Project Report

1.INTRODUCTION:

(1.1) Project Overview:

A "CRM Jewellery Project" aims to develop a dedicated Customer Relationship Management (CRM) system specifically designed for a jewelry business, enabling them to effectively manage customer interactions, track purchase history, personalize marketing campaigns, and ultimately improve customer loyalty and sales by providing a centralized platform to access and analyze customer data across all touchpoints within the jewelry buying journey.

- Capture detailed customer information including demographics, purchase history, preferred jewelry types, special occasions, and contact details
- . Store and update customer data in real-time to maintain accuracy.

(1.2) Purpose:

The purpose of CRM is to gather consumer information and use it to enhance their experience. By connecting all channels onto a single platform, CRM helps companies personalize their products and services, including personalized marketing messages. A CRM system helps businesses keep customer contact details up to date, track every customer interaction and manage customer accounts. It's also designed to help businesses improve customer relationships and Customer Lifetime Value (CLV)

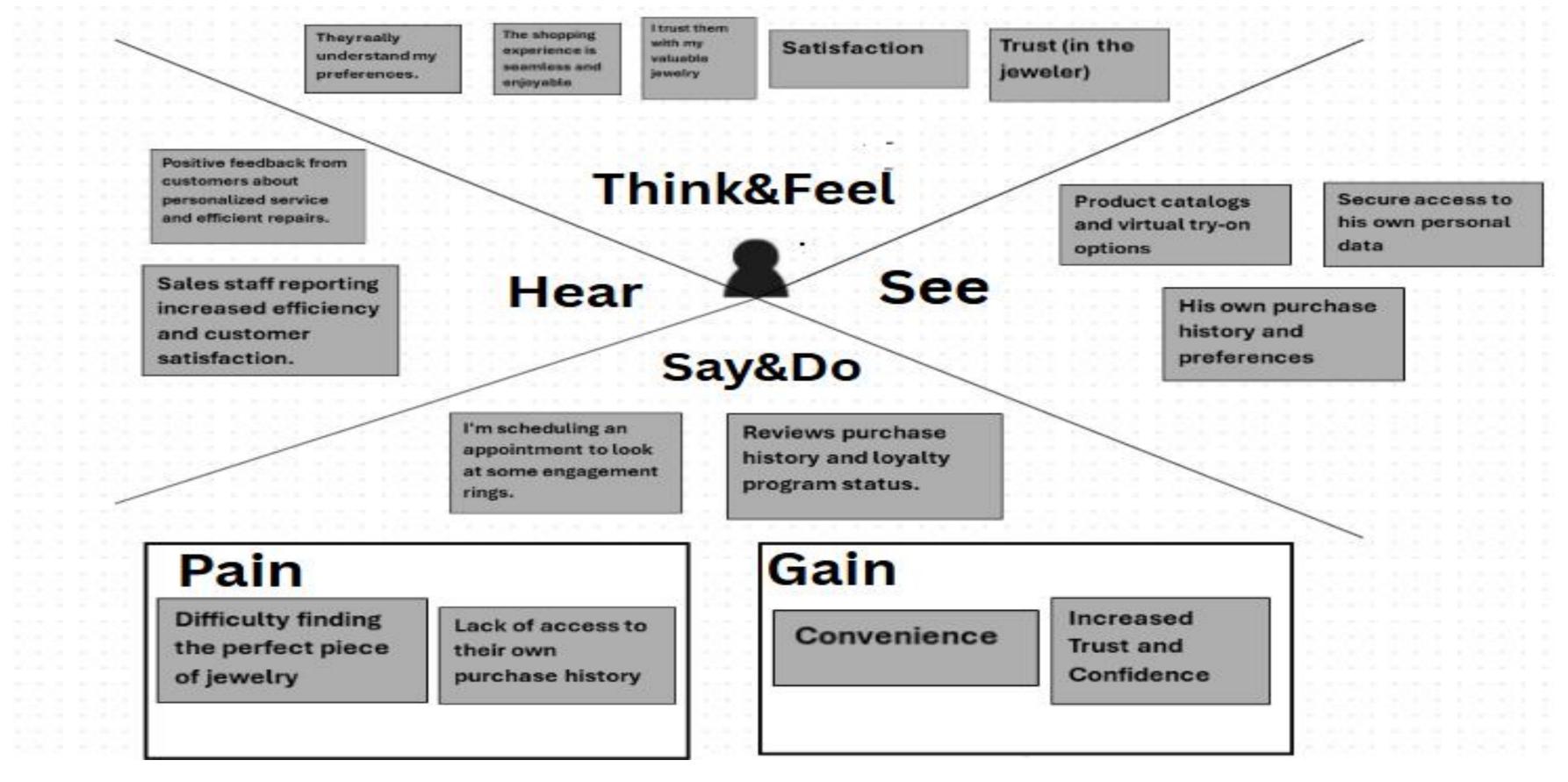
2. IDEATION PHASE

(2.1)Problem Statement:

Define the Problem Statements

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	I am a customer looking to purchase a special anniversary gift	I'm trying to find the perfect piece of jewelry that matches my partner's style and preferences	remember specific	Because the current shopping experience is often impersonal and lacks detailed records of my past interactions and preferences.	Which makes me feel frustrated and unsure about my purchase, leading to potential delays or even abandoning the purchase altogether.
PS-2	I am a customer who has sent a valuable ring in for repair.	I'm trying to stay informed about the progress of my repair and ensure its safe return	But I receive infrequent updates and lack transparency into the repair process	Because there is no centralized system to track repairs and provide real-time updates	Which makes me feel worried and anxious about the status of my valuable item

2.2 Empathy Map Canvas:



2.3 Brainstorming:



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.

(S) 10 minutes to prepare

I hour to collaborate

2-8 people recommended



Before you collaborate

A little bit of preparation goes a long way with this session. Here9s what you need to do to get going.

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

is Set the goal

Think about the problem you'll be focusing on solving in

- Learn how to use the facilitation tools Use the Facilitation Superpowers to run a happy and productive specion.
 - Open article



Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

© 5 minutes.

How might we [your problem statement [7]



Key rules of brainstorming□

To run an emooth and productive session

Stay in topic.



Defer judgment.









Brainstorm

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

(i) 10 minutes

TIP
You can relect a sticky write
and hit the pencil [owitch to
sketch] icon to start drawing!

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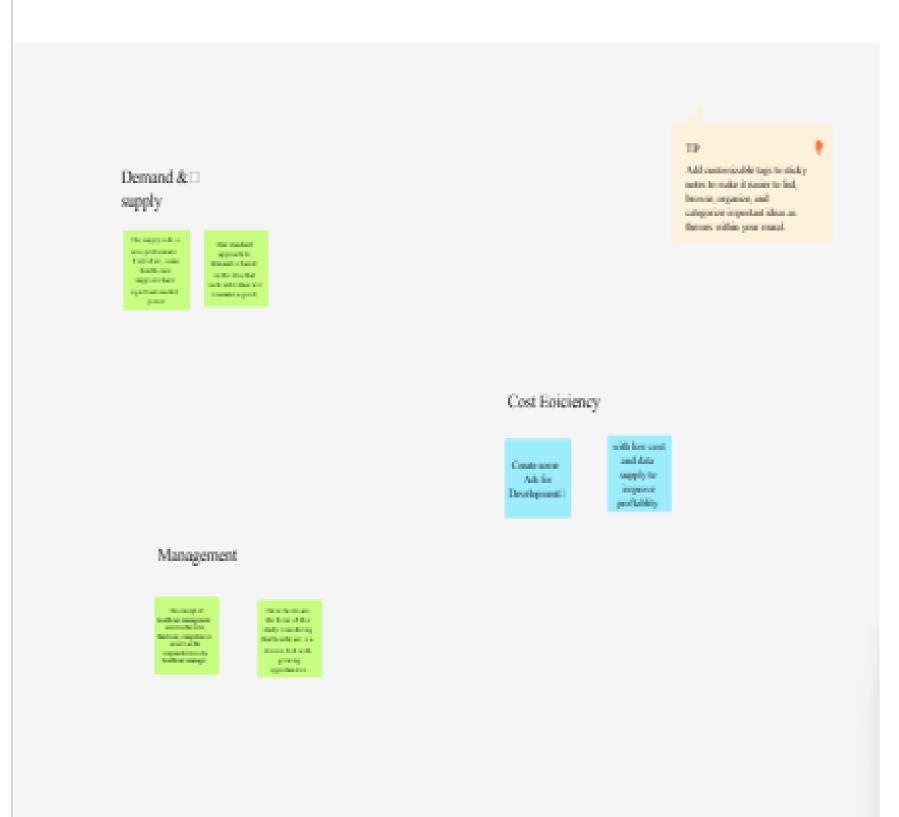
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Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, 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



3. REQUIREMENT ANALYSIS

3.1 Customer Journey map:



3.2 Solution Requirement:

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional	Sub Requirement (Story / Sub-Task)
	Requirement (Epic)	
FR-1	User Registration	Registration through Form
		Registration through Gmail
		Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email
		Confirmation via OTP
FR-3	User Profile	View User Profile
	Management	Edit User Profile
		Change Password
		Upload Profile Picture
FR-4	User Login	Login with Username/Password
		Login with Google
		Login with LinkedIn
FR-5	Password Recovery	Password Reset via Email
		Password Reset via OTP
FR-6	Search Functionality	Search by Keyword
		Filter Search Results
		Sort Search Results
FR-7	User Dashboard	Display User's Recent Activity
		Display Personalized Recommendations
		Display User's Notifications
FR-8	Notifications	Email Notifications
		In-App Notifications
		Push Notifications (if applicable)

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional	Description
	Requirement	
NFR-1	Usability	The system shall be intuitive and easy to learn for all user roles (administrators, regular users, and guest users).
		User interfaces shall be consistent and user-friendly,
		adhering to established design guidelines. Navigation
		shall be clear and efficient, requiring minimal steps to
		complete common tasks. Common actions should be
		readily available and discoverable. The system will
		provide clear error messages and help documentation.
		User onboarding and training documentation must be
		available. User should be able to complete main user
		flows within three clicks
NFR-2	Security	The system shall protect user data and prevent
		unauthorized access. User authentication shall use
		strong passwords and multi-factor authentication where
		possible. Data at rest and in transit shall be encrypted
		using industry-standard encryption protocols. Regular
		security audits and vulnerability assessments shall be
		conducted. The system should prevent common web
		attacks, such as SQL injection and cross-site scripting
		(XSS). Access Control based on the role and least
		privilage principle. Personal Identifying Information (PII) must be protected.
NFR-3	Reliability	The system shall operate reliably and consistently,
		minimizing downtime and errors. The system should
		recover gracefully from failures and prevent data loss.
		The system should have backup and restore capabilities.
		The system must meet all the functional requirements.
		The system must be able to properly display correct data
NFR-4	Performance	The system shall respond quickly and efficiently to user
		requests, providing a smooth and responsive user
		experience. Page load times shall be within acceptable
		limits (e.g., less than 3 seconds). The system shall be

		able to handle anticipated user loads and data volumes
		without performance degradation. Response times
		should be optimized for critical transactions. The system
		should be optimized for common device types, and
		network speeds
NFR-5	Availability	The system shall be available to users during specified
		hours of operation (e.g., 24/7). Downtime for
		maintenance shall be minimized and scheduled during
		off-peak hours, or handled in a rolling release. The
		system shall have redundancy and failover mechanisms
		in place to ensure high availability. Mean Time Between
		Failures (MTBF) should be high and Mean Time To
		Recovery (MTTR) should be low. The service should have
		a service level agreement (SLA) associated to it.
NFR-6	Scalability	The system shall be able to handle increasing user loads
		and data volumes without significant performance
		degradation. The system architecture shall be designed
		to allow for horizontal and vertical scaling as needed. The
		database and infrastructure should be scalable. The
		System should be able to support a large number of
		concurrent users, and transactions.

3.3 Data Flow Diagram:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored

THE CRM PROCESS



User Type	Functional Requirement (Epic)	User Story Number	User Story/Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application through Gmail	I can register the application from gmail	Medium	Sprint -1
		USN-2	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2

	Login	USN-3	As a user, I can log into the application by entering email & password	I can login in application by entering email & password	High	Sprint-3
		USN-4	As a user, I can manage my login credentials	I can login to credentials	Medium	Sprint -1
	Dashboard	USN-5	As a user, I can view pre-built dashboards that provide insights into key sales metrics.	I can view dashboards	Low	Sprint-2
		USN-6	As a user, I can filter dashboard components to focus on specific data subsets.	dashboard components	Medium	Sprint-1
Customer(We b User	Login	USN-7	As a user, I can log in to as a customer web user, I can register for events or webinars	I can login as a customer web user, I can register for events or webinars.	Medium	Sprint-1

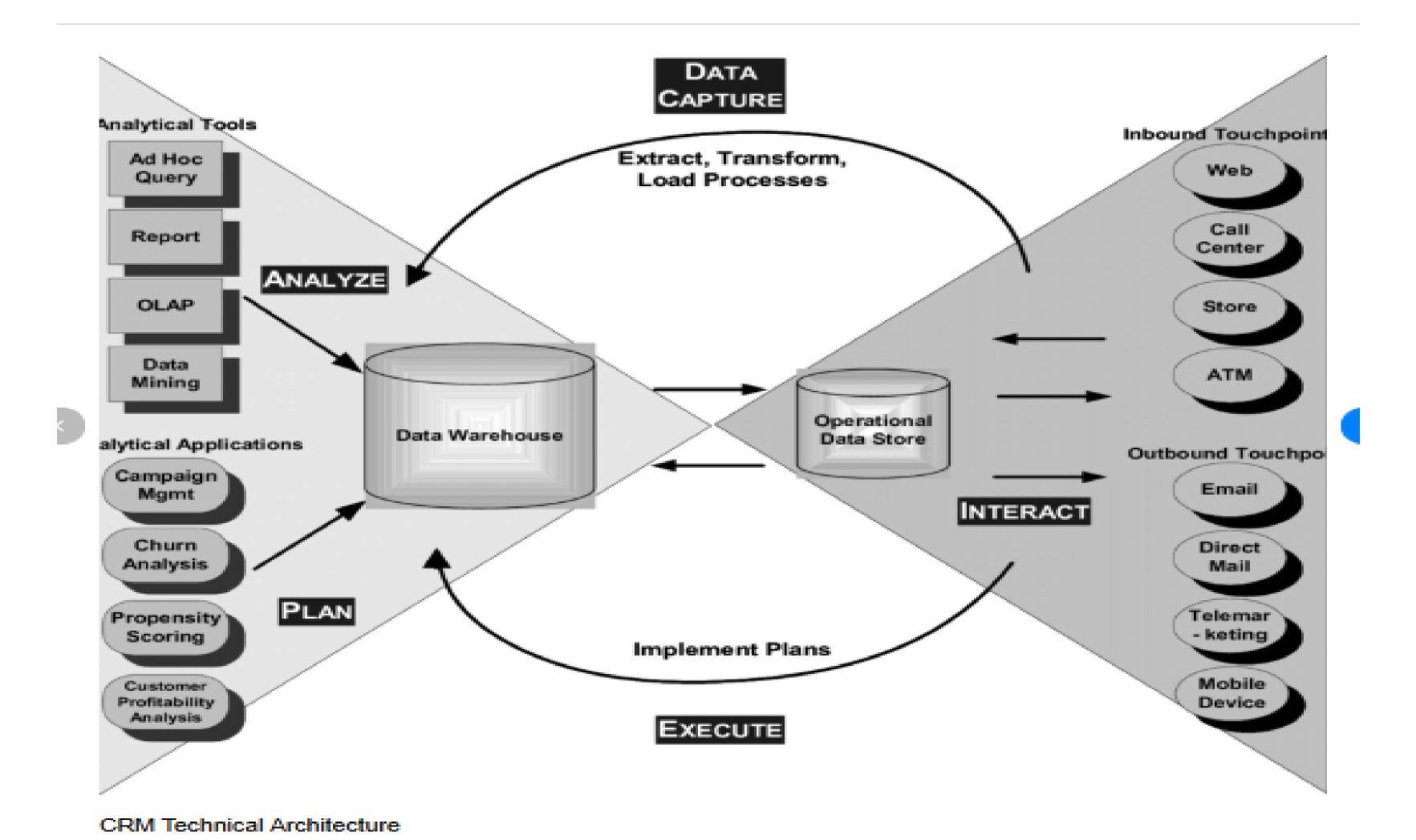
	Registration	USN-8	As a user, I can register for events or webinars	I can register for events or webinars	High	Sprint-3
Customer	Access	USN-9	As a user, I can	I can access	High	Sprint-3
Care			access	customer		
Executive			customer	records to view		

		records to view their history, interactions, and previous cases	their history, interactions, and previous cases		
Assign	USN-10	As a user, I can assign cases to other team members.	I can assign cases to other team members.	Medium	Sprint-1

3.4 Technology Stack:

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table 1 & table 2



Component	Description	Technology
User Interface	Web/Mobile interface for CRM access.	React.js, Angular, Vue.js, HTML5, CSS3, JavaScript, React Native, Flutter
Customer Management API	Manages customer data and interactions.	Python (Django/Flask), Node.js (Express), Java (Spring Boot), REST, GraphQL
Inventory Management API	Tracks and manages jewelry inventory	Java (Spring Boot), .NET Core, Python, PostgreSQL, MySQL, Barcode/RFID SDKs
Order Management API	Handles order processing and fulfillment.	Node.js (Express), Python (Django), Payment/Shipping APIs, WebSockets
Database (Core)	Stores primary CRM data.	PostgreSQL, MySQL, MariaDB, SQL Server
Database (Analytics)	Stores data for reporting and analysis	Amazon Redshift, Google BigQuery, Snowflake, Azure SQL Database
File Storage	Stores images and documents.	Amazon S3, Azure Blob Storage, Google Cloud Storage
Payment Gateway API	Processes online/in-store payments.	Stripe API, PayPal API, Square API
Shipping API	Integrates with shipping providers	FedEx API, UPS API, USPS API, DHL API
	User Interface Customer Management API Inventory Management API Order Management API Database (Core) Database (Analytics) File Storage Payment Gateway API	User Interface Web/Mobile interface for CRM access. Customer Management API Manages customer data and interactions. Inventory Management API Tracks and manages jewelry inventory Order Management API Handles order processing and fulfillment. Database (Core) Stores primary CRM data. Database (Analytics) Stores data for reporting and analysis File Storage Stores images and documents. Payment Gateway API Processes online/in-store payments.

10.	Machine Learning	Provides predictive analytics.	Python (Scikit-learn, TensorFlow), Cloud ML Platforms (SageMaker,
			Google AI, Azure ML)
11.	Infrastructure	Hosts the CRM application	AWS (EC2, Lambda), Azure (VMs, Functions), GCP (Compute
			Engine, Functions), Docker, Kubernetes, Nginx, Apache

S.N	Characteristics	Description	Technology
0			
1.	Granular Inventory Management	Beyond simple stock counts, it tracks individual pieces with detailed attributes (gemstone specifics, metal purity, etc.).	Cloud-Based Platforms
2.	Sophisticated Customer Profiling	Captures detailed purchase histories, preferences, and significant life events	Advanced Database Systems
3.	Integrated Sales and POS Functionality:	Handles complex sales transactions, including custom orders, layaways, and financing.	Mobile Integration
4.	Targeted Marketing and Communication	Allows for highly targeted marketing campaigns based on customer preferences and purchase history.	E-commerce Connectivity
5.	Enhanced Security and Compliance	Protects sensitive customer and financial data.	CRM and Marketing Automation Tools

4. PROJECT DESIGN:

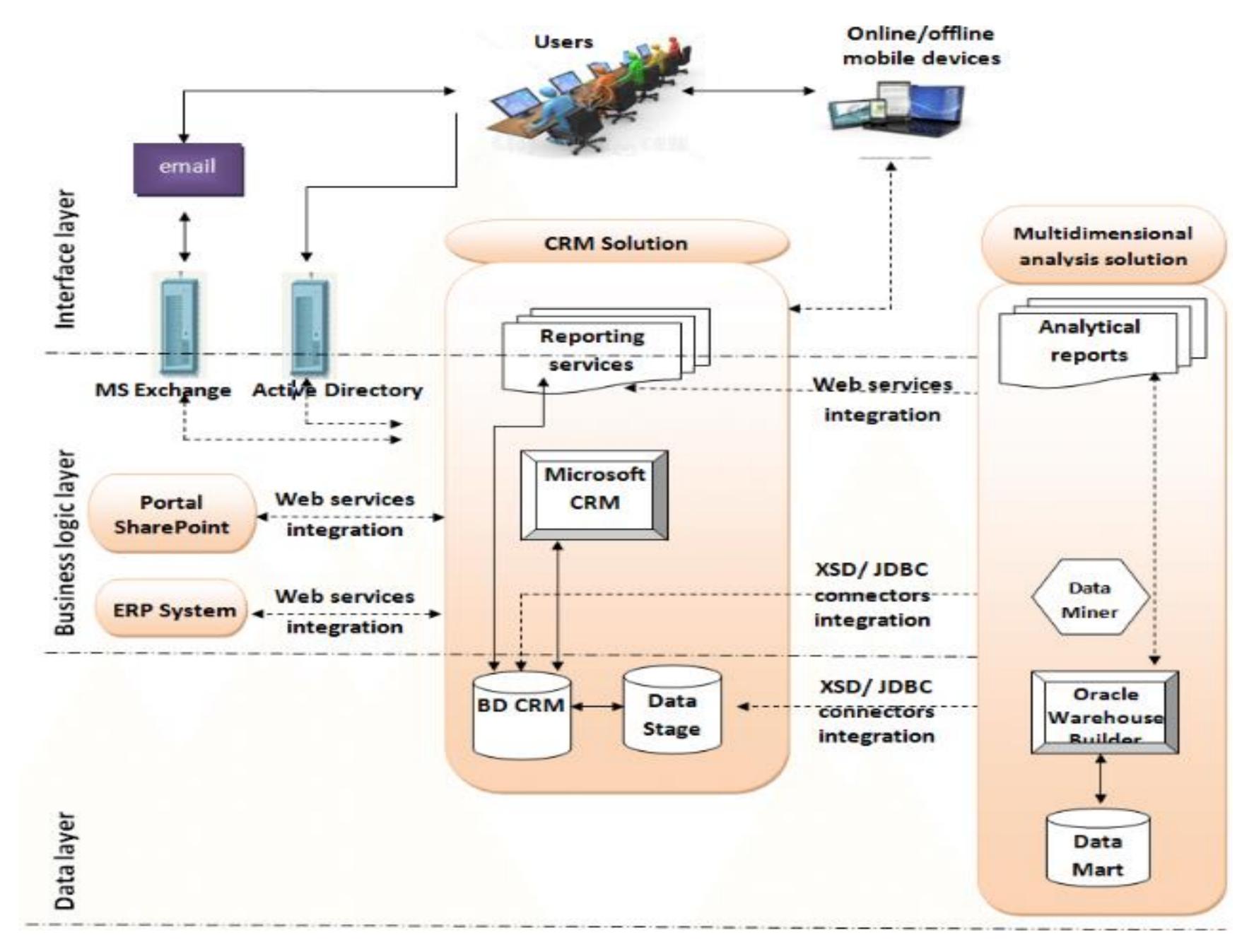
4.1 Problem Solution Fit:

4.2 Proposed Solution:

Phase Proposed Solution Template

S.No.	Parameter	Description
1.	Problem Statement	Fragmented customer data, inefficient inventory management, lack of personalized customer
	(Problem to be	experiences, difficulty tracking customer preferences, missed sales opportunities, and
	solved)	challenges in building long-term customer relationships within the jewelry retail industry.
2.	Idea / Solution	A comprehensive Customer Relationship Management (CRM) system tailored for the jewelry
	description	industry. It will centralize customer data, integrate inventory management, provide personalized
		communication tools, track customer preferences, automate marketing campaigns, and offer
		detailed analytics. The system will support both online and offline customer interactions,
		ensuring a 360-degree view of each customer.
3.	Novelty /	* Integrated Omnichannel Experience: Seamlessly merging online (website, social media) and
	Uniqueness	offline (in-store, events) data for a unified customer profile. * AI-Powered Personalization:
		Utilizing AI to analyze customer data and provide highly personalized product recommendations
		and marketing messages. * Visual Inventory Integration: Allowing for high quality images
		of inventory to be linked directly to customer profiles, showing customers items they may like.
		<pre> * Custom Design Management: Tools for managing custom jewelry design processes,</pre>
		including visual mockups, client approvals, and production tracking. * Gemstone and
		Metal Tracking: Detailed tracking of gemstone and metal inventory, including certifications and
		provenance.
4.	Social Impact /	* Enhances customer satisfaction by providing personalized and efficient service. * Builds
	Customer	stronger customer relationships, fostering loyalty and repeat business. * Improves
	Satisfaction	transparency and trust by providing detailed information about jewelry provenance and quality.
		CRM capabilities
5.	Business Model	* Enhances customer satisfaction by providing personalized and efficient service. * Builds
	(Revenue Model)	stronger customer relationships, fostering loyalty and repeat business. * Improves
		transparency and trust by providing detailed information about jewelry provenance and quality.
		CRM capabilities
6.	Scalability of the	* Cloud-based architecture allows for easy scaling of resources to accommodate growing user
	Solution	bases and data volumes. * Modular design enables the addition of new features and
		functionalities as needed. * API integrations facilitate seamless connectivity with other
		business systems. * The system can be deployed globally, supporting multiple languages
		and currencies.

4.3 Solution Architecture:



5. PROJECT PLANNING & SCHEDULING:

5.1 Project Planning:

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Sprint	Functional Requirement (Epic)	User Story Number	User Story/Task	Story points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application through Gmail	2	Medium	Chippagiri Mahaboob bee Gunda Gowripriya
Sprint-2		USN-2	As a user, I can register for the application through Facebook	1	Low	Dabbara Samatha Pavan kumar
Sprint-3	Login	USN-3	As a user, I can log into the application by entering email & password	2	High	Nandkishore
Sprint-1		USN-4	As a user, I can manage my login credentials	2	Medium	Dabbara Samatha
Sprint-2	Dashboard	USN-5	As a user, I can view pre-built dashboards that provide insights into key sales metrics.	1	Low	Pavan Kumar
Sprint-1		USN-6	As a user, I can filter dashboard components to focus on specific data subsets.	2	Medium	Gunda Gowripriya
Sprint-1	Login	USN-7	As a user, I can log in to as a customer web user, I can register for events or webinars	2	Medium	Chippagiri Mahaboob bee

Sprint-3	Registration	USN-8	As a user, I can register for events or webinars	1	High	Nandkishore
Sprint-3	Access	USN-9	As a user, I can access customer records to view history, interactions, and previous cases their	2	High	Pavan Kumar
Sprint-1	Assign	USN-10	As a user, I can assign cases to other team members.	1	Medium	Chippagiri Mahaboob bee

Project Tracker, Velocity & Burndown Chart:

Sprint	Total	Duration	Sprint Start	Sprint End Date	Story Points	Sprint Release
	Story Points		Date	(Planned)	Completed (as on Planned End Date)	Date (Actual)
Sprint-1	16	30days	10-02-2025	19-02-2025	16	14-02-2025
Sprint-2	16	30 days	20-02-2025	29-02-2025	16	25-02-2025
Sprint-3	16	30days	30-02-2025	09-03-2025	16	05-03-2025

AV= Sprint Duration

6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing:

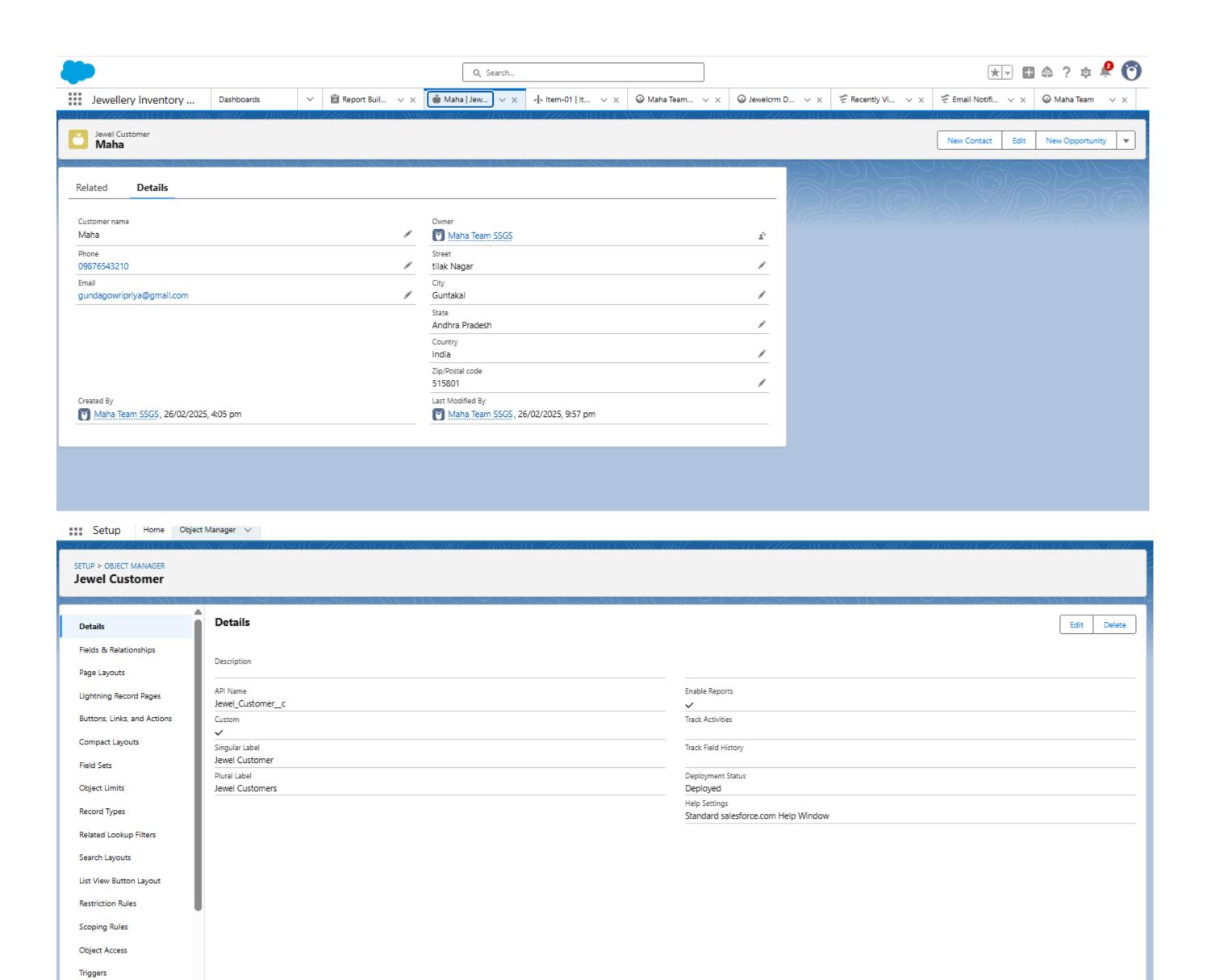
Model Performance Test

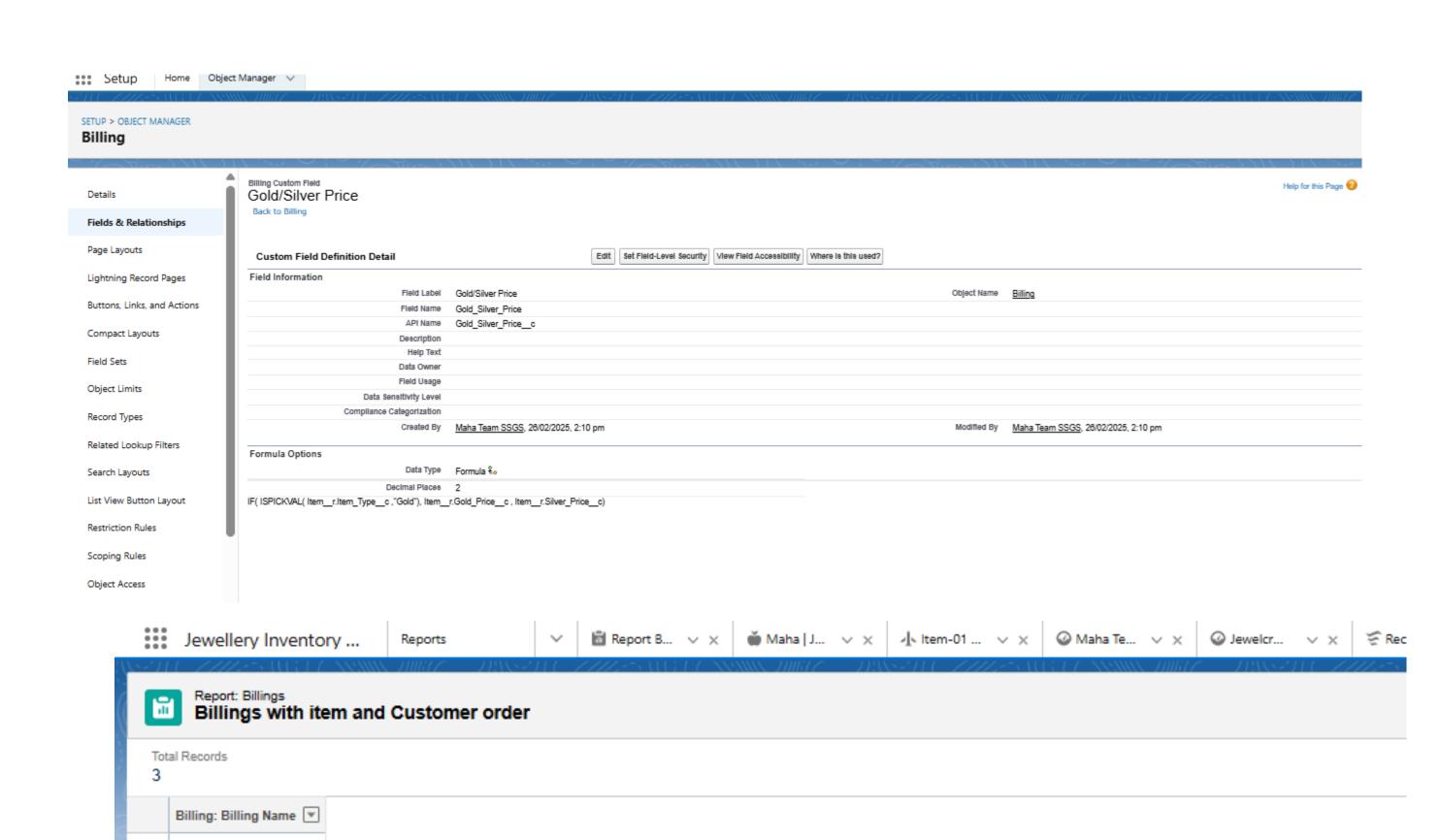
Test Scenarios & Results

Test					
Case		Test Steps (How to			
ID	Scenario (What to test)	test)	Expected Result	Actual Result	Pass/Fail
FT- 01	Text Input Validation (e.g., topic, job title)	Enter valid and invalid text in input fields	•	Got a Valid inputs accepted, and errors for invalid inputs	Pass
FT- 02	Number Input Validation (e.g., word count, size, rooms)	and outside the valid		It accepts valid values and shows error for out-of-range	Pass
FT- 03	Content Generation (e.g., blog, resume, design idea)	inputs and click	Correct content is generated based on input	We got a Correct content is generated based on input	Pass
FT- 04	API Connection Check		API responds successfully	It Responed successfully	Pass
PT- 01	Response Time Test	Use a timer to check content generation time		We got a error like it Should be under 3 seconds	Fail
PT- 02	API Speed Test	Send multiple API calls at the same time		We got API should not slow down	Fail
PT- 03	File Upload Load Test (e.g., PDFs)	Upload multiple PDFs and check processing	smoothly without	It Should work smoothly without crashing	Fail

7. RESULTS:

7.1 Output Screenshots:





1 Billing-01

2 Billing-02

3 Billing-05

8. ADVANTAGES & DISADVANTAGES:

Advantages:

Enhanced Customer Relationship Management:

- o Jewelry is often a high-value, personal purchase. A CRM allows for detailed customer profiles, tracking preferences, purchase history, and special occasions. This enables highly personalized service, fostering loyalty.
- o It helps in remembering customer preferences, ring sizes, gemstone preferences etc.

Improved Inventory Management:

- o Jewelry businesses deal with valuable, unique items. A CRM can provide real-time inventory tracking, reducing the risk of loss or theft.
- o It helps with tracking items on consignment, or items out for repair.
- o It can also help with tracking the materials used in each piece of jewelry.

• Increased Sales and Marketing Effectiveness:

- o CRMs enable targeted marketing campaigns based on customer demographics and purchase history.
- o It aids in sales forecasting and identifying trends, allowing businesses to optimize their offerings.
- o It can help in managing clienteling, and keeping track of customer interactions.

• Streamlined Operations:

- o Automation of tasks, such as appointment scheduling and follow-up emails, saves time and improves efficiency.
- o Centralized data access improves communication and collaboration among staff.
- It can integrate with point of sale systems, simplifying transactions.

• Data-Driven Insights:

 CRMs provide valuable data on customer behavior, sales performance, and marketing effectiveness, enabling informed decision-making.

Disadvantages:

• Implementation Costs:

- CRM software can be expensive, especially for small businesses.
- Costs include software licenses, hardware, and implementation fees.

• Training and Adoption:

- Employees may require training to use the CRM effectively.
- o Resistance to change can hinder adoption.

• Data Security and Privacy:

- o CRMs store sensitive customer data, which must be protected from breaches.
- Compliance with data privacy regulations is essential.

• Integration Challenges:

Integrating a CRM with existing systems can be complex and time-consuming.

• Potential for Over-Reliance:

- Over-reliance on technology can diminish the personal touch that is crucial in the jewelry industry.
- o Bad data input can cause many problems.

• CONCLUSION:

CRM is a software system that helps businesses manage their interactions with customers, clients, and prospects. It provides a centralized platform for managing customer data, communication, and interactions across various touchpoints. CRM enables jewelry businesses to gain a deeper understanding of their customers. By gathering and analyzing customer data, businesses can identify buying patterns, preferences, and behaviors. This insight allows businesses to tailor their marketing and sales efforts to meet the specific needs and wants of their customers.

CRM refers to Customer Relationship Managment It is a technology for managing all your company's relationships and interactions with customers and potential customers. The goal is simple to improve Business relationships. A CRM system helps companies stay connected to customers, streamline processes & improve Profitability. Jewelry businesses face a multitude of challenges, from fierce competition to changing consumer preferences and limited budgets for marketing and advertising. It can be a tough market to navigate, but the good news is that implementing a customer relationship management (CRM) system can help overcome many of these challenges.

One of the biggest challenges facing jewelry businesses is the need to stay relevant and top of mind with customers. With so many options available, consumers are easily distracted and can quickly forget about your brand. A CRM system can help you stay top of mind by enabling you to communicate with customers on a regular basis and provide personalized recommendations based on their preferences. Another challenge is managing inventory and ensuring that you have the right products available at the right time. A CRM system can help you keep track of inventory levels and alert you when products are running low or need to be restocked. This can help you avoid lost sales due to out-of stock items and ensure that you always have a variety of products available to meet customer demand.

Finally, jewelry businesses face the challenge of attracting new customers and retaining existing ones. A CRM system can help you identify customer segments and target them with personalized marketing messages that resonate with their specific interests and preferences.

10. FUTURE SCOPE:

The future of Jewel CRM, like all CRM systems, is closely tied to technological advancements and evolving consumer behaviors. Here's a look at the key trends shaping its future scope:

1. Enhanced Personalization and AI:

• Al-driven customer insights:

- OAI will enable deeper analysis of customer data, predicting preferences, and providing highly personalized recommendations.
- This could include AI-powered virtual try-on experiences, where customers can see how jewelry looks on them before purchasing.

• Personalized marketing automation:

- OAI will automate personalized marketing campaigns based on individual customer behavior and preferences.
- o This means more targeted emails, social media ads, and promotions.

2. Omnichannel Integration:

• Seamless online and offline experiences:

- o Jewel CRM will need to integrate seamlessly with e-commerce platforms, social media, and physical stores.
- Customers expect a consistent experience regardless of how they interact with a jewelry brand.

Mobile-first approach:

o CRM systems will be optimized for mobile devices, allowing sales staff to access customer information and manage transactions on the go.

3. Data Analytics and Reporting:

Predictive analytics:

- CRMs will use predictive analytics to forecast sales trends, identify potential risks, and optimize inventory management.
- This will help jewelry businesses make more informed decisions.

• Real-time dashboards:

o Interactive dashboards will provide real-time insights into key performance indicators, such as sales, customer engagement, and inventory levels.

4. Cloud-Based Solutions:

Increased accessibility and scalability:

- o Cloud-based CRMs will offer greater accessibility, allowing businesses to access their data from anywhere.
- o They will also provide scalability, allowing businesses to easily adapt to changing needs.

• Improved collaboration:

Ocloud-based solutions will facilitate collaboration among staff members, regardless of their location.

5. Focus on Sustainability and Ethical Sourcing:

• Tracking ethical sourcing:

- o CRMs will play a role in tracking the ethical sourcing of gemstones and precious metals.
- o This will help jewelry businesses meet the growing demand for sustainable and responsible products.

• Providing transparency:

o CRM systems will be used to provide customers with detailed information about the origin and ethical sourcing of their jewelry.

11. APPENDIX

GitHub & Project Demo Link:

https://github.com/mahaboobe2004/Mahaboob-Bee-Team-Documentation/commits/main/

https://drive.google.com/drive/folders/11EM3ldpp92fcN3FqeOB9ynzztg3Jwdla