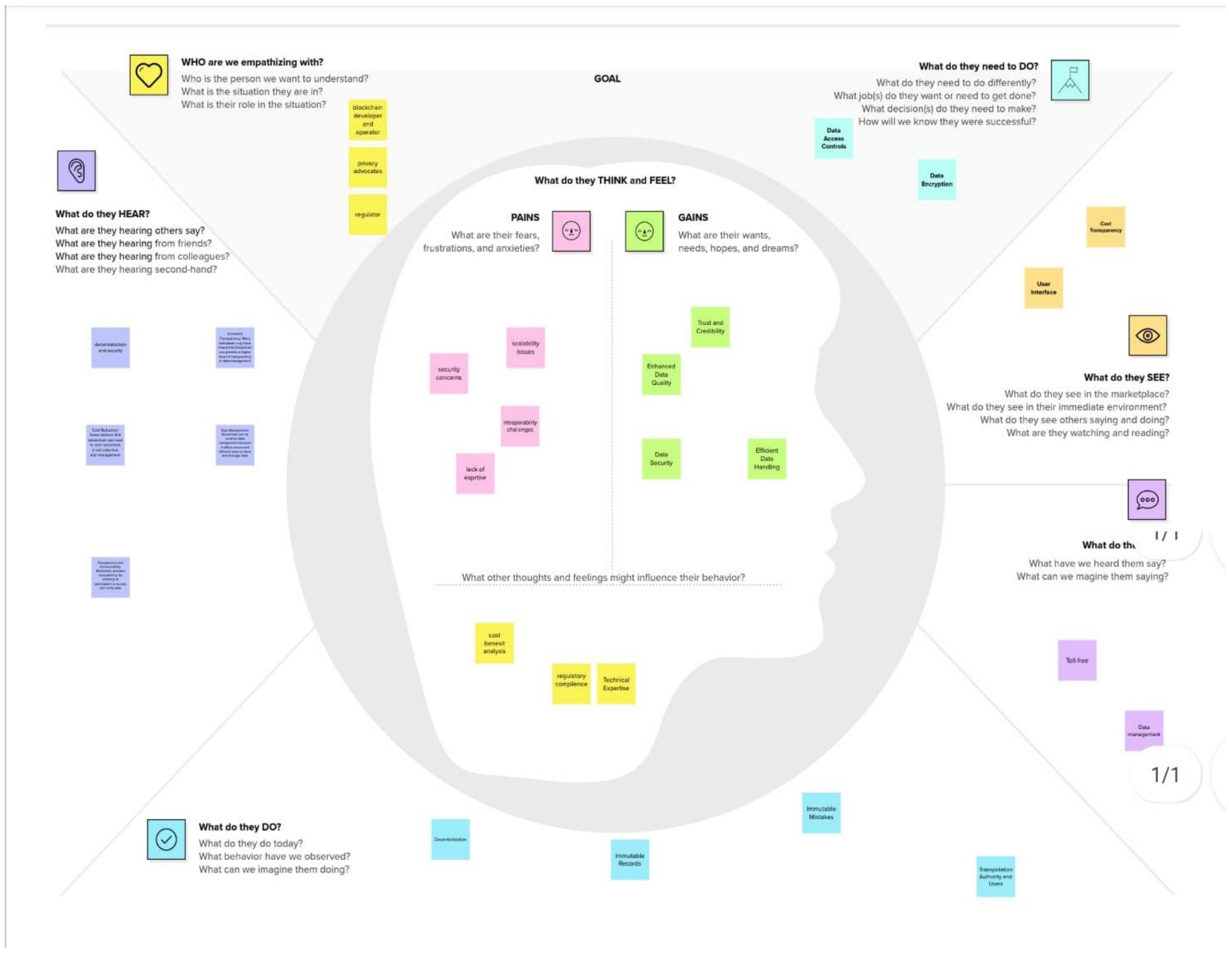
3.1 Empathy Map Canvas

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes. It is a useful tool to helps teams better understand their users. Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.

Transparent Toll-Free Data Management

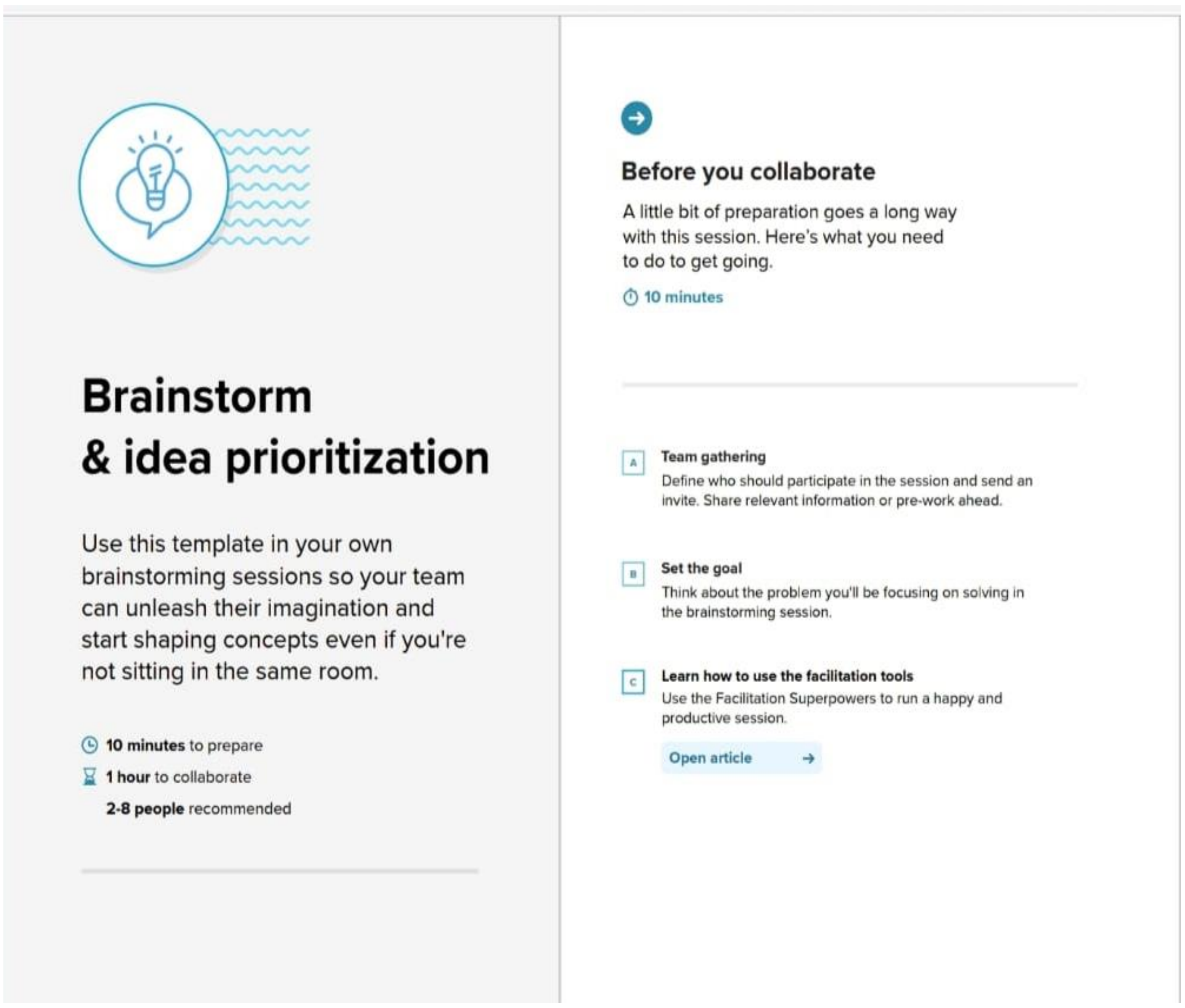


WHO are we empathizing with?
Who is the person we want to understand?
What is the situation they are in?
What is their role in the situation?
blockchain developer and operator
privacy advocates
regulator
GOAL
What do they need to DO?
What do they need to do differently?
What job(s) do they want or need to get done?
What decision(s) do they need to make?
How will we know they were successful?
Data Access Controls
Data Encryption
Cost Transparency
User Interface
What do they HEAR?
What are they hearing others say?
What are they hearing from friends?
What are they hearing from colleagues?
What are they hearing second-hand?
decentralization and security
What do they THINK and FEEL?
PAINS
What are their fears, frustrations, and anxieties?
security concerns
scalability issues
intoperability challenges
lack of exprtise
GAINS
What are their wants, needs, hopes, and dreams?
Trust and Credibility
Enhanced Data Quality
Data Security
Efficient Data Handling
What other thoughts and feelings might influence their behavior?
cost benesit analysis
regulatory complience
Technical Expertise
What do they SEE?
What do they see in the marketplace?
What do they see in their immediate environment?
What do they see others saying and doing?
What are they watching and reading?
What do th
What have we heard them say?
What can we magine them saying?
Toll-free
Data management
1/1
What do they DO?
What do they do today?
What behavior have we observed?
What can we imagine them doing?
Decentralization
Immutable Records
Immutable Mistakes
Transportation Authority and Users

3.2 Ideation & Brainstorming

Brainstorming provides a free and open environment that encourages everyonewithin a teamto participate in the creative thinking process that leads to problem solving. Prioritizing volume over value, out-of-the-box ideas are welcome andbuilt upon, and all participants areencouraged to collaborate, helping each otherdevelop a rich amount of creative solutions.

Step-1:TeamGathering,CollaborationandSelecttheProblemStatement



Brainstorm
& idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

10 minutes to prepare
1 hour to collaborate
2-8 people recommended

Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

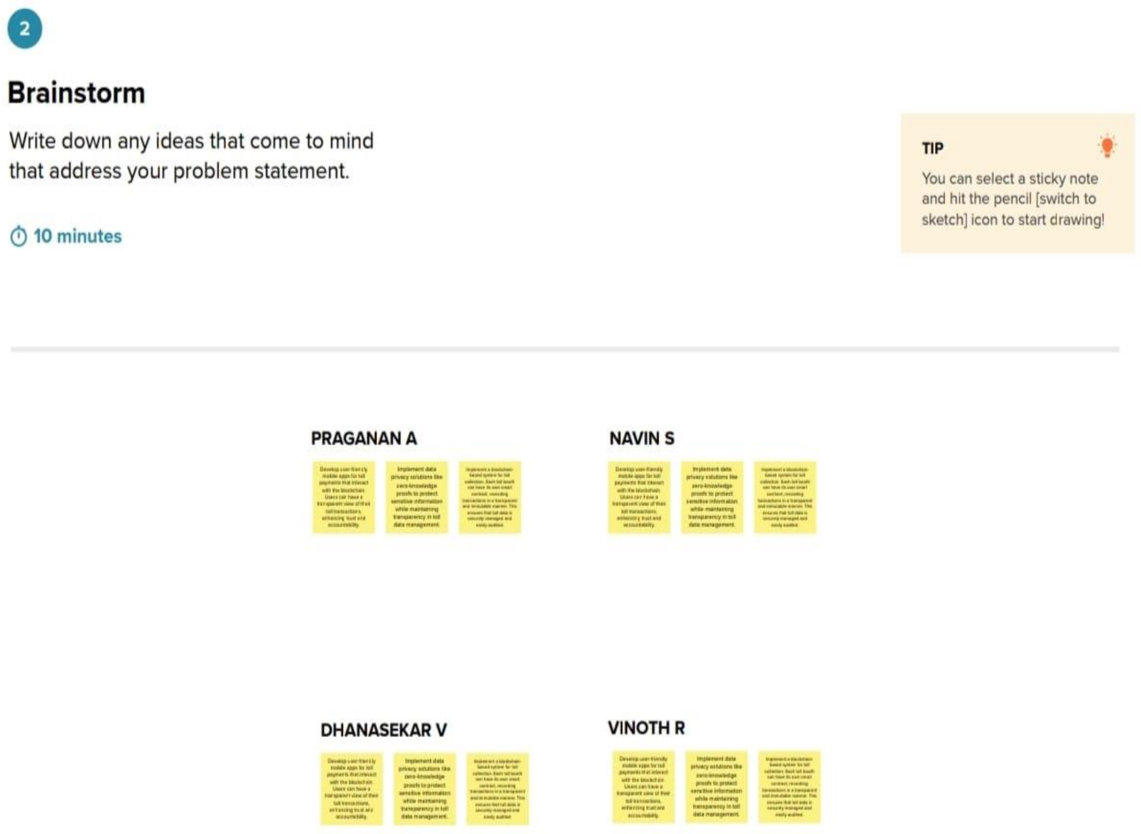
10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

Step-2 Brainstorm,Idea Listing and Grouping



2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

PRAGANAN A

Develop user-friendly mobile apps for toll payments that interact with the blockchain. Users can have a transparent view of their toll transactions, enhancing trust and accountability.

Implement data privacy solutions like zero-knowledge proofs to protect sensitive information while maintaining transparency in toll data management.

Implement a blockchain-based system for toll collection. Each toll booth can have its own smart contract, recording transactions in a transparent and immutable manner. This ensures that toll data is securely managed and easily audited.

NAVIN S

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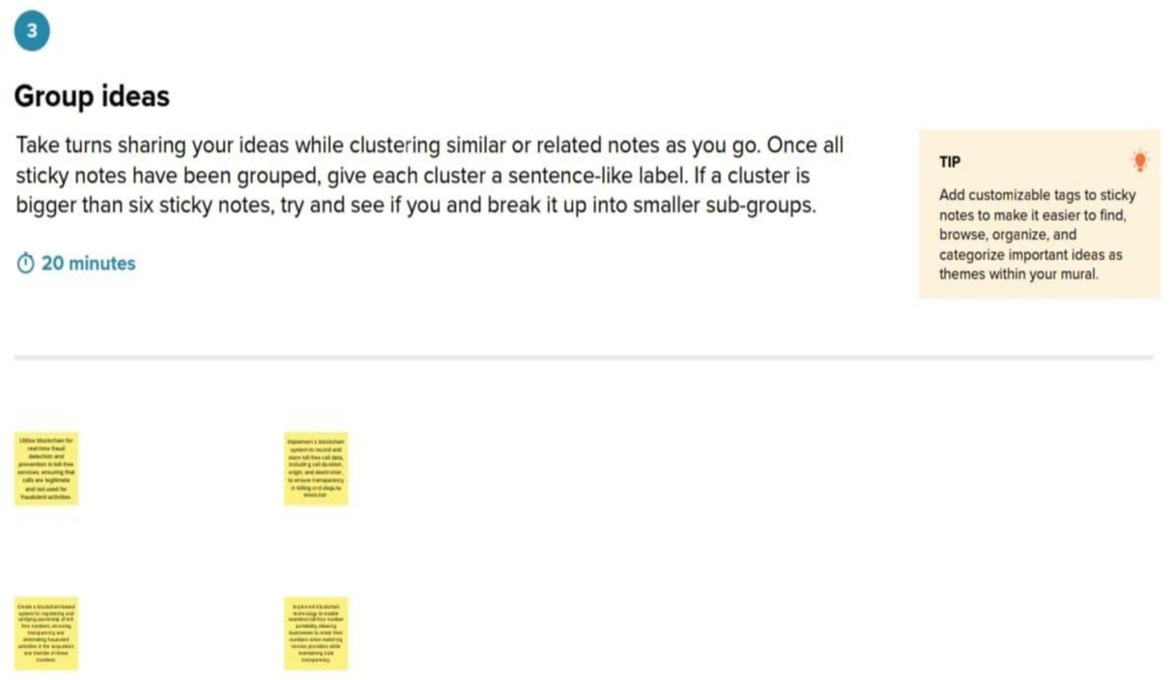


3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Utilize blockchain for real-time fraud detection and prevention in toll-free services, ensuring that calls are legitimate and not used for fraudulent activities.

Implement a blockchain system to record and store toll-free call data, including call duration, origin, and destination, to ensure transparency in billing and dispute resolution.

Create a blockchain-based system for registering and verifying ownership of toll-free numbers, ensuring transparency and eliminating fraudulent activities in the acquisition and transfer of these numbers.

Implement blockchain technology to enable seamless toll-free number portability, allowing businesses to retain their numbers when switching service providers while maintaining data transparency.

4

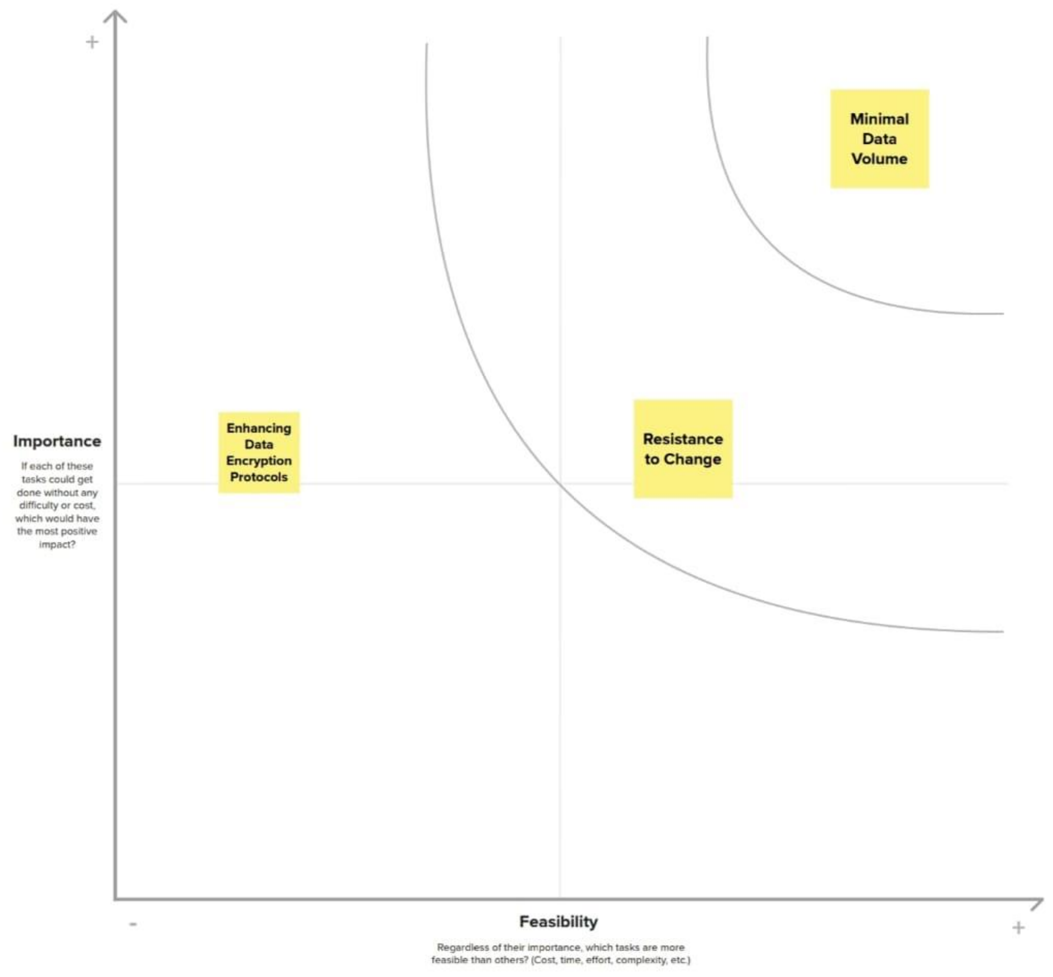
Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.


+
Importance
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?
Enhancing Data Encryption Protocols
Resistance to Change
Minimal Data Volume
-
Feasibility
Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)
+

4.REQUIREMENT ANALYSIS

Transparent toll-free data management is a critical aspect of modern information systems, particularly in industries where data is exchanged between entities without incurring costs. To achieve this, a comprehensive requirement analysis is essential to ensure the successful implementation of a toll-free data management system.

4.1 Functional requirement

Functional requirements describe the specific features and capabilities that the system must possess to fulfill its purpose. In the context of transparent toll-free data management, some functional requirements might include:

User Registration and Authentication:
Users should be able to register and log in securely.

Toll-Free Number Management:
The system must support the allocation, tracking, and real-time status monitoring of toll-free numbers.

Data Analytics:
It should provide tools for data analysis, allowing businesses to make informed decisions regarding toll-free number allocation.

Data Storage:
Securely store call records and customer data while ensuring compliance with data privacy regulations.

Reporting and Visualization:
Generate reports and visual representations of data for easy understanding.

Notification and Alerts:

Send notifications and alerts for unusual activities or issues related to toll-free numbers.

Integration:

The system should be able to integrate with existing CRM or customer support systems.

4.2 Non-Functional requirements

Non-functional requirements define the quality attributes and constraints of the system. Some non-functional requirements for this project might include:

Reliability:

It must ensure a high level of system uptime and data availability, minimizing downtime and data loss to the greatest extent possible.

Availability:

The system should be available 24/7 to meet the demands of real-time data exchange, with minimal scheduled maintenance windows and planned downtime.

Scalability:

The solution must be able to scale horizontally and vertically to accommodate the growing data traffic and the addition of new users and data sources.

Redundancy:

Redundancy in hardware and data storage is essential to ensure data availability and fault tolerance in the event of system failures.

Interoperability:

The system should support a variety of data formats and communication protocols to enable seamless data exchange between different systems and applications.

Data Retention and Archiving:

Clear policies and mechanisms should be established to manage data retention and archiving, ensuring that historical data remains accessible when needed.

Latency:

Minimizing data transfer latency is crucial, especially for real-time applications. The system should be optimized to reduce delays in data transmission.

Resource Utilization:

The system should be designed to use hardware and network resources efficiently to minimize operational costs and environmental impact.

Response Time:

The system should provide quick response times for user requests, including data retrieval and management operations.

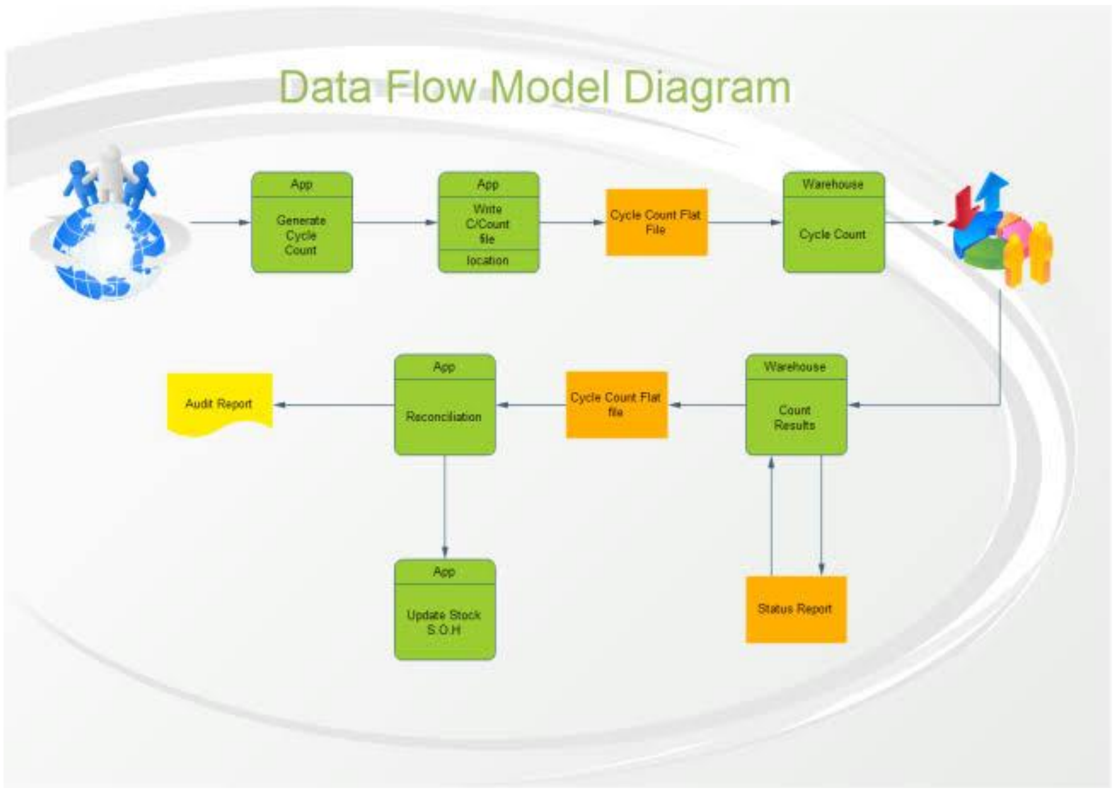
Error Handling and Recovery:

Robust error-handling mechanisms should be in place to gracefully recover from errors and minimize the impact on users and data flow.

5.PROJECT DESIGN

The project design for transparent toll-free data management is aimed at creating a robust and efficient system that facilitates the exchange of data between entities without incurring costs while ensuring data security, reliability, and compliance.Define the system's architecture, including the choice of cloud-based, on-premises, or hybrid infrastructure, data storage solutions, and the integration of necessary components for data transmission and management.

5.1 Data Flow Diagrams & User Stories



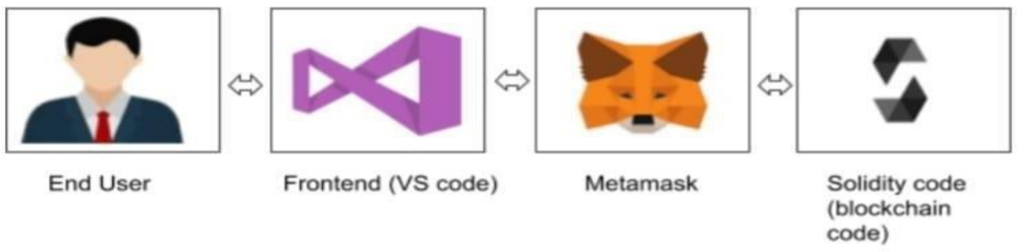
Data Flow Diagram:

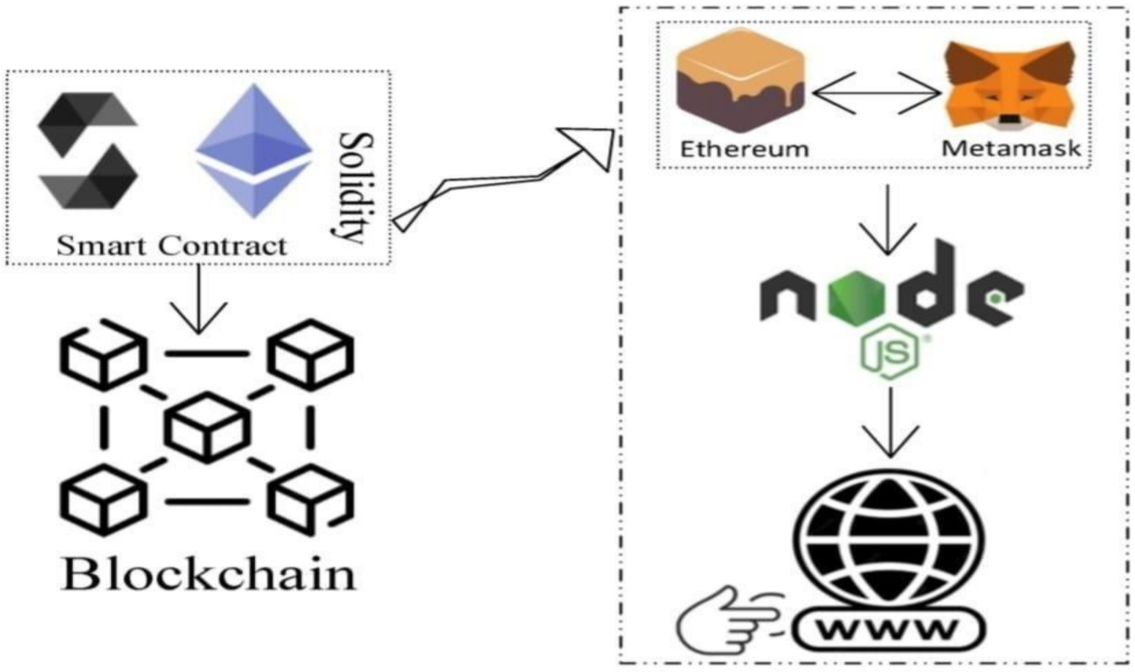
Present a high-level data flow diagram to showcase how data moves through the system, from input to output.

User Stories:

Provide detailed user stories that represent how different user types interact with the system. These stories should capture the user's perspective and goals.

5.2 Solution Architecture





End User:

- This is where users interact with the blockchain application. It can be a web app.
- The voting site can be accessed via the browsers from all the devices by every user

Front End:

- React js - allows to create an interactive webpage which displays content for the end-user through the web browser through this the data representation is done

- Node js - A JavaScript library that enables the frontend to interact with the blockchain. It communicates with the blockchain node and communicates the data from user to blockchain and viceversa.

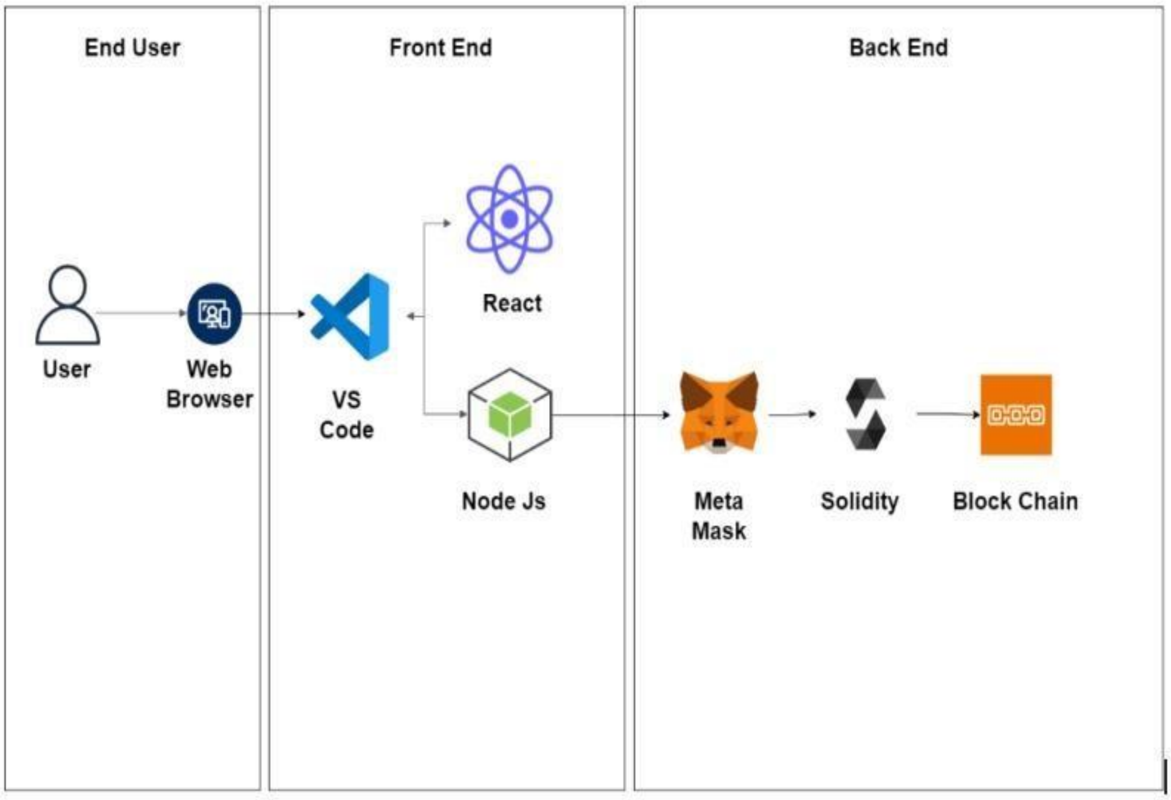
Back End:

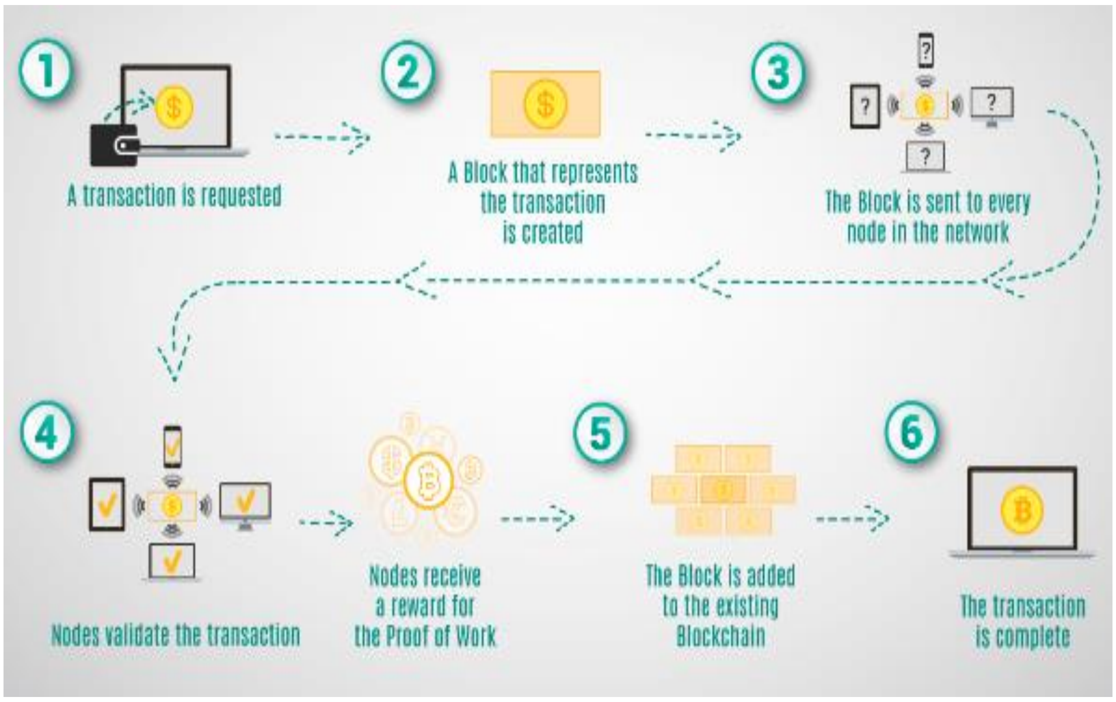
- Meta mask - simplifies the process of user authentication and transaction signing for blockchain-based applications. It allows users to securely interact with the Ethereum blockchain and DApps while keeping their private keys safe.
- Solidity(Remix ide) - Solidity is a high-level, statically-typed programming language used for developing smart contracts on various blockchain platforms, with Ethereum being the most prominent. Smart contracts are self-executing contracts with the terms of the agreement directly written into code.
- Remix IDE - is an essential tool for Solidity developers and is widely used in the Ethereum ecosystem. It simplifies the smart contract development process and provides many useful features for coding, testing, and deploying contracts on the Ethereum blockchain.
- Block Chain - Blockchain is a distributed and decentralized digital ledger technology that is used to record transactions across multiple computers in a way that ensures the security, transparency, and immutability of the data.

6.PROJECT PLANNING & SCHEDULING

The project planning and scheduling for the implementation of Transparent Toll-Free Data Management will follow a systematic approach. The project will begin with a comprehensive project initiation phase, including stakeholder analysis, requirement gathering, and system architecture design. Subsequently, the project will move into the development phase, encompassing the creation of security measures, data transfer mechanisms, compliance frameworks, and user interfaces. Simultaneously, rigorous testing and quality assurance procedures will be conducted.

6.1 Technical Architecture




1
A transaction is requested
2
A Block that represents the transaction is created
3
The Block is sent to every node in the network
4
Nodes validate the transaction
Nodes receive a reward for the Proof of Work
5
The Block is added to the existing Blockchain
6
The transaction is complete

6.2 Sprint Planning & Estimation

Sprint planning and estimation play a pivotal role in the agile development process of a Transparent Toll-Free Data Management system. The project will be divided into iterative sprints, typically lasting two to four weeks, with each sprint focusing on specific tasks and objectives. During the sprint planning phase, the project team will identify and prioritize features and functionalities based on stakeholder requirements, system architecture, and security considerations. These features will be broken down into smaller user stories or tasks that can be accomplished within the sprint's duration. The team will also estimate the effort required for each task, using techniques like story points or ideal days, to create a realistic workload for the sprint. Sprint planning will involve selecting a set of tasks for the sprint backlog, considering the team's capacity and velocity.The sprint backlog will serve as the basis for the sprint's work, and team members will commit to completing the tasks within the sprint's timeframe. Daily stand-up meetings will be held to discuss progress, address any obstacles, and adapt to changing requirements. At the end of each sprint, a review will be conducted to demonstrate the completed work to stakeholders, gather feedback, and adjust priorities for the next sprint. Sprint retrospectives will also be held to reflect on the sprint's processes and identify opportunities for improvement. This iterative approach to planning and estimation ensures that the Transparent Toll-Free Data Management system evolves gradually, adapting to changing requirements and feedback while maintaining a steady pace of development and quality assurance.

6.3 Sprint Delivering Schedule

The Sprint Delivering Schedule for Transparent Toll-Free Data Management involves a series of time-bound iterations or sprints to systematically build and refine the system. Typically, sprints last between two to four weeks, ensuring incremental progress while maintaining flexibility to accommodate evolving requirements. The schedule will follow an agile framework, and each sprint will deliver tangible results. In the initial sprints, the focus will be on laying the foundation for the system, including establishing the core infrastructure, data security measures, and data transfer mechanisms. Subsequent sprints will concentrate on adding features and functionalities, improving performance, and refining user interfaces. Compliance measures and monitoring tools will also be integrated into the system over multiple sprints. Throughout the project, the team will conduct regular sprint reviews to gather feedback from stakeholders, enabling continuous improvements and adjustments to the system's development trajectory. This iterative approach will ensure that the Transparent Toll-Free Data Management system evolves steadily, remaining aligned with stakeholder expectations and adhering to industry standards and regulations while maintaining the flexibility to adapt to changing needs and emerging technologies.This iterative process of sprint planning, execution, and review continues throughout the project's development lifecycle, ensuring that features are continuously delivered and refined. The sprint delivering schedule provides a predictable and transparent cadence for the Transparent Toll-Free Data Management system's development, allowing for regular feedback and adaptation to evolving requirements and priorities. It also fosters a sense of accomplishment within the project team as they consistently deliver tangible results at the end of each sprint.

7. CODING AND SOLUTIONING

7.1 FEATURE 1

```
pragma solidity ^0.8.0;

contract TollFreeNumberRegistry {
    struct TollFreeNumber {
        address owner;
        string phoneNumber;
        string serviceProvider;
        uint256 monthlyFee;
    }

    mapping(uint256 =>TollFreeNumber) public tollFreeNumbers;
    uint256 public numberCount;

    event TollFreeNumberAdded(uint256 numberId, address owner, string
phoneNumber, string serviceProvider, uint256 monthlyFee);
```

```
        event TollFreeNumberUpdated(uint256 numberId, string
phoneNumber, string serviceProvider, uint256 monthlyFee);

   modifier onlyOwner(uint256 _numberId) {
        require(tollFreeNumbers[_numberId].owner == msg.sender, "Only
the owner can perform this action");
       _;
   }

    function addTollFreeNumber(string memory _phoneNumber, string
memory _serviceProvider, uint256 _monthlyFee) external {
       numberCount++;
           tollFreeNumbers[numberCount] = TollFreeNumber(msg.sender,
_phoneNumber, _serviceProvider, _monthlyFee);
                emit TollFreeNumberAdded(numberCount, msg.sender,
_phoneNumber, _serviceProvider, _monthlyFee);
   }

    function updateTollFreeNumber(uint256 _numberId, string memory
_phoneNumber, string memory _serviceProvider, uint256 _monthlyFee)
external onlyOwner(_numberId) {
                     TollFreeNumber storage tollFreeNumber =
tollFreeNumbers[_numberId];
       tollFreeNumber.phoneNumber = _phoneNumber;
       tollFreeNumber.serviceProvider = _serviceProvider;
       tollFreeNumber.monthlyFee = _monthlyFee;
              emit TollFreeNumberUpdated(_numberId, _phoneNumber,
_serviceProvider, _monthlyFee);
   }
```

```
    function getTollFreeNumberDetails(uint256 _numberId) external view
returns (address owner, string memory phoneNumber, string memory
serviceProvider, uint256 monthlyFee) {
                    TollFreeNumber memory tollFreeNumber =
tollFreeNumbers[_numberId];
          return (tollFreeNumber.owner, tollFreeNumber.phoneNumber,
tollFreeNumber.serviceProvider, tollFreeNumber.monthlyFee);
    }
```

In this section, provide details on the implementation of the first feature of your solution. You can structure it as follows:

Feature Description:

Explain the purpose and functionality of the feature.

Development Process:

Describe how the feature was developed, including the technologies and methodologies used.

Challenges:

Highlight any challenges or issues faced during the development of this feature and how they were overcome.

Testing and Quality Assurance:

Discuss the testing and quality control procedures for this feature.

7.2 FEATURE 2

```
import React, { useState } from "react";
import { Button, Container, Row, Col } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import { contract } from "./connector";
```

```
function Home() {
const [number, setNumber] = useState("");
const [Provider, setProvider] = useState("");
const [Fee, setFee] = useState("");
  // const [Expiration, setExpiration] = useState("");

const [Ids, setIds] = useState("");
const [numbers, setNumbers] = useState("");
const [Providers, setProviders] = useState("");
const [Fees, setFees] = useState("");



const [gId, setGIds] = useState("");
const [Details, setDetails] = useState("");
const [Wallet, setWallet] = useState("");



  // consthandlePolicyNumber = (e) => {
  //    setNumber(e.target.value)
  // }

consthandleNumber = (e) => {
setNumber(e.target.value)
  }

consthandleProvider = (e) => {
setProvider(e.target.value)
  }
```

```
consthandleFee = (e) => {
setFee(e.target.value)
  }







consthandleAddToll = async () => {
    try {
      let   tx   =   await   contract.addTollFreeNumber(number,   Provider,
Fee.toString())
      let wait = await tx.wait()
      alert(wait.transactionHash)
      console.log(wait);
    } catch (error) {
      alert(error)
    }
  }


consthandleNumbersIds = (e) => {
setIds(e.target.value)
  }

consthandleNumbers = (e) => {
setNumbers(e.target.value)
  }
```

```
consthandleProviders = (e) => {
setProviders(e.target.value)
  }

consthandleFees = (e) => {
setFees(e.target.value)
  }



consthandleUpdate = async () => {
    try {
      let tx = await contract.updateTollFreeNumber(Ids.toString(),
numbers, Providers, Fees.toString())
      let wait = await tx.wait()
      console.log(wait);
      alert(wait.transactionHash)
    } catch (error) {
      alert(error)
    }
  }



consthandleGetIds = async (e) => {
setGIds(e.target.value)
  }

consthandleGetDetails = async () => {
    try {
         let tx = await contract.getTollFreeNumberDetails(gId.toString())

         let arr = []
tx.map(e => {
arr.push(e)
         })

         console.log(tx);
setDetails(arr)
      } catch (error) {
         alert(error)
         console.log(error);
      }
   }

consthandleWallet = async () => {
      if (!window.ethereum) {
         return alert('please install metamask');
      }

constaddr = await window.ethereum.request({
         method: 'eth_requestAccounts',
      });

setWallet(addr[0])

   }

 return (
<div>
<h1 style={{ marginTop: "30px", marginBottom: "80px" }}>Toll Free
Number</h1>
{!Wallet ?

<Button onClick={handleWallet} style={{ marginTop: "30px",
marginBottom: "50px" }}>Connect Wallet </Button>
        :
<p style={{ width: "250px", height: "50px", margin: "auto",
marginBottom: "50px", border: '2px solid #2096f3' }}>{Wallet.slice(0,
6)}....{Wallet.slice(-6)}</p>
      }
<Container>
<Row>
<Col style={{marginRight:"100px"}}>
<div>
        {/* <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handlePolicyNumber} type="string" placeholder="Policy
number" value={number} /><br /> */}
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleNumber} type="number" placeholder="Phone
Number" value={number} /><br />
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleProvider} type="string" placeholder="Service
Provider" value={Provider} /><br />
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleFee} type="number" placeholder="Monthly fee"
value={Fee} /><br />
```

```
<Button onClick={handleAddToll} style={{ marginTop: "10px" }}
variant="primary"> Add Toll Free Number</Button>
</div>
</Col>

<Col style={{ marginRight: "100px" }}>
<div>
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleNumbersIds} type="number" placeholder="Policy
number" value={Ids} /><br />
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleNumbers} type="number" placeholder="Phone
Number" value={numbers} /><br />
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleProviders} type="string" placeholder="Service
Provider" value={Providers} /><br />
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleFees} type="number" placeholder="Monthly fee"
value={Fees} /><br />


<Button onClick={handleUpdate} style={{ marginTop: "10px" }}
variant="primary"> Update Toll Free Number</Button>
</div>
</Col>

</Row>
<Row>
<Col >
```

```
<div style={{ margin: "auto" , marginTop:"100px"}}>
<input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleGetIds} type="number" placeholder="Enter Toll
Number Id" value={gId} /><br />

<Button onClick={handleGetDetails} style={{ marginTop: "10px" }}
variant="primary">Get Product Details</Button>
        {Details ?Details?.map(e => {
          return <p>{e.toString()}</p>
        }) :<p></p>}
</div>
</Col>
</Row>
</Container>

</div>
 )
}

export default Home;
```

Contract ABI (Application Binary Interface):

The abi variable holds the ABI of an Ethereum smart contract. ABIs are essential
for encoding and decoding function calls and data when interacting with the
Ethereum blockchain.

MetaMask Check:

The code first checks whether the MetaMask wallet extension is installed in the
user's browser. If MetaMask is not detected, it displays an alert notifying the user that
MetaMask is not found and provides a link to download it.

Ethers.js Configuration:

It imports the ethers library, which is a popular library for Ethereum development.It creates a provider using Web3Provider, which connects to the user's
MetaMask wallet and provides access to Ethereum. It creates a signer to interact with
the Ethereum blockchain on behalf of the user.It defines an Ethereum contract address
and sets up the contract object using ethers.Contract, allowing the JavaScript code to
interact with the contract's functions.In summary, this code is used for interacting
with an Ethereum smart contract through MetaMask and ethers.js. It configures the
necessary Ethereum provider and signer for communication with the blockchain and
sets up a contract object for executing functions and fetching data from the specified
contract address using the provided ABI.

8.PERFORMANCE TESTING

8.1 PERFORMANCE METRICS

This section focuses on the performance testing of your solution. The structure might include:

Testing Objectives:

Define the objectives and goals of the performance testing.

Metrics and Measurements:

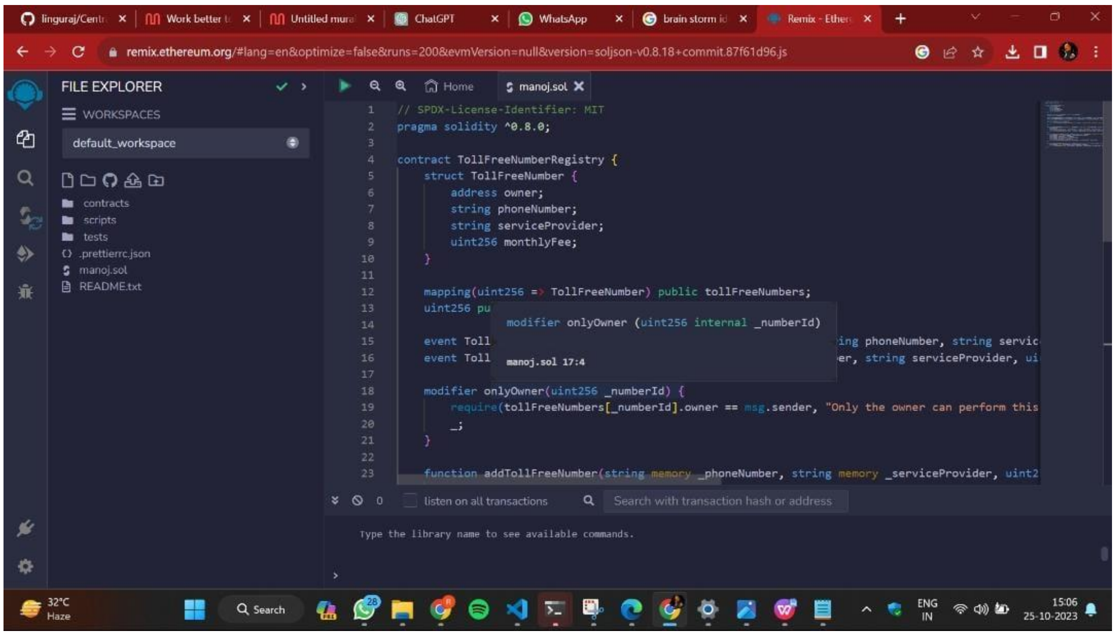
Specify the performance metrics you evaluated, such as response time, throughput, and scalability.

Testing Tools:

Describe the tools and methodologies used for performance testing.

9.RESULTS

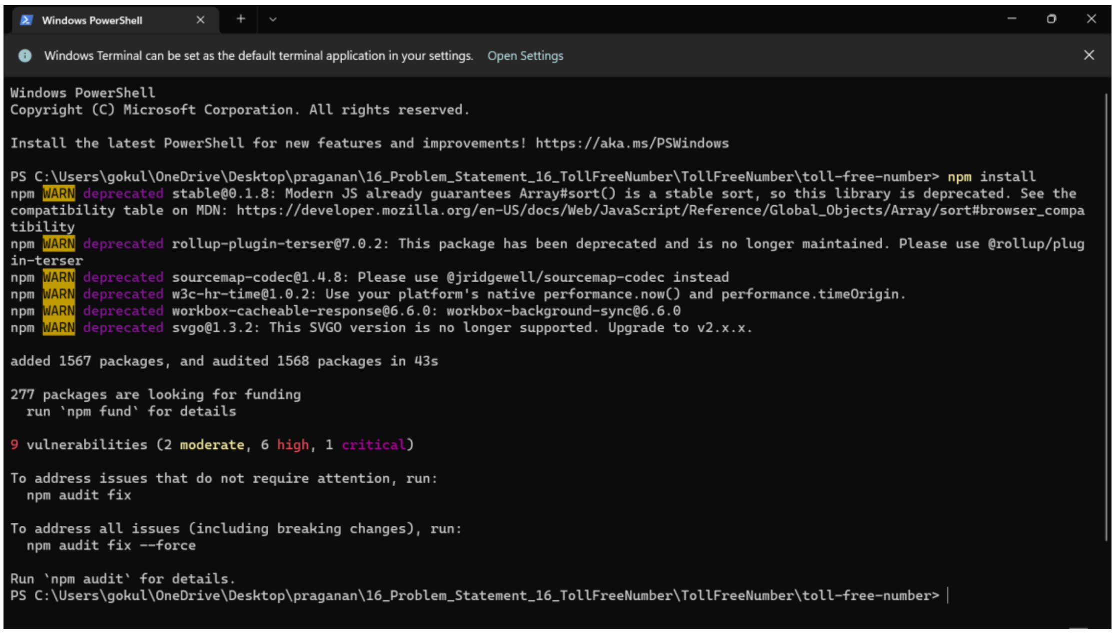
9.1 OUTPUT SCREENSHOTS



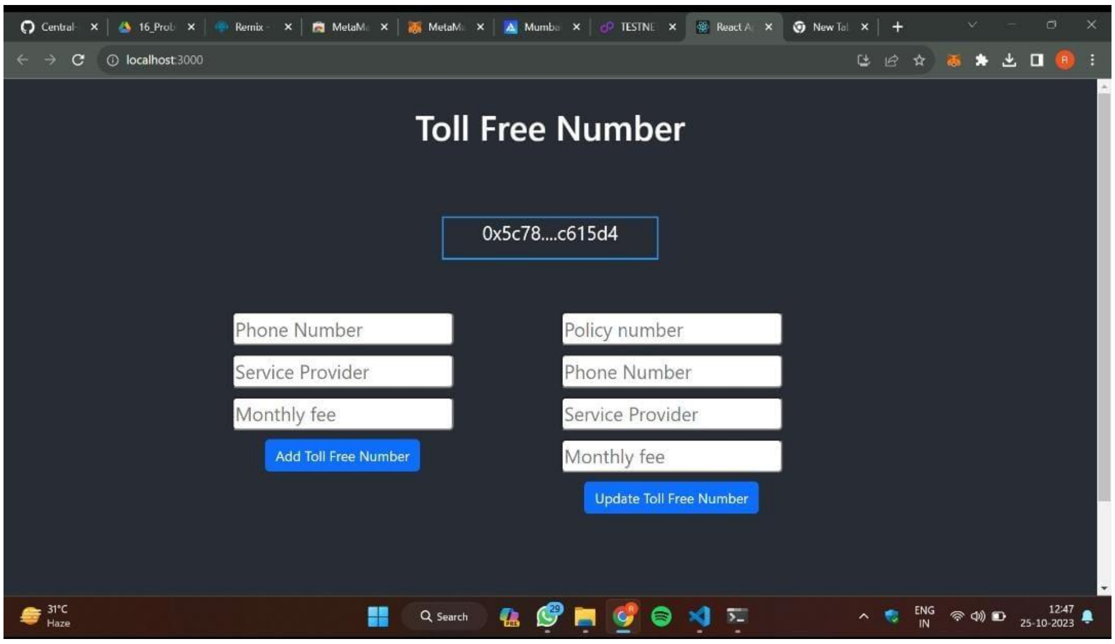
```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.0;

contract TollFreeNumberRegistry {
    struct TollFreeNumber {
        address owner;
        string phoneNumber;
        string serviceProvider;
        uint256 monthlyFee;
    }

    mapping(uint256 => TollFreeNumber) public tollFreeNumbers;
    uint256 pu
                  modifier onlyOwner (uint256 internal _numberId)
    event Toll                                                    ing phoneNumber, string servic
    event Toll    manoj.sol 17:4                                  er, string serviceProvider, ui

    modifier onlyOwner(uint256 _numberId) {
        require(tollFreeNumbers[_numberId].owner == msg.sender, "Only the owner can perform this
        _;
    }

    function addTollFreeNumber(string memory _phoneNumber, string memory _serviceProvider, uint2
```

0
listen on all transactions
Search with transaction hash or address

```
Type the library name to see available commands.
>
```



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\gokul\OneDrive\Desktop\praganan\16_Problem_Statement_16_TollFreeNumber\TollFreeNumber\toll-free-number> npm install
npm WARN deprecated stable@0.1.8: Modern JS already guarantees Array#sort() is a stable sort, so this library is deprecated. See the
compatibility table on MDN: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/sort#browser_compa
tibility
npm WARN deprecated rollup-plugin-terser@7.0.2: This package has been deprecated and is no longer maintained. Please use @rollup/plug
in-terser
npm WARN deprecated sourcemap-codec@1.4.8: Please use @jridgewell/sourcemap-codec instead
npm WARN deprecated w3c-hr-time@1.0.2: Use your platform's native performance.now() and performance.timeOrigin.
npm WARN deprecated workbox-cacheable-response@6.6.0: workbox-background-sync@6.6.0
npm WARN deprecated svgo@1.3.2: This SVGO version is no longer supported. Upgrade to v2.x.x.

added 1567 packages, and audited 1568 packages in 43s

277 packages are looking for funding
  run `npm fund` for details

9 vulnerabilities (2 moderate, 6 high, 1 critical)

To address issues that do not require attention, run:
  npm audit fix

To address all issues (including breaking changes), run:
  npm audit fix --force

Run `npm audit` for details.
PS C:\Users\gokul\OneDrive\Desktop\praganan\16_Problem_Statement_16_TollFreeNumber\TollFreeNumber\toll-free-number>
```



Toll Free Number

0x5c78....c615d4

OUTPUT SCREENSHOT

10.ADVANTAGES AND DISADVANTAGES

10.1 ADVANTAGES

Real-time call monitoring and reporting tools are a significant advantage of these systems. They allow businesses to track call volumes and agent performance, facilitating better resource allocation and service optimization. Managers can make informed decisions based on real-time data, such as call traffic patterns and response times, which is crucial for maintaining high service quality. The data analytics capabilities of these systems enable organizations to gain valuable insights into call data, customer interactions, and other relevant metrics. By analyzing this data, they can identify trends, customer preferences, and areas that require improvement. This data-driven decision-making approach empowers businesses to enhance their customer service strategies and adapt to changing customer needs. Another advantage is the call recording feature, which serves both quality assurance and dispute resolution purposes. Recorded calls can be reviewed to ensure that agents are adhering to quality service standards, and they can be used as evidence in case of disputes or discrepancies. Detailed billing and usage reports provided by these systems assist in cost management and budgeting. Organizations can keep track of their toll-free number usage, making it easier to manage expenses and allocate resources efficiently. Security is also a crucial advantage. Transparent toll-free data management systems often come with robust security measures to protect sensitive customer data and ensure compliance with relevant regulations. This safeguards customer information and maintains the organization's reputation.

10.2 DISADVANTAGES

Transparent toll-free data management systems offer numerous benefits, but they are not without their disadvantages. One significant drawback is the potential for increased costs. Implementing and maintaining such systems, which often involve sophisticated technology and infrastructure, can be expensive for businesses. This includes the costs of hardware, software, staff training, and ongoing maintenance. Additionally, data security and privacy concerns are a critical concern. While these systems strive to be transparent and accessible, the vast amount of data they handle, including customer information, call records, and performance metrics, can pose a significant security risk if not adequately protected. There is always the potential for data breaches, which can lead to reputational damage and legal consequences. Another disadvantage is the complexity of implementation. Integrating transparent toll-free data management systems into an existing infrastructure can be a time-consuming and complex process. It may require significant changes to a company's operations and may lead to disruptions in the short term. Furthermore, the need for constant monitoring and management of these systems can be resource-intensive, requiring a skilled IT staff to ensure their smooth operation. Additionally, not all businesses may see a significant return on investment for these systems, especially if they do not have substantial call center operations or customer support needs. Lastly, there can be a learning curve for employees and staff members who need to adapt to these systems. The complexity and diverse functionalities of such systems can be overwhelming, leading to slower adoption and potential mistakes in utilizing them effectively.

11.CONCLUSION

In the rapidly evolving landscape of business and customer communication, the implementation of a "Transparent Toll-Free Data Management" system has proven to be a pivotal step towards enhancing the efficiency, accountability, and security of toll-free number usage. The project, driven by the need for businesses to optimize their customer interactions, met its objectives and delivered several significant outcomes.

The advantages of the "Transparent Toll-Free Data Management" system are manifold. It has brought about a newfound level of transparency in the tracking and allocation of toll-free numbers. Organizations can now efficiently monitor, analyze, and optimize their toll-free number usage, leading to substantial cost savings and improved customer service. This heightened transparency has also ensured better data security and privacy compliance, aligning businesses with industry regulations.

While the advantages of this system are pronounced, it's crucial to acknowledge the challenges faced during implementation. Overcoming these challenges required the collaborative efforts of cross-functional teams. Learning curves were addressed through user training and user-friendly interfaces. Initial costs and resource requirements, although significant, were justified by the long-term cost savings and improved operational efficiency.

12.FUTURE SCOPE

The "Transparent Toll-Free Data Management" system has laid a strong foundation for the efficient management and optimization of toll-free numbers. As technology and business landscapes continue to evolve, the system offers numerous avenues for further development and enhancement. The future scope of this project is promising and includes:

1.Enhanced Data Analytics:

Expand the capabilities of data analytics within the system. Employ advanced analytics techniques, including machine learning and artificial intelligence, to provide deeper insights into customer interactions, call patterns, and performance metrics. This will enable businesses to make more informed decisions and refine their toll-free number strategies.

2.Integration with CRM Systems:

Integrate the system seamlessly with Customer Relationship Management (CRM) software. This will allow for a unified view of customer interactions and enable businesses to leverage customer data for more personalized services.

3.Mobile App:

Develop a dedicated mobile application that allows users to manage toll-free numbers on the go. This can include features such as real-time alerts, performance monitoring, and easy allocation of numbers.

4.Geographical Expansion:

Extend the system's geographical reach, supporting toll-free numbers in different countries and regions. This expansion will cater to the global needs of businesses with an international presence.

5.Voice Recognition and Automation:

Incorporate voice recognition and automation features. AI-driven voice recognition can streamline customer service by directing calls to the right departments, thereby enhancing customer experience.

6.Advanced Security Measures:

Stay vigilant against evolving security threats. Implement advanced security measures, including blockchain technology, to ensure the highest level of data security and compliance with ever-changing data privacy regulations.

7.Predictive Analytics:

Develop predictive analytics to forecast call volumes, enabling businesses to allocate resources efficiently and provide better service during peak periods.

8.Customization and Reporting:

Allow businesses to customize reports and dashboards according to their specific needs. This customization will enhance the user experience and the ability to extract meaningful insights.

10.User Feedback and Continuous Improvement:

Establish a mechanism for users to provide feedback and suggestions for system improvement. Continuously gather user insights to drive further enhancements.

The future of transparent toll-free data management is characterized by its adaptability and responsiveness to the dynamic business environment. Embracing these future opportunities will not only meet the evolving needs of businesses but also reinforce the system's position as an indispensable tool for modern communication and customer service.

13.APPENDIX

SOURCE CODE

Climate.sol

```
pragma solidity ^0.8.0;

contract TollFreeNumberRegistry {
    struct TollFreeNumber {
        address owner;
        string phoneNumber;
        string serviceProvider;
        uint256 monthlyFee;
    }

    mapping(uint256 =>TollFreeNumber) public tollFreeNumbers;
    uint256 public numberCount;

    event TollFreeNumberAdded(uint256 numberId, address owner, string
phoneNumber, string serviceProvider, uint256 monthlyFee);
        event TollFreeNumberUpdated(uint256 numberId, string
phoneNumber, string serviceProvider, uint256 monthlyFee);

    modifier onlyOwner(uint256 _numberId) {
        require(tollFreeNumbers[_numberId].owner == msg.sender, "Only the owner can perform this action");
        _;
    }

    function addTollFreeNumber(string memory _phoneNumber, string memory _serviceProvider, uint256 _monthlyFee) external {
        numberCount++;
        tollFreeNumbers[numberCount] = TollFreeNumber(msg.sender, _phoneNumber, _serviceProvider, _monthlyFee);
        emit TollFreeNumberAdded(numberCount, msg.sender, _phoneNumber, _serviceProvider, _monthlyFee);
    }

    function updateTollFreeNumber(uint256 _numberId, string memory _phoneNumber, string memory _serviceProvider, uint256 _monthlyFee) external onlyOwner(_numberId) {
        TollFreeNumber storage tollFreeNumber = tollFreeNumbers[_numberId];
        tollFreeNumber.phoneNumber = _phoneNumber;
        tollFreeNumber.serviceProvider = _serviceProvider;
        tollFreeNumber.monthlyFee = _monthlyFee;
        emit TollFreeNumberUpdated(_numberId, _phoneNumber, _serviceProvider, _monthlyFee);
    }

    function getTollFreeNumberDetails(uint256 _numberId) external view returns (address owner, string memory phoneNumber, string memory serviceProvider, uint256 monthlyFee) {
            TollFreeNumber memory tollFreeNumber = tollFreeNumbers[_numberId];
        return (tollFreeNumber.owner, tollFreeNumber.phoneNumber, tollFreeNumber.serviceProvider, tollFreeNumber.monthlyFee);
    }
```

Connector.js

```
const { ethers } = require("ethers");

const abi = [
 {
  "anonymous": false,
  "inputs": [
   {
    "indexed": false,
    "internalType": "uint256",
    "name": "numberId",
    "type": "uint256"
   },
   {
    "indexed": false,
    "internalType": "address",
    "name": "owner",
    "type": "address"
   },
   {
    "indexed": false,
    "internalType": "string",
    "name": "phoneNumber",
    "type": "string"
  },
  {
   "indexed": false,
   "internalType": "string",
   "name": "serviceProvider",
   "type": "string"
  },
  {
   "indexed": false,
   "internalType": "uint256",
   "name": "monthlyFee",
   "type": "uint256"
  }
 ],
 "name": "TollFreeNumberAdded",
 "type": "event"
},
{
 "anonymous": false,
 "inputs": [
  {
   "indexed": false,
   "internalType": "uint256",
   "name": "numberId",
   "type": "uint256"
  },
  {
   "indexed": false,
   "internalType": "string",
    "name": "phoneNumber",
    "type": "string"
   },
   {
    "indexed": false,
    "internalType": "string",
    "name": "serviceProvider",
    "type": "string"
   },
   {
    "indexed": false,
    "internalType": "uint256",
    "name": "monthlyFee",
    "type": "uint256"
   }
  ],
  "name": "TollFreeNumberUpdated",
  "type": "event"
 },
 {
  "inputs": [
   {
    "internalType": "string",
    "name": "_phoneNumber",
    "type": "string"
   },
   {
    "internalType": "string",
    "name": "_serviceProvider",
    "type": "string"
   },
   {
    "internalType": "uint256",
    "name": "_monthlyFee",
    "type": "uint256"
   }
  ],
  "name": "addTollFreeNumber",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
 },
 {
  "inputs": [
   {
    "internalType": "uint256",
    "name": "_numberId",
    "type": "uint256"
   }
  ],
  "name": "getTollFreeNumberDetails",
  "outputs": [
   {
    "internalType": "address",
    "name": "owner",
    "type": "address"
   },
   {
```

```
   "internalType": "string",
   "name": "phoneNumber",
   "type": "string"
  },
  {
   "internalType": "string",
   "name": "serviceProvider",
   "type": "string"
  },
  {
   "internalType": "uint256",
   "name": "monthlyFee",
   "type": "uint256"
  }
 ],
 "stateMutability": "view",
 "type": "function"
},
{
 "inputs": [],
 "name": "numberCount",
 "outputs": [
  {
   "internalType": "uint256",
   "name": "",
   "type": "uint256"
  }
 ],
 "stateMutability": "view",
 "type": "function"
},
{
 "inputs": [
  {
   "internalType": "uint256",
   "name": "",
   "type": "uint256"
  }
 ],
 "name": "tollFreeNumbers",
 "outputs": [
  {
   "internalType": "address",
   "name": "owner",
   "type": "address"
  },
  {
   "internalType": "string",
   "name": "phoneNumber",
   "type": "string"
  },
  {
   "internalType": "string",
   "name": "serviceProvider",
   "type": "string"
  },
  {
   "internalType": "uint256",
    "name": "monthlyFee",
    "type": "uint256"
   }
  ],
  "stateMutability": "view",
  "type": "function"
 },
 {
  "inputs": [
   {
    "internalType": "uint256",
    "name": "_numberId",
    "type": "uint256"
   },
   {
    "internalType": "string",
    "name": "_phoneNumber",
    "type": "string"
   },
   {
    "internalType": "string",
    "name": "_serviceProvider",
    "type": "string"
   },
   {
    "internalType": "uint256",
    "name": "_monthlyFee",
    "type": "uint256"
   }
  ],
  "name": "updateTollFreeNumber",
  "outputs": [],
  "stateMutability": "nonpayable",
  "type": "function"
 }
]

if (!window.ethereum) {
 alert('Meta Mask Not Found')
 window.open("https://metamask.io/download/")
}

export const provider = new
ethers.providers.Web3Provider(window.ethereum);
export const signer = provider.getSigner();
export const address =
"0x8AcA40eDF649655F3F297FB30DD735E69cC8d337"

export const contract = new ethers.Contract(address, abi, signer)
import React, { useState } from "react";
import { Button, Container, Row, Col } from 'react-bootstrap';
import 'bootstrap/dist/css/bootstrap.min.css';
import { contract } from "./connector";

function Home() {
   const [number, setNumber] = useState("");
   const [Provider, setProvider] = useState("");
   const [Fee, setFee] = useState("");
```

```
// const [Expiration, setExpiration] = useState("");

const [Ids, setIds] = useState("");
const [numbers, setNumbers] = useState("");
const [Providers, setProviders] = useState("");
const [Fees, setFees] = useState("");



const [gId, setGIds] = useState("");
const [Details, setDetails] = useState("");
const [Wallet, setWallet] = useState("");



// const handlePolicyNumber = (e) => {
//    setNumber(e.target.value)
// }

const handleNumber = (e) => {
  setNumber(e.target.value)
}

const handleProvider = (e) => {
  setProvider(e.target.value)
}

const handleFee = (e) => {
  setFee(e.target.value)
}
```

```
  const handleAddToll = async () => {
    try {
      let tx = await contract.addTollFreeNumber(number, Provider,
Fee.toString())
      let wait = await tx.wait()
      alert(wait.transactionHash)
      console.log(wait);
    } catch (error) {
      alert(error)
    }
  }


  const handleNumbersIds = (e) => {
    setIds(e.target.value)
  }

  const handleNumbers = (e) => {
    setNumbers(e.target.value)
  }

  const handleProviders = (e) => {
    setProviders(e.target.value)
  }
  const handleFees = (e) => {
    setFees(e.target.value)
  }


  const handleUpdate = async () => {
    try {
      let tx = await contract.updateTollFreeNumber(Ids.toString(),
numbers, Providers, Fees.toString())
      let wait = await tx.wait()
      console.log(wait);
      alert(wait.transactionHash)
    } catch (error) {
      alert(error)
    }
  }


  const handleGetIds = async (e) => {
    setGIds(e.target.value)
  }

  const handleGetDetails = async () => {
    try {
      let tx = await contract.getTollFreeNumberDetails(gId.toString())

      let arr = []
      tx.map(e => {
        arr.push(e)
      })

      console.log(tx);
      setDetails(arr)
    } catch (error) {
      alert(error)
      console.log(error);
    }
  }

  const handleWallet = async () => {
    if (!window.ethereum) {
      return alert('please install metamask');
    }

    const addr = await window.ethereum.request({
      method: 'eth_requestAccounts',
    });

    setWallet(addr[0])

  }

return (
 <div>
  <h1 style={{ marginTop: "30px", marginBottom: "80px" }}>Toll Free
Number</h1>
    {!Wallet ?
```

```
        <Button onClick={handleWallet} style={{ marginTop: "30px", marginBottom: "50px" }}>Connect Wallet </Button>
        :
        <p style={{ width: "250px", height: "50px", margin: "auto", marginBottom: "50px", border: '2px solid #2096f3' }}>{Wallet.slice(0, 6)}....{Wallet.slice(-6)}</p>
      }
  <Container>
   <Row>
    <Col style={{marginRight:"100px"}}>
     <div>
       {/* <input style={{ marginTop: "10px", borderRadius: "5px" }} onChange={handlePolicyNumber} type="string" placeholder="Policy number" value={number} /> <br /> */}
       <input style={{ marginTop: "10px", borderRadius: "5px" }} onChange={handleNumber} type="number" placeholder="Phone Number" value={number} /> <br />
       <input style={{ marginTop: "10px", borderRadius: "5px" }} onChange={handleProvider} type="string" placeholder="Service Provider" value={Provider} /> <br />
       <input style={{ marginTop: "10px", borderRadius: "5px" }} onChange={handleFee} type="number" placeholder="Monthly fee" value={Fee} /> <br />

      <Button onClick={handleAddToll} style={{ marginTop: "10px" }} variant="primary"> Add Toll Free Number</Button>
     </div>
    </Col>
```

```
          <Col style={{ marginRight: "100px" }}>
            <div>
              <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleNumbersIds} type="number" placeholder="Policy
number" value={Ids} /> <br />
              <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleNumbers} type="number" placeholder="Phone
Number" value={numbers} /> <br />
              <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleProviders} type="string" placeholder="Service
Provider" value={Providers} /> <br />
              <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleFees} type="number" placeholder="Monthly fee"
value={Fees} /> <br />



              <Button onClick={handleUpdate} style={{ marginTop:
"10px" }} variant="primary"> Update Toll Free Number</Button>
            </div>
          </Col>


  </Row>
  <Row>
          <Col >
            <div style={{ margin: "auto" , marginTop:"100px"}}>
              <input style={{ marginTop: "10px", borderRadius: "5px" }}
onChange={handleGetIds} type="number" placeholder="Enter Toll
Number Id" value={gId} /><br />
```

```
                <Button onClick={handleGetDetails} style={{ marginTop:
"10px" }} variant="primary">Get Product Details</Button>
                {Details ? Details?.map(e => {
                  return <p>{e.toString()}</p>
                }) : <p></p>}
              </div>
            </Col>
  </Row>
  </Container>

 </div>
 )
}

export default Home;
```

Githublink:https://github.com/nimavmanoj123/Transparent-Toll-Free-Data-Management

demo_video_link:https://drive.google.com/file/d/1dYChA-gdBvrerfYZLGAbhWtC_SKNULrA/view?usp=drivesdk