SE Project Report

CRM Software

Team Elites

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Software Development Life-Cycle (SDLC) Model

Software Development Life-Cycle used in this project: **Agile Methodology**

It is based on iterative and incremental development, where requirements and solutions evolve through collaboration between cross-functional teams in our case it evolved through **cross-functional individuals.**

Importance was given to the Agile Principles:

1. **Individuals and interactions over processes and tools**: We as a team have worked on communication and collaboration in the process to ensure we shared the same vision.
2. **Working software over comprehensive documentation**: Focused on delivering a working software although we had to submit a comprehensive report.
3. **Customer collaboration over contract negotiation**: We took the reviews and constructive criticism in the first project review as well as advice given by another team (assuming them as the customer) into consideration.
4. **Responding to change over following a plan**: Our plan has evolved over the last few months and responding positively to the changes has been a huge insight and learning.

Sprints:

The duration of each sprint was about a week for our team to experience feedback loops and tasks were assigned to each individual after discussion with the team members.

Feedback:

Feedback from team members was taken seriously, as review and monitoring of key metrics and progress is an important part of agile.

Software Requirements Specification and User Stories

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Revision History

Name	Date	Reason For Changes	Version
Team Elites	10/17/22	initial draft	1.0 draft 1

1. Introduction

1.1 Purpose

The software functional and nonfunctional requirements for Customer Relationship Management(CRM) system's release 1.0 are described in this SRS. CRM is the core business strategy that integrates internal processes and functions, and external networks, to create and deliver value to targeted customers, at a profit. It is grounded on high quality customer data and enabled by IT. The project team members who will implement and test the system's proper operation are the ones who should use this document. All criteria listed here, unless otherwise stated, are high priorities and committed for release 1.0.

In short, the purpose of this SRS document is to provide a detailed overview of our software product, its parameters and goals. This document describes the project's user interface, hardware and software requirements. It defines how our client, team and audience see the product and its functionality. Nonetheless, it helps any designer and developer to assist in software delivery lifecycle (SDLC) processes.

1.2 Project Scope and Product Features

The Customer Relationship Management(CRM) system replaces a conventional database with a platform that connects different departments, from marketing to sales to customer service, and organizes their notes, activities, and metrics into one cohesive system. Every user has easy, direct access to the real-time client data they need. A unique username and password is required for authentication. Once logged in customers can be added and their details can be modified or updated. CRUD operations can be performed on all the client as well as team/project members data.Without a proper CRM strategy, customer information will be all over the place, and it'll be hard to keep track of all the touch points and interactions that have taken place with particular customers. The CRM System allows users to build connections with customers, which in turn helps to identify their needs and requirements and provide them with personalized services.

1.3 References

1. Lawrence Ang , Francis Buttle. *CRM software applications and business performance.*

2. Steven A. Taylor, Gary L. Hunter . *The impact of loyalty with e‐CRM software and e‐services*

3. Marc J. Schniederjans. *An operations management perspective on adopting customer-relations management (CRM) software*

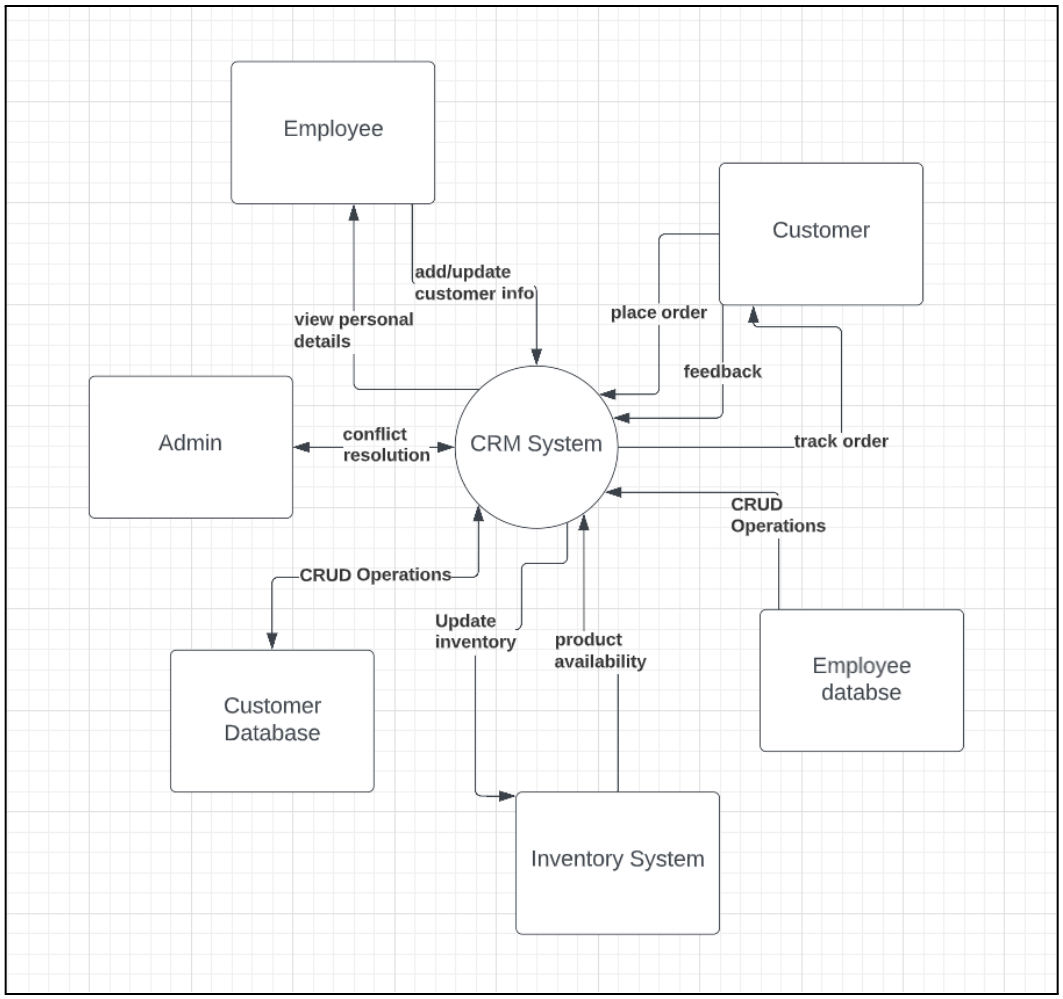
2. Overall Description

2.1 Product Perspective

The CRM software allows for easy access to customer data using a searchable database to access client and prospect information during meetings. The CRM software lets users standardize workflows and processes associated with sales, marketing, and customer support to improve coordination between these teams. The software also provides actionable insights into business performance and customer behavior.

2.2 User Classes and Characteristics

User	User is one who manages records, their own or those shared by other users, within the organization. In addition to accessing the CRM data, some of the users can perform administrative functions for smooth running of the CRM account.



Context diagram for release 1.0 of the Customer Relationship Management System..

Admin	The admin can perform administrative functions for smooth running of the CRM system. The admin would have the authority to change parameters of the system such as pricing policy, etc. Admin also decides the permissions available for the users, and would be allowed to modify the same.
Customer Database	The database stores information regarding the customers, and allows for creating, retrieving, updating and deleting the data. Access to the database is restricted by the role of the user, with the Admin having the highest privilege.
Customer	Customer is the client whose details are stored in the database by the employees. They are allowed to place orders, track and provide feedback about the same. Once payment has been processed successfully, the customer would also be able to download invoices.

2.3 Operating Environment

OE-1: The user interface for the software shall be compatible with any browser such as Mozilla Firefox or Google Chrome by which the user can access to the system.

OE-2: Since the application must run over the internet, all the hardware required to connect to the internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

2.4 Design and Implementation Constraints

CO-1: The computers must be equipped with web browsers such as Firefox, Chrome.

CO-2: The product must be stored in such a way that allows the client easy access to it.

CO-3: Response time for loading the product should take no longer than five minutes.

CO-4: A general knowledge of basic computer skills is required to use the product.

2.5 User Documentation

UD-1: On-line help system becomes a critical component of the system which shall be provided by the licensing entity..

UD-2: The software shall provide specific guidelines to a user for using the CRM system as well.

2.6 Assumptions and Dependencies

AS-1: The CRM system is available at all times, communication between the browser and database is secure and reliable.

3. System Features

3.1 Main components of CRM

3.1.1 Description and Priority

Details of the user including name, company name, category, job category, etc are added to the database by the respective dept. Customers are allowed to track their order, provide feedback, and place orders. At the highest level, the administrator supervises all the clients under him & he can access all the data. An Inventory system keeps track of product availability and updates when an order is placed/cancelled.

3.1.2 Stimulus/Response Sequences

Stimulus: The user enters a user name & password.
Response: Company database verifies the username and password and gives access to the user if the username and password matches.
Stimulus: User requests for customer information.
Response: The system upon verification of the role of the user, retrieves the data from the database and allows for operations on it.
Stimulus: User tries to place an order/provide feedback.
Response: If the user is verified as a customer, the operation is permitted and updated in the database.

3.1.3 Functional Requirements

CRM.User :	System allows the user to create an account or login into an existing account to access client/customer details.
CRM.User.Signup :	System allows users to enter information to the database to register and create an account.
CRM.User.Login :	System allows the user to login to access the customer information using a unique username and password.
CRM.CreateRoles :	Roles such as team or customer/client can be added into the CRM database.
CRM.CreateRoles.Team :	System allows the user to add team members and other information such as their email, phone number, profile, project and designation.
CRM.CreateRoles.Customer :	Customer details like name and profile are added into the database to be analysed further. CRM also makes this data available to any department that requires it.

	As a result sales,marketing and personnel departments can improve their consumer understanding.
CRM.Update :	Team details or customer details can be modified or updated.
CRM.Delete :	The system allows the deletion of records from the database one at a time.
CRM.Dashboard :	Used to navigate through the CRM system interface
CRM.Dashboard.Home :	Used to display the current projects, teams and customer/client details in a table format along with their profile.
CRM.Dashboard.Profile :	System displays the profile of the current user accessing the database.
CRM.CustomerQuestions :	Maintains a list of project related and frequently asked questions.
CRM.CustomerFeedback :	System maintains a database of customer feedback and improvements possible.

4. External Interface Requirements

4.1 User Interfaces

UI-1: The User interface shall have a Menu to navigate through various features.

UI-2: The system shall provide a help link from each page to explain how to use that page.

UI-3: The various features can be accessed by navigating through the links given on the Menu to perform required operations to the user.

4.2 Hardware Interfaces

HI-1: As this is a software based product, there is no hardware required.

4.3 Software Interfaces

SI-1: Authentication system

SI-1.1: The user shall enter his user credentials which includes unique username and password.

SI-1.2: The password must strictly adhere to whereas checks to have a good security system for the users.

SI-1.3: User can also get auto-generated suggestions to create their password

SI-1.4: Every time the user enters his credentials, the call would be sent to the database to fetch the data.

SI-1.5: The key value pair of user credentials are verified and logged in successfully only if they're correct.

SI-2: Operating System

SI-2.1: An Inventory system keeps track of product availability and updates when an order is placed/cancelled.

SI-2.2: Customers are allowed to track their order, provide feedback, and place orders

SI-2.3: Administrator supervises all the clients under him & he can access all the data

SI-2.4: User can request for customer information, upon successful verification retrieves the data from the database and allows for operations on it.

SI-2.5: Dashboard is used to display the current projects, teams and customer/client details in a table format along with their profile.

SI-2.6: The profile in the dashboard provides details of current use accessing the database.

4.4 Communications Interfaces

CI-1: The user shall be sent an OTP for verification of phone number before registration

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: The database system shall accommodate 5 users during each session, with an estimated average session duration of 30 minutes.

PE-2: The CRM system shall accommodate only a single request at a time to ensure quick and robust responses.

PE-3: Responses to queries shall take no longer than 2 seconds to load onto the screen after the user submits the query.

PE-4: The system shall return the information to users within 30 seconds after the user submits customer details to the system.

PE-5: The system shall return an acknowledgement as a confirmation of the completion of the transaction within 10 seconds after the completion of the transaction.

PE-6: The system shall log out of the session 20 minutes after there is no activity.

5.3 Security Requirements

SE-1: All transactions that involve financial information or personally identifiable information shall be encrypted per RSA.

SE-2: Users shall be required to log in using the unique username and password for all operations.

SE-3: The system shall permit only bank staff members who are on the list of authorized to create or edit menus.

SE-4: Login ID and password are encrypted using RSA

SE-5: The client/customer information is stored in a database accessible only by authorised members who have access to a security key.

SE-6: Client details are confidential and are not available for the public.

5.4 Software Quality Attributes

Availability-1: The Customer Relationship Management system shall be available to users at any time of the day throughout the year.

Robustness-1: If the connection between the user and the system is broken prior to an order being either confirmed or canceled, the Customer Relationship Management system will end the session and log out.

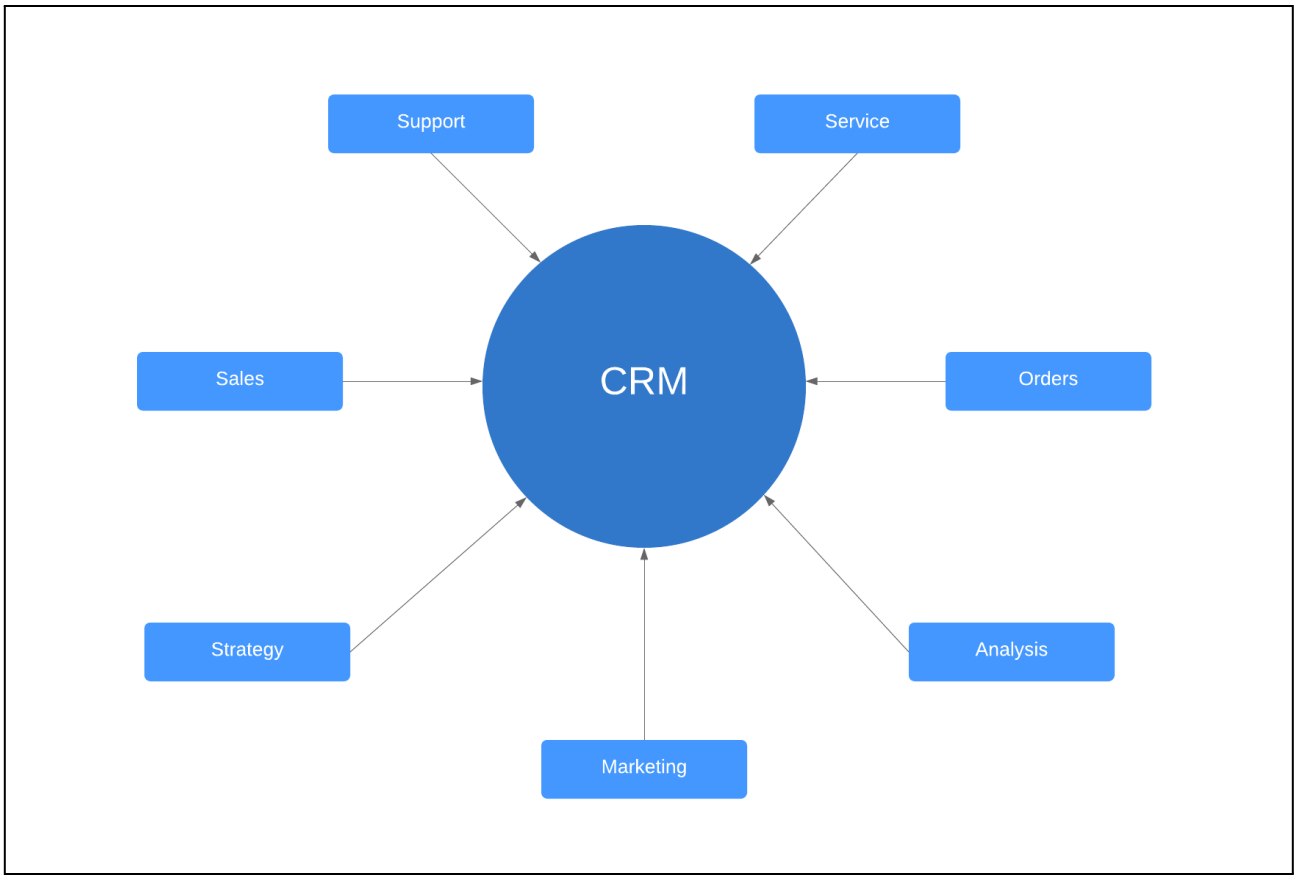
Security-1: The fingerprint Customer Relationship Management system uses RSA for storing all login details and details of the users.

Appendix A: Data Dictionary and Data Model

user details = user name
+ phone number
+ email
+ name

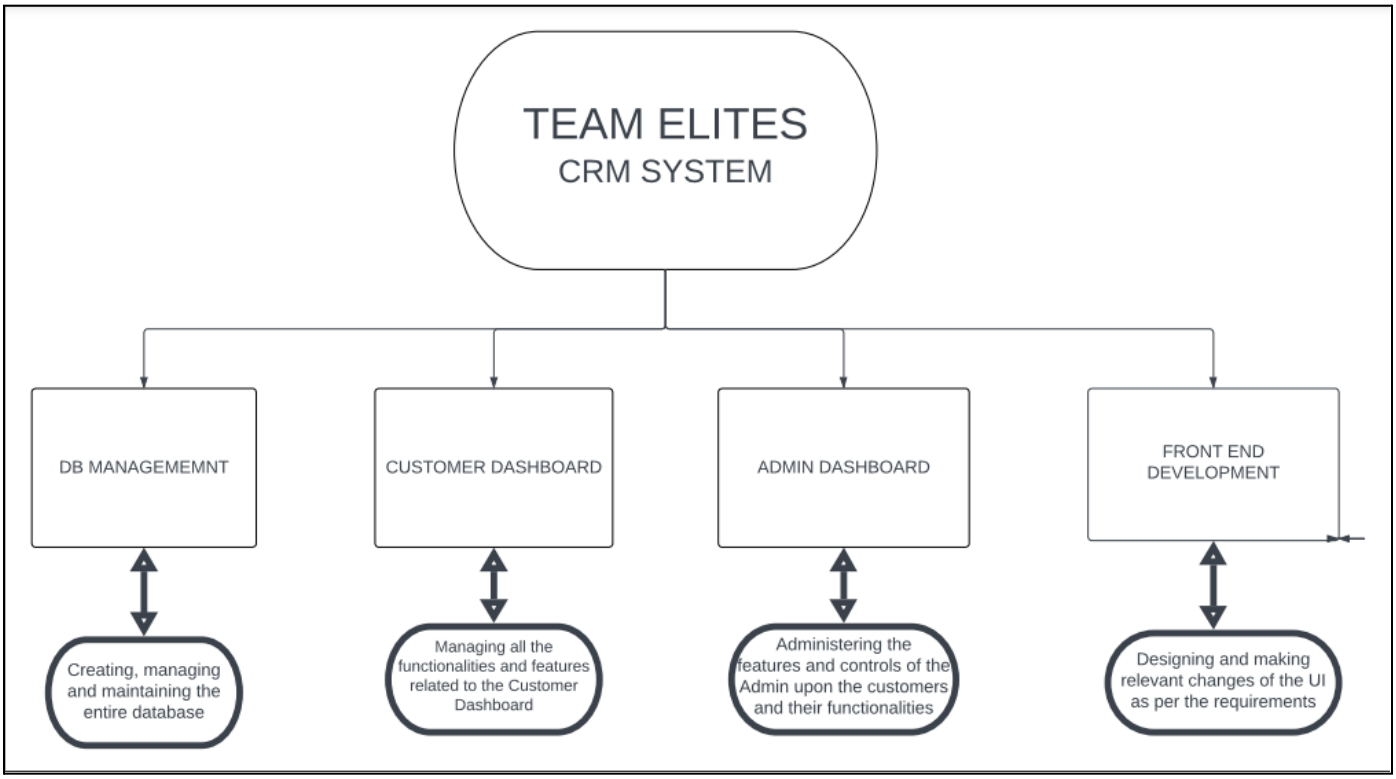
encryption = all the transactions and CRUD operations are RSA encrypted

place-order	=	customer has option to place order through crm software
user menu	=	user interface of the user to navigate through various options
help	=	option given to understand the interface better for users not familiar with the software
expire-session	=	if the session is taking more time than expected, it is automatically logged out
otp verification	=	After retrieving the user's data based on the fingerprint sensor entered by the user, to confirm the user's authenticity, opt is validated
dashboard	=	Detailed menu to navigate through various features available in crm software
inventory	=	real time operating system which keeps track of product availability
customer database	=	centralised database consisting of all the data of the customers
conflict-resolution	=	there is an admin to resolve any conflicts that arises in crm software
feedback	=	customer has a feature provide feedback
track-order	=	the customer has a feature to track the order which he has placed.
place-order	=	customer can place an order based on his requirements


Support
Service
CRM
Sales
Orders
Strategy
Analysis
Marketing

CRM Model

Work Breakdown Structure



Architectural and Design Diagram:

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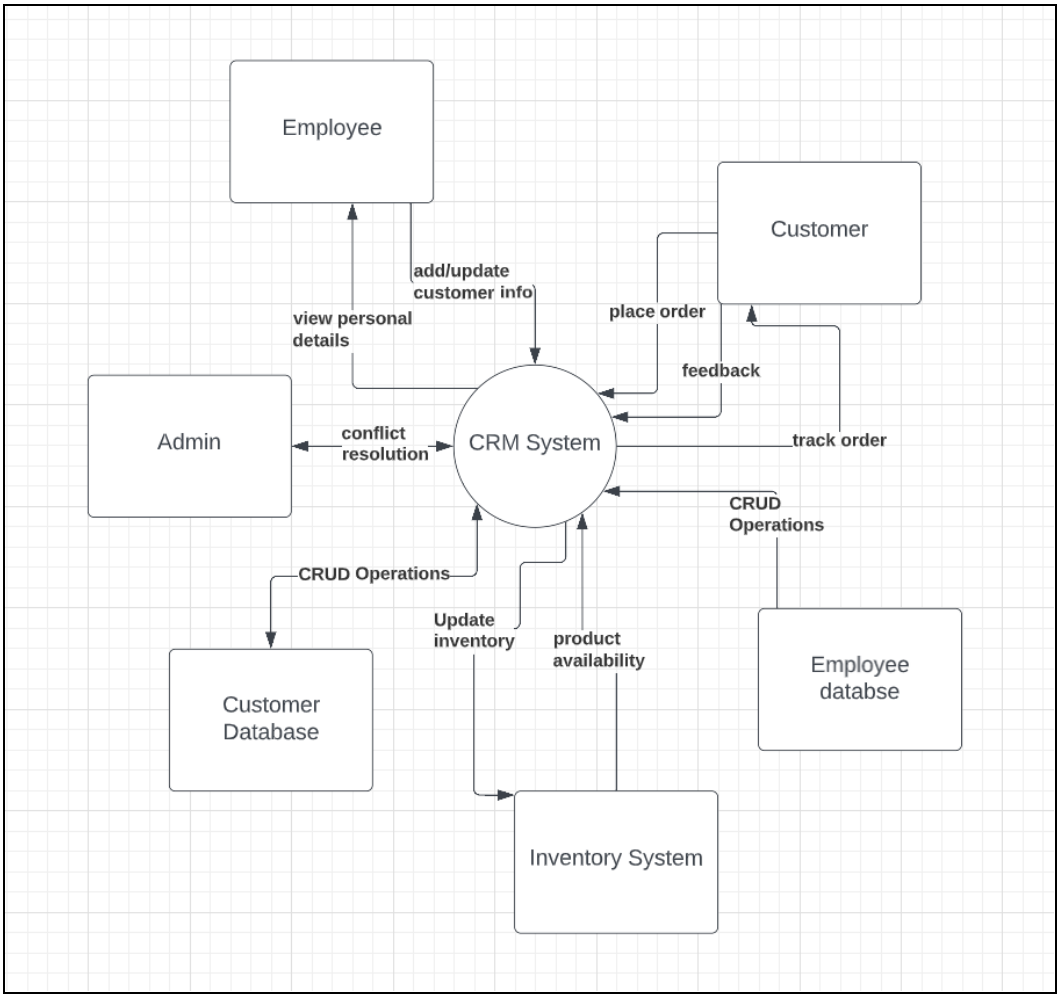
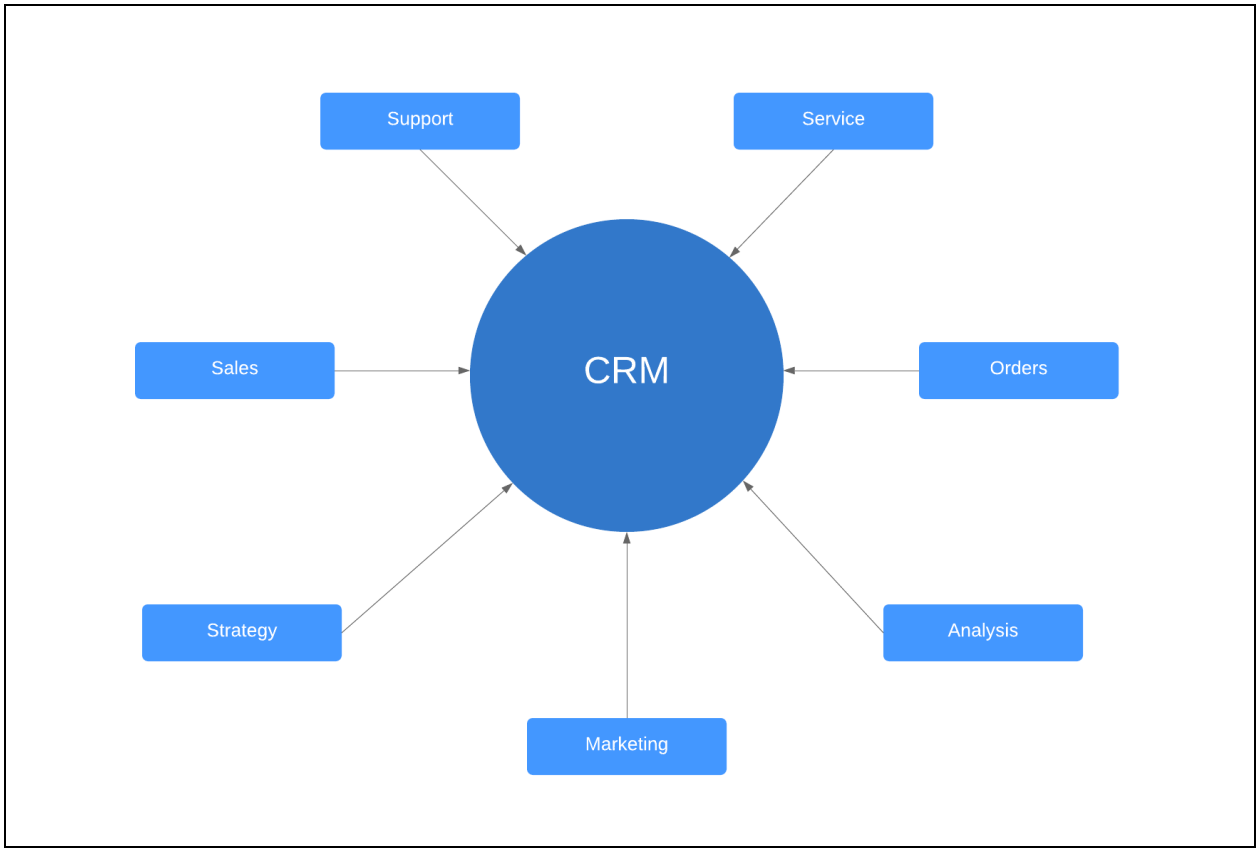
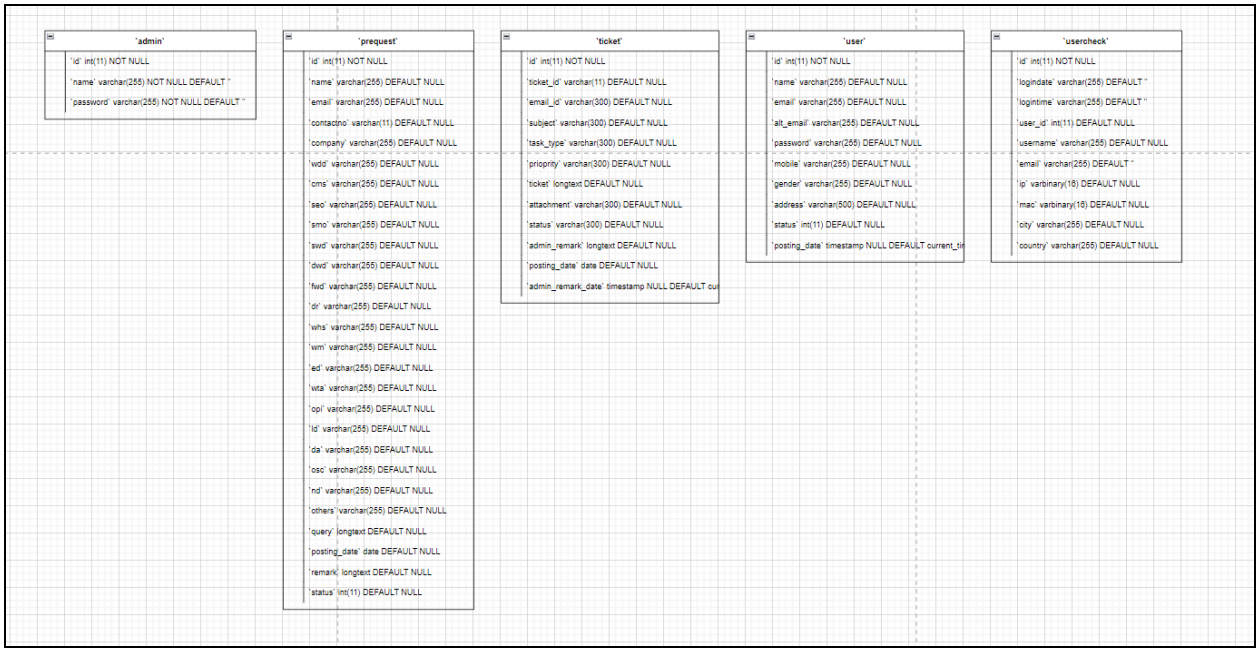




SQL Database:



Coding Practices and Standards Used

1. Writing clean and concise code and following the K.I.S.S (Keep it simple, Stupid) principle is one of the most important practices we kept in mind.
2. Continuously Testing From End to End gives you more confidence regarding your code quality.
3. Using appropriate variable names
4. Keeping code Consistent, When working with a team, it's important to have a consistent style guide for the codebase.
5. Use indentation, parentheses, blank spaces, and blank lines to enhance readability.
6. Setting time estimates realistically.
7. Writing code that is not necessary. Following the YAGNI " You ain't gonna need it" principle.
8. Not nesting too deeply.

9. Make Your Code As Easy to Understand As Possible for Easy Collaboration

Supply Chain Management Used

1. GitHub code hosting platform was used to collaborate and make changes to the repository.
2. All the team members made commits to different branches of the same repository.
3. Changes would be first committed to the local repository on the machine of the team member and after review, would be pushed to the origin (remote) repository.
4. Pull requests were reviewed by all the team members and merged into the main branch.
5. Releases of the software were drafted using the inbuilt GitHub tool and later published.

Test strategy, test plan, test suite and test cases created

Test strategy:

A CRM strategy is a plan of action combining our customer process with the developers and backend. A CRM tool is used to convert leads into prospects and prospects into paying customers by personalising the customer journey.

Steps to build CRM Strategy:

1. Align Company and CRM Goals
2. Understand the customer
3. Map customer's Journey
4. Take in customer feedback and allow them to raise tickets

Test plan:

There are essentially two general domains to test in a CRM system, they are – data quality and data conversion, and functionality. Apart from these two main domains, other testing processes also play a crucial role.

Data Quality & Data Conversion:

1. Data storing done using mysql
2. No data duplication
3. Hidden data remains hidden
4. No wrong fields populated
5. New and updated data saves well
6. No missing data

Test cases:

Signup:

Test case 1 (email format verification):

Input email: abcd.com

Output: invalid email prompt

Test case 2 (email format verification):

Input email: abcd@something.com

Output: signup successful

Test Case 3 (incomplete fields)

Input: any empty field

Output: incomplete fields prompt

Quotation request:

Test Case 1 (No service mentioned)

Output: Invalid request

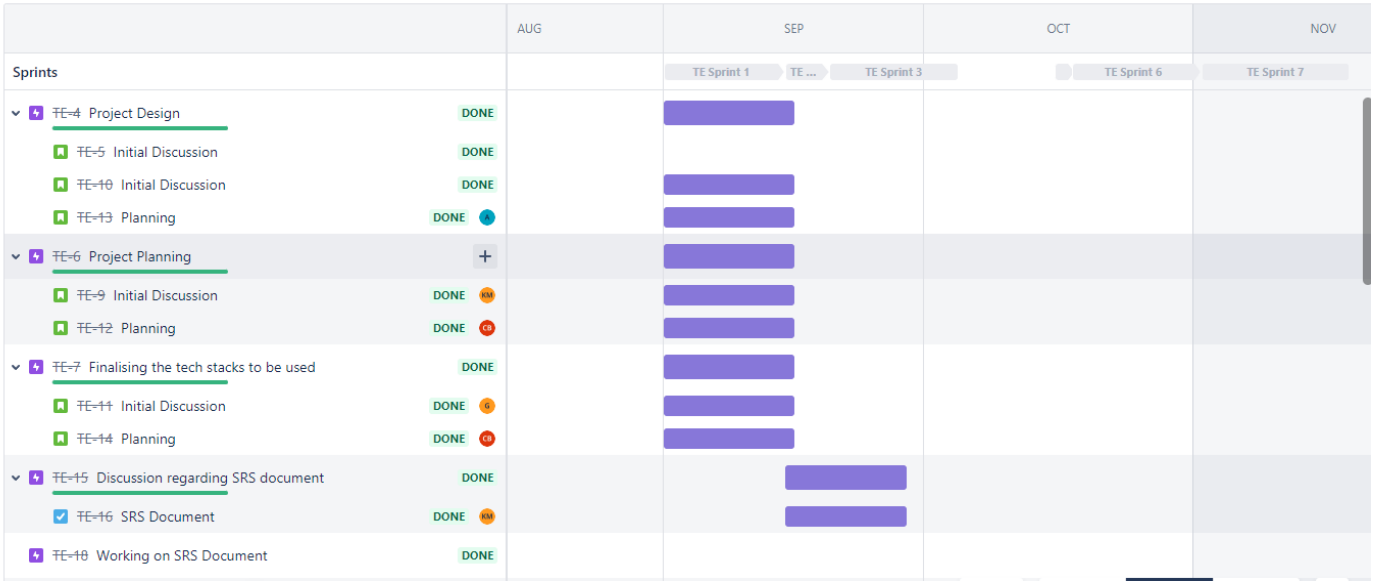
Ticket Creation:

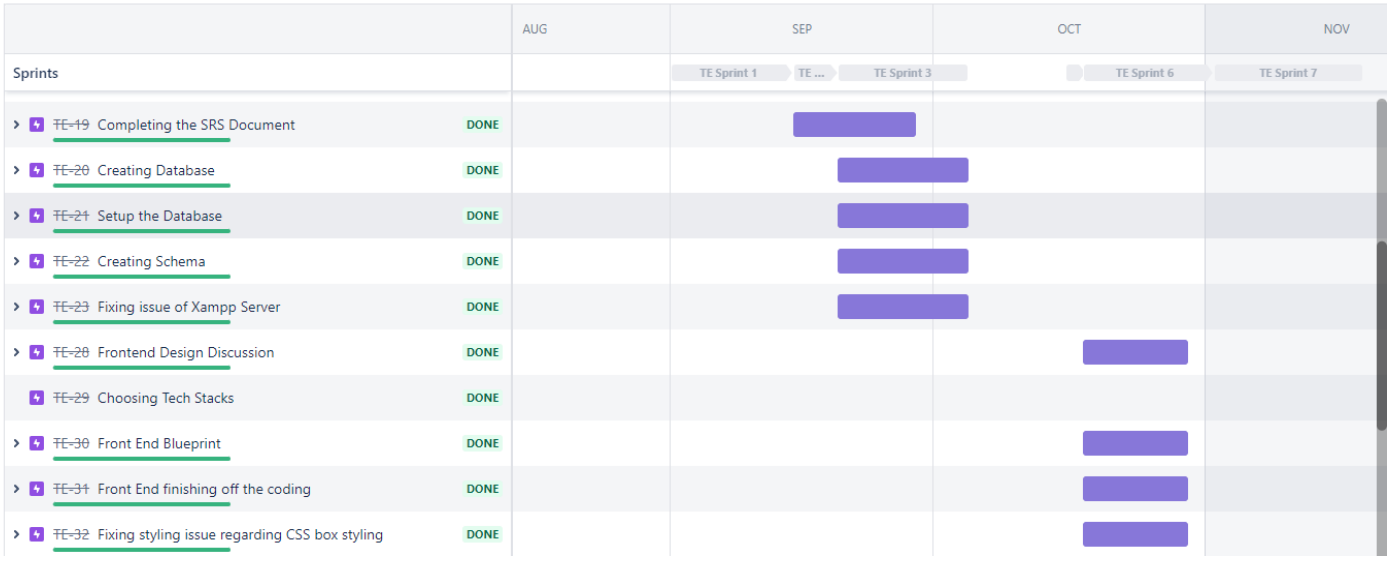
Test case 1 (options validation)

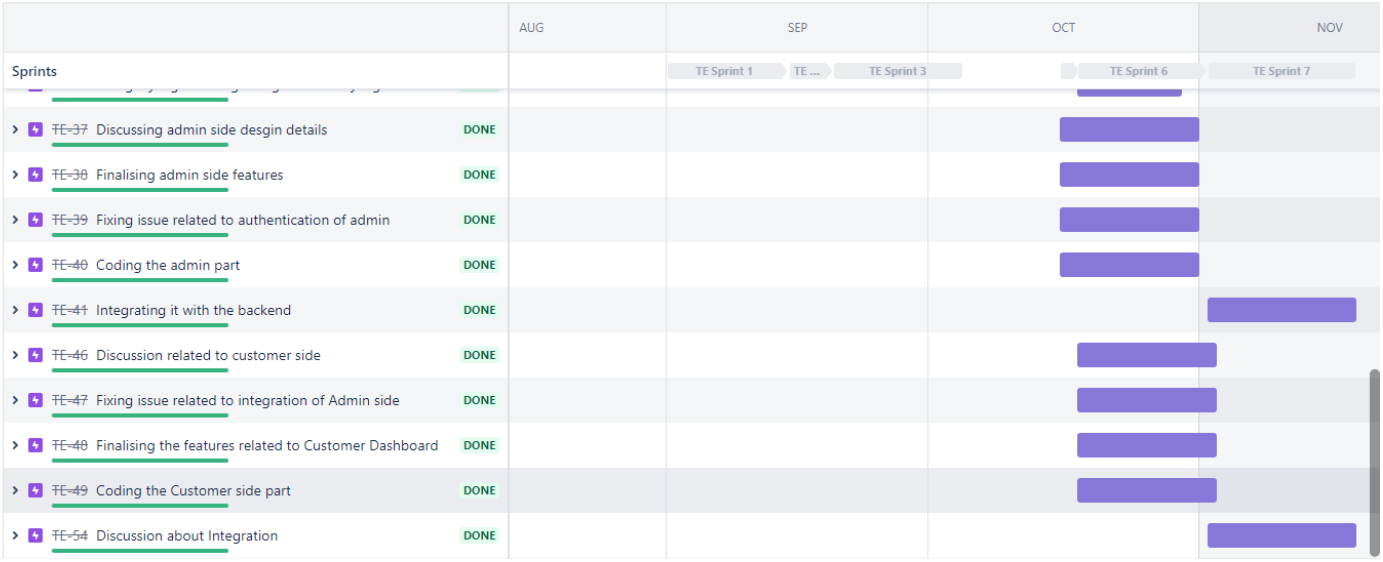
Input: select one or more options

Output: Ticket created and updated in the database

Gantt Charts for the project:

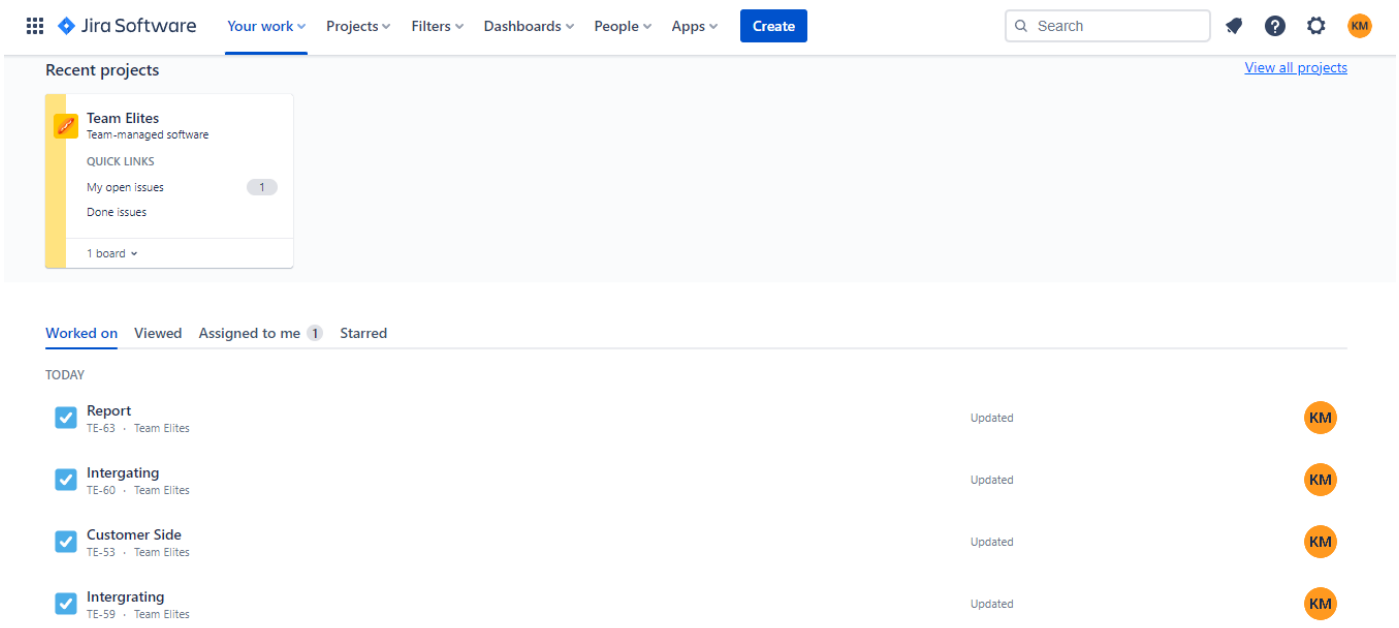




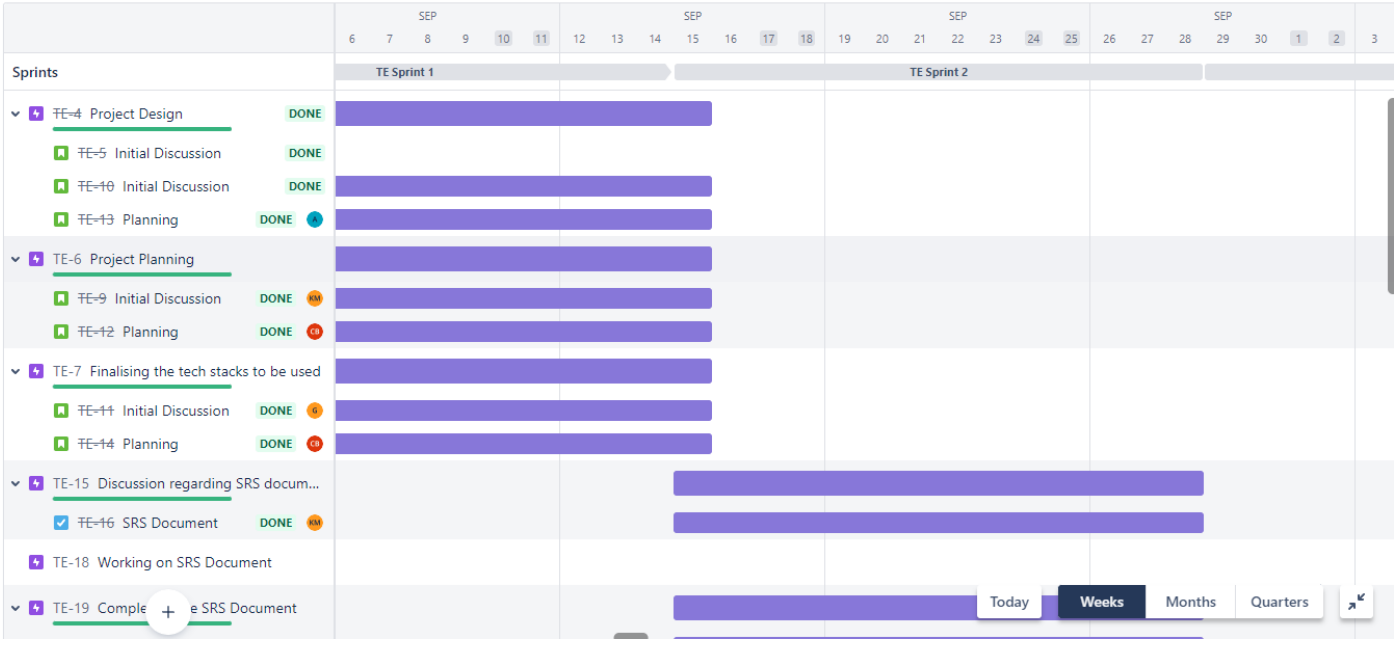


JIRA report showing all the tasks created, tracked, updated, monitored and closed

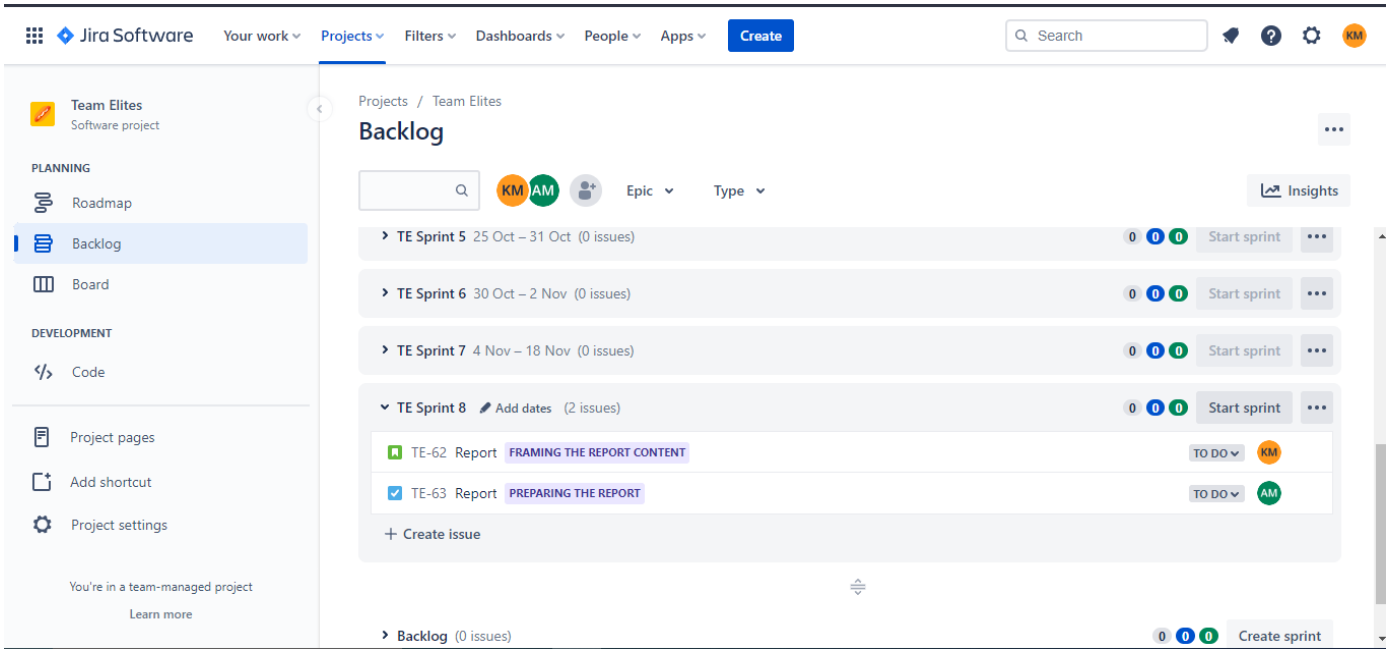
The interface of JIRA project management system of our Team Elites



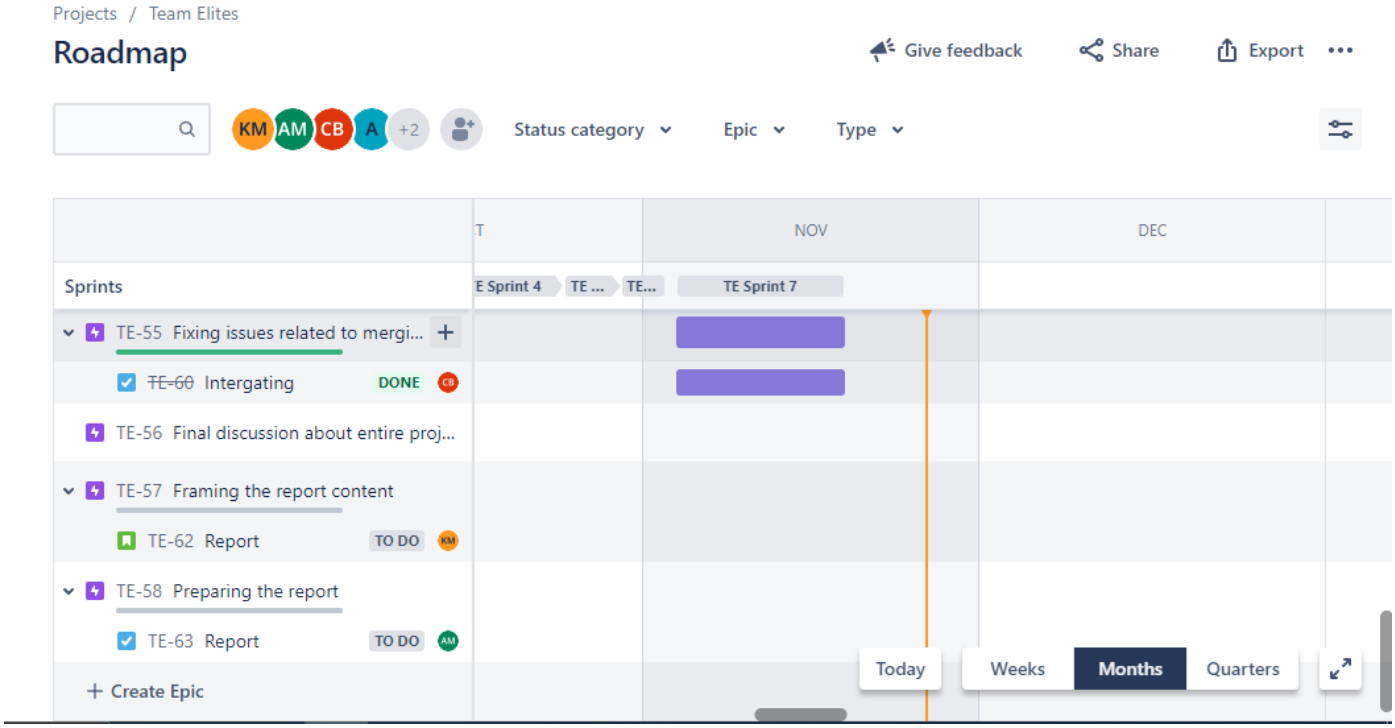
The monthly timeline of our project, showing the tasks assigned to different team members with the months



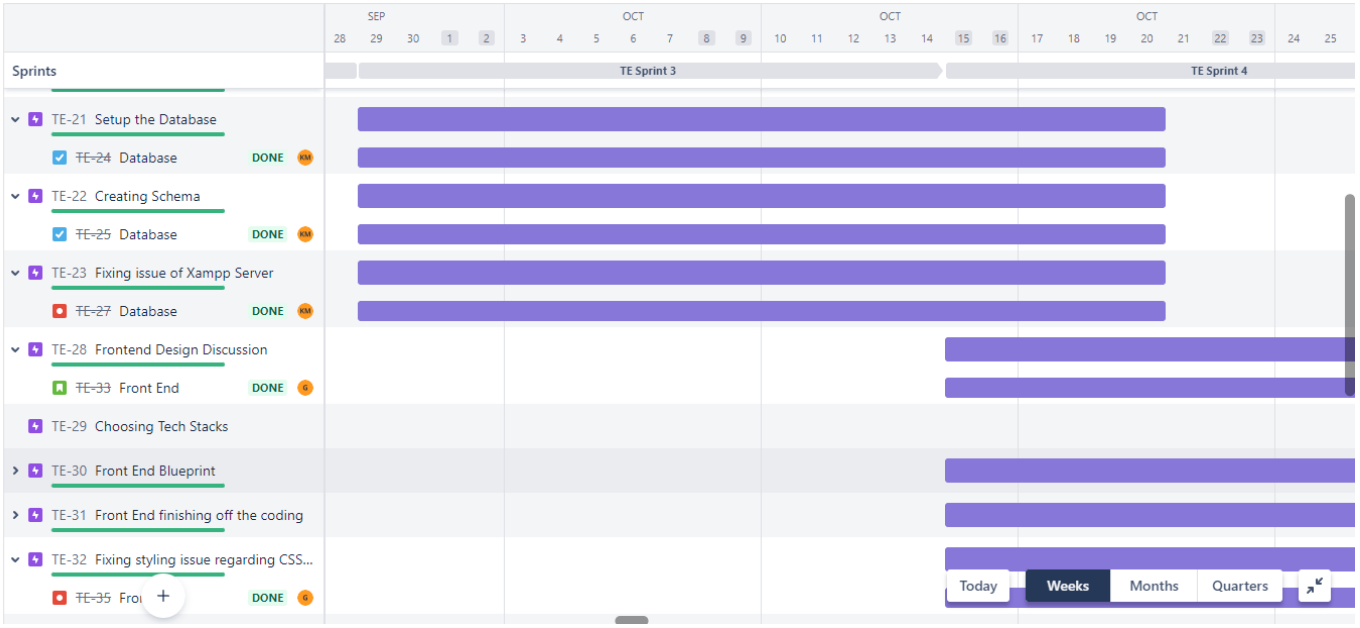
The interface showing the uncompleted tasks which are yet to be finished with the member assigned to respective task



Interface showing the bugs which were reported and got it rectified with the member associated with it


Projects / Team Elites
Roadmap
Give feedback
Share
Export
KM AM CB A +2
Status category
Epic
Type
T
NOV
DEC
Sprints
E Sprint 4
TE ...
TE...
TE Sprint 7
TE-55 Fixing issues related to mergi...
TE-60 Intergating
DONE
TE-56 Final discussion about entire proj...
TE-57 Framing the report content
TE-62 Report
TO DO
TE-58 Preparing the report
TE-63 Report
TO DO
Create Epic
Today
Weeks
Months
Quarters

The detailed weekly task breakdown structure of October month



The entire project roadmap including all the tasks


JUL – SEP
OCT – DEC
Sprints
TE-4 Project Design
DONE
TE-6 Project Planning
TE-7 Finalising the tech stacks to be used
TE-15 Discussion regarding SRS document
TE-18 Working on SRS Document
TE-19 Completing the SRS Document
TE-20 Creating Database
TE-21 Setup the Database
TE-22 Creating Schema
TE-23 Fixing issue of Xampp Server
TE-28 Frontend Design Discussion
TE-29 Choosing Tech Stacks
TE-30 Front End Blueprint
TE-31 Front End finishing off the coding
TE-32 Fixing styling issue regarding CSS box styling
TE-37 Discussing admin side desgin details
TE-38 Finalising admin side features
TE-39 Fixing issue related to authentication of admin
TE-40 Coding the admin part