

Vidya Pratishthan's Arts, Science & Commerce College

Vidyanagari Baramati

Department of Computer Science

CERTIFICATE

This is to certify th	at Mr. <u>Akhil Santo</u>	osh Bhosale & Pranav	Bhimrao Mahadik
has completed the projec	t report entitled	<u>ERP System</u>	as a fulfillmen
of Industrial Training	Project for Masters	in Computer Science at	the Semester-IV of th
academic year 2021-22.			
Seat Number:2 & Z	<u> 11</u>		
Date:			
Project Guide	PG Coordinato (Computer Scie		D
[Internal examiner]	[External exami	ner] [Industria	ıl Expert]

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to "Prof. Mr. Shinde. B (HOD of M.Sc.(Comp.Sci.)" "Mr. Abhijeet Karne (Founder, Director & Manager)" and "Miss.Wable.J (Internal Guide)" for their able guidance and support in completing my Project.

I also thank my project mentors who showed their concerns for my work, encouraged me to keep my best foot forward, and gave valuable suggestions that not only helped me in my project work but will be useful in the future too.

I would like to thank **Prix Corporation PVT. LTD.** for providing me with an opportunity to pursue my industrial training, as it is an important part of the **M.Sc.** (**Computer Science**) course and it is the one that exposes you to the industry standards and makes you adapt yourself to the latest trends and technologies. At the same time, it gives an experience of working on a live project. I feel proud and privileged in expressing my deep sense of gratitude to all those who have helped me in presenting this assignment. I would be failing in my endeavor if Id not place my acknowledgment.

Sincere thanks to all my seniors and colleagues at the company for their support and assistance throughout the project.

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Abstract

Enterprise Resource Planning (ERP) system consists of different sets of software that are used to integrate the business functions in a company or organization. Given that these solutions provide an integrated solution to the needs of an organization, these systems are in high demand by all organizations.

Enterprise Resource Planning (ERP) is an integrated software solution offered by a vendor to support the seamless integration of information flows through an organization. It is provided as a package comprising different modules, such as finance, accounting, human resources, supply chain, and customer information. ERP system implementation is described as lengthy and complex resulting in many cases of unsuccessful implementation which has negatively impacted the performance of an organization's business and up to 70% of implementations did not achieve all the desired benefits.

INTRODUCTION

1.1 Company Profile:

- ☐ We are the first Government Recognized Start-Up Company in Baramati.
- ☐ Prix Corporation PVT. LTD.
- ☐ Company Established in 2012.

Our Mission

We shall imbibe the spirit of entrepreneurship within each individual throughout the organization. We shall strive to achieve Quality Services by comprehending their need through close interaction and by creating a global network.

☐ Our Vision

To become an integral part of our client's business by building strong trust-based relationships and work towards exceeding their expectations every time & to be the Best Service Provider to provide top-quality services in the fields of Application Development, Web Development, SEO Services, Branding, Online Marketing everything under one-roof.

1.2 Introduction to Project:

Business Process Automation is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing websites providing functionality for performing commercial transactions over the web. It is reasonable to say that the process of Projects on the web is becoming commonplace.

This Business Process Intranet web Application so designed to manage work properly. The main feature is to help the company, manager of the company, and Client of the company to maintain the information and task in the company.

In this Business Intranet web application, Iam conducting a module

2. System Requirement Analysis

2.1 Need and Motivation:

Need

Planning is essential to save time and effort. For every project development cycle, project planning plays a vital role. The project management software can enable managers to assign tasks to different team members as pertheir skills and execute the project in a proper way.

Project planning needs a lot of time as the team hasto outline all the major steps. The task management tool enables the management to determine the order of tasks

Motivation

- To introduce new products and services.
- To take advantage of a brand name.
- To enter the global marketplace.
- To react to pressure from competitors.
- To increase sales.

2.2System Requirement Analysis:

1. Functional requirement:

A functional requirement is all about the functions and core operations of your Projects that an Admin to take action on the website. They can be implemented as a single website feature and form the basis of the whole software development process.

2. Performance requirement:

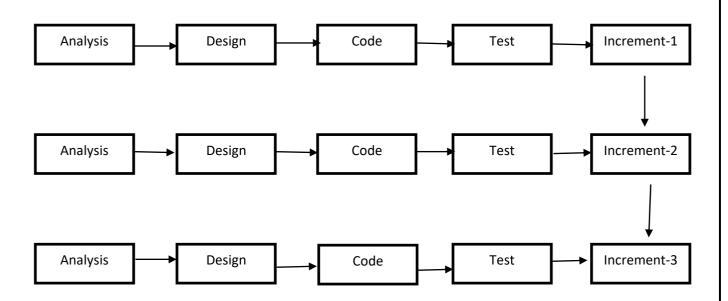
- Website traffic is probably one of the most obvious key performance indicators that an e-commerce site owner will want to watch.
- Conversion rate is an extremely important KPI for all e-commerce stores.
- Time to Purchase. The next KPI important for e-commerce websites to track is time to purchase.

3. Security requirement:

Security is an important issue in the actual private Company context where Confidential data leak chances. There are many important Projects that must be taken into account: authentication, access control, data integrity, content protection, etc. Information security canbe obtained using methods such as

2.3Software process and development model

The incremental Build Model is a Method of software development Where the Model is designed, implemented and tested incrementally (a little more is added each time) until the product is finished. It involves both development and maintenance. The product is defined as finished when it satisfies all of its requirements. Each iteration passes through the requirements, design, coding and testing phases. And each subsequent release of the system adds function to the previous release until all designed functionally has been implemented. This modelcombines the elements of the waterfall model with the iterative philosophy of prototyping.



2.4 Software and Hardware Specifications:

Software Requirements:

Operating System	Windows
Front-End	Angular, Bootstrap, HTML, CSS
Backend	.Net 6
Database	SQL Server

Hardware Requirements:

Operating System	Windows 7 and above
RAM	4GB and above

3. Problem Statement

Business Process Automation is an operations management field focused on improving the performance of organization's business processes by managing and optimizing them. It enables organizations to be more efficient, more effective and more capable of change than the traditional hierarchical management approach, therefore impacting organization's costs and revenues. This field considers business processes as relevant assets of an organization that must be understood, managed, and developed in order to support the creation of products and services of added value to the organization's clients. The BPA groups its activities into six main categories: design, modeling, execution, monitoring, optimization and reengineering.

3. Feasibility study

Before recommending a new system, it is investigated that whether it is possible to develop the requested system. The important outcome of the preliminary investigation is the determination that the system requested is feasible for the user/organization or not. There are three aspects of the feasibility study. These three aspects can be listed as follow:

3.1 Technical Feasibility

In this type of feasibility study, System developer must check whether it is possible to develop the requested system with the available requirements. Besides we must check the availability of the other resources like the manpower, software, hardware, etc.

We have used all already existing end easily available technical resources for the development of "Project Management system" such as Angular web Framework

3.2 Economic Feasibility

To prepare a system most important aspect is whether we can afford it or not? In this type of feasibility study, cost benefit analysis is done. It is checked to see if there are sufficient benefits from the system to make the cost involved acceptable.

We have used all the open source resources such as Angular web Framework (Javascript) and freely available Third- party API's so cost incurred is negligible.

3.3 Time Feasibility

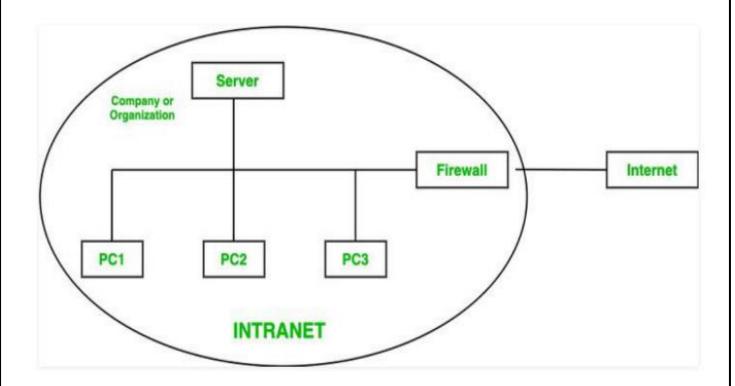
A time feasibility study will take into account the period in which the project is going to take up to its completion. A project will fail if it takes too long to be completed before it is useful. Typically this means estimating how long the system will take to develop, and if it can be completed in a given time period using some methods like payback period. Time feasibility is a measure of how reasonable the project timetable is. Given our technical expertise, are the project deadlines reasonable? Some projects are initiated with specific deadlines. It is necessary to determine whether the deadlines are mandatory or desirable

3.4 Operational Feasibility

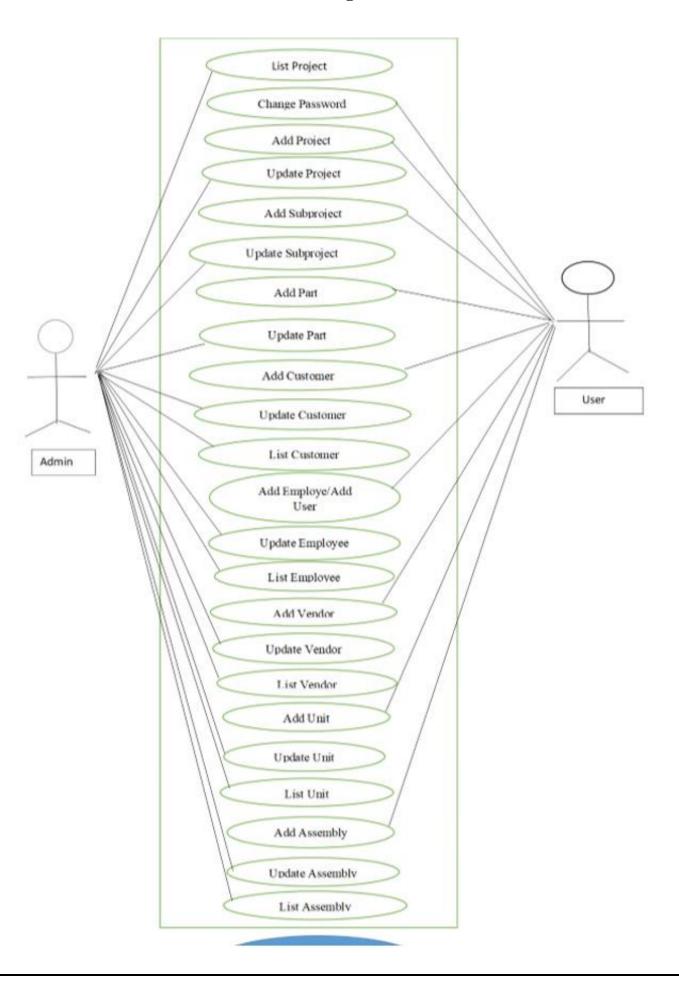
In this type of feasibility study, we consider the operational implementation of the system. It is checked whether it is feasible for the user to operate the software or will the user resist? Thus, the computerized proposed system is said to be operationally feasible if the users of the system Can understand the system correctly, that is the user should have the capacity of analyzing the system.

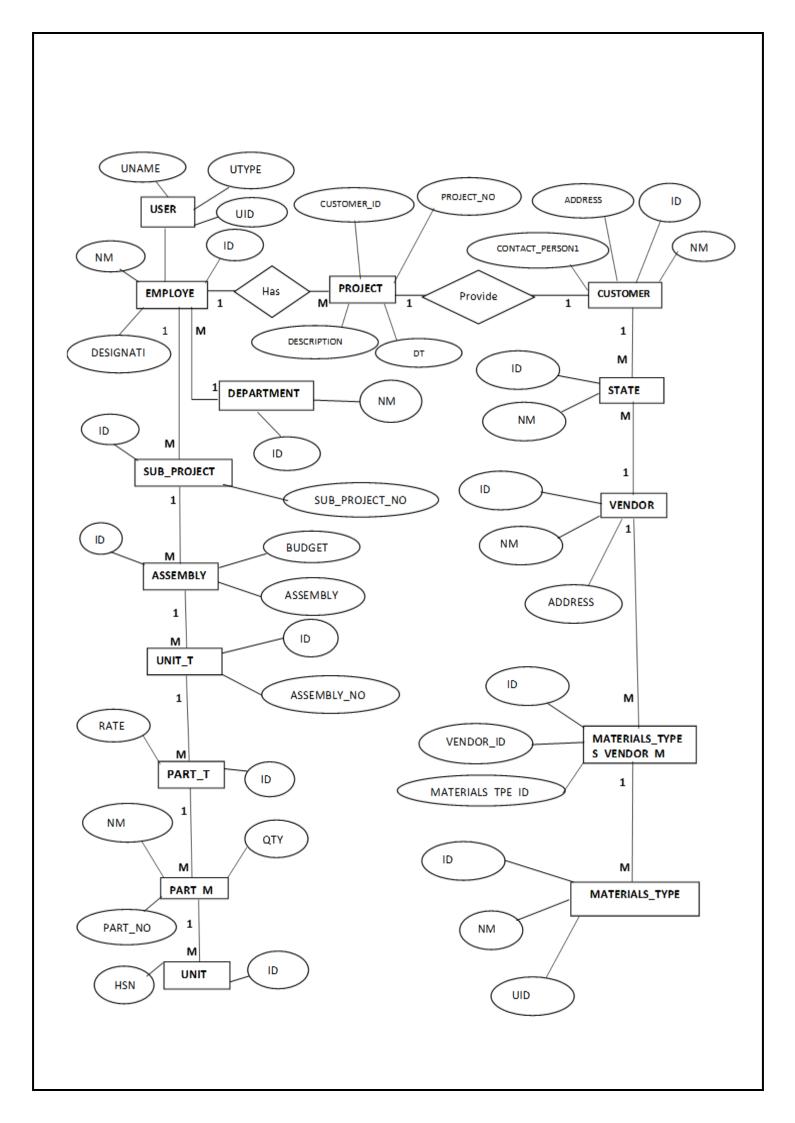
4. System Design:-

4.1 Project Architecture:-

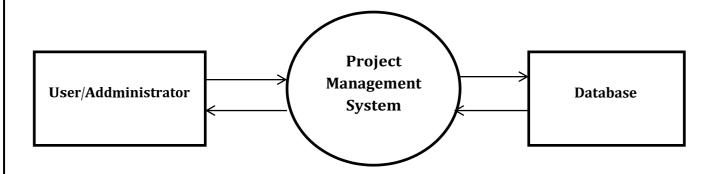


4.2 Use Case Diagram



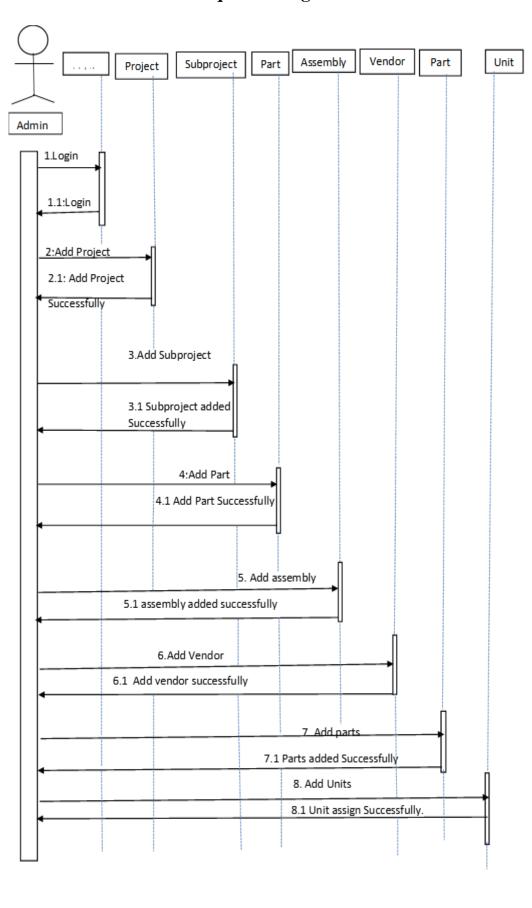


4.4 Data Flow Diagram

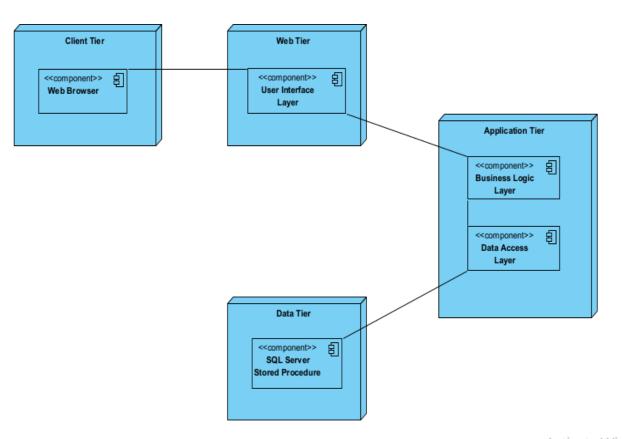


4.5Activity Diagram invalid LOGIN valid SHOW DASHBORD Marketing Designing Master Registration View Search Update Admin Change Password

4.6 Sequence Diagram

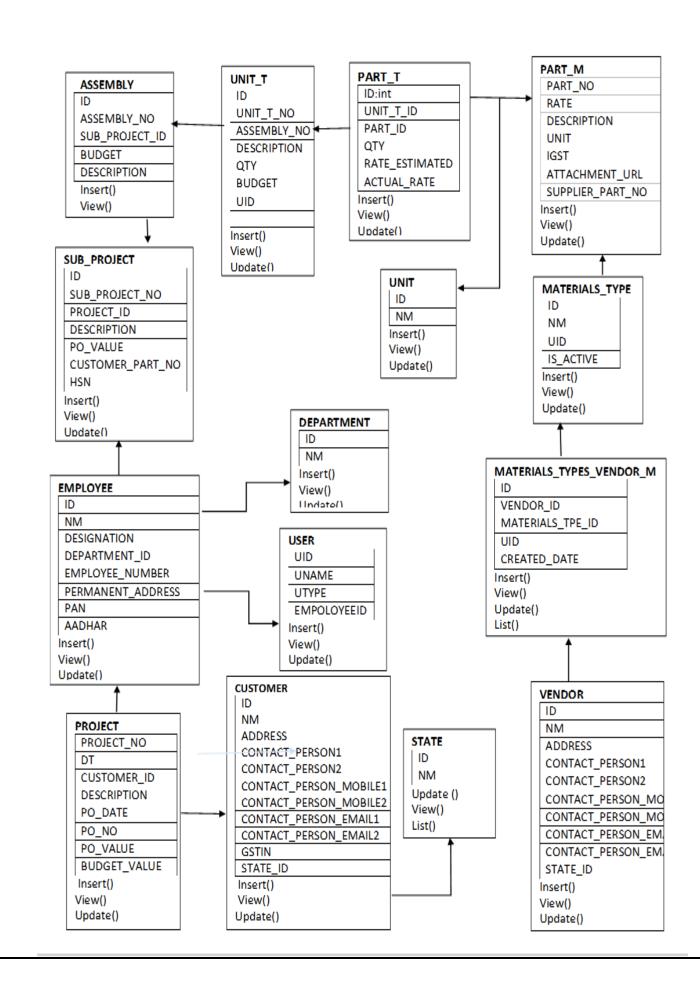


4.7Deployment Diagram



Activate Window

4.8 Class Diagram



4.9 Database Design

1. Table Name: Project

DES	DESKTOP-M782KJ0.AnDb - dbo.Project × DESKTOP-M782KJ0.AinDb - dbo			
	Column Name	Data Type	Allow Nulls	
₽₽	ID	bigint		
	PROJECT_NO	varchar(50)		
	DT	date		
	DESCRIPTION	varchar(200)		
	PO_DATE	date		
	PO_NO	varchar(50)		
	PO_VALUE	decimal(18, 2)		
	BUDGET_VALUE	decimal(18, 2)		
	EXPECTED_DT	date		
	ACTUAL_DT	date		
	UID	bigint		
	CREATED_DT	datetime		
	MODIFIED_DT	datetime		
	CustomerID	bigint		
	EmployeeID	bigint		
	LOCATION	varchar(200)		
	PAYMENT_TERMS	varchar(400)		

2.Table Name: Subproject

DES	DESKTOP-M782KJ0inDb - dbo.Part_M × DESKTOP-M782KJ0o.OPE			
	Column Name	Data Type	Allow Nulls	
₽Ÿ	ID	bigint		
	PART_NO	varchar(50)		
	RATE	decimal(18, 2)		
	DESCRIPTION	varchar(50)		
	SPECIFICATION	varchar(50)		
	TYPES	varchar(50)		
	SUPPLIER_PART_NO	varchar(50)		
	UNIT_ID	bigint		
	HSN	varchar(50)		
	IGST	decimal(18, 2)		
	ATTACHMENT_URL	text		
	UID	bigint		
	CREATED_DT	datetime		
	MODIFIED_DT	datetime		

3. Table Name: Part

DES	SKTOP-M782KJ0inDb - dbo.	Part_M × DESKTOP-N	//782KJ0o.OPE
	Column Name	Data Type	Allow Nulls
₽®	ID	bigint	
	PART_NO	varchar(50)	
	RATE	decimal(18, 2)	
	DESCRIPTION	varchar(50)	
	SPECIFICATION	varchar(50)	
	TYPES	varchar(50)	
	SUPPLIER_PART_NO	varchar(50)	
	UNIT_ID	bigint	
	HSN	varchar(50)	
	IGST	decimal(18, 2)	
	ATTACHMENT_URL	text	
	UID	bigint	
	CREATED_DT	datetime	
	MODIFIED_DT	datetime	

4. Table Name: Part Transaction

DE:	DESKTOP-M782KJ0.AinDb - dbo.Part_T × DESKTOP-M782KJ0inDb -				
	Column Name	Data Type	Allow Nulls		
₽Ÿ	TRANS_NO	bigint			
	UNIT_T_ID	bigint			
	PART_ID	bigint			
	QTY	decimal(18, 2)			
	RATE_ESTIMATED	decimal(18, 2)			
	ACTUAL_RATE	decimal(18, 2)			
	UID	bigint			
	CREATED_DT	datetime			
	MODIFIED_DT	datetime			

5. Table Name: Unit

DESKTOP-M782KJ0.AinDb - dbo.Unit_T × DESKTOP-M782KJ0.Admin			
	Column Name	Data Type	Allow Nulls
₽Ÿ	ID	bigint	
	UNIT_NO	varchar(50)	
	ASSEMBLY_ID	bigint	
	DESCRIPTION	varchar(200)	
	QTY	decimal(18, 2)	
	BUDGET	decimal(18, 2)	
	UID	bigint	
	CREATED_DT	datetime	
	MODIFIED_DT	datetime	
	IS_NEWLY_CREATED	bit	
	REF_ASSEMBLY_NO	varchar(50)	

6. Table Name: Assembly

DESKTOP-M782KJ0Db - dbo.Assembly ×			
	Column Name	Data Type	Allow Nulls
:	ID	bigint	
	ASSEMBLY_NO	varchar(50)	
	SUB_PROJECT_ID	bigint	
	BUDGET	decimal(18, 2)	
	DESCRIPTION	varchar(200)	
	UID	bigint	
	CREATED_DT	datetime	
	MODIFIED_DT	datetime	
	TYPE	varchar(50)	
	IS_NEWLY_CREATED	bit	
	REF_SUB_PROJECT_NO	varchar(50)	

7. Table Name: Vendor

DES	SKTOP-M782KJ0inDb - dbo	Vendor × DESKTOP-N	л782KJ0minDb - dbo.us
	Column Name	Data Type	Allow Nulls
₽₽	ID	bigint	
	NM	varchar(50)	
	ADDRESS	varchar(400)	
	CONTACT_PERSON1	varchar(50)	
	CONTACT_PERSON_MO	varchar(50)	
	CONTACT_PERSON_EM	varchar(50)	
	CONTACT_PERSON2	varchar(50)	
	CONTACT_PERSON_MO	varchar(50)	
	CONTACT_PERSON_EM	varchar(50)	
	GSTIN	varchar(50)	
	CURRENCY	varchar(50)	
	CREDIT_PERIOD	bigint	
	STATE_ID	bigint	
	UID	bigint	
	CREATED_DT	datetime	
	MODIFIED_DT	datetime	

8. Table Name: User

DES	DESKTOP-M782KJ0minDb - dbo.users × DESKTOP-M782KJ0.AinDb - dbo.Unit_T				
	Column Name	Data Type	Allow Nulls		
₽Ÿ	Uld	bigint			
	Uname	nvarchar(MAX)			
	Upassword	nvarchar(MAX)			
	UType	nvarchar(MAX)			
	EmployeelD	bigint			

9. Table Name: Opening Stock

DES	DESKTOP-M782KJ0o.OPENING_STOCK × DESKTOP-M782KJ0bo.MA				
	Column Name	Data Type	Allow Nulls		
₽Ÿ	TRANS_NO	bigint			
	DT	date			
	PARTID	bigint			
	QTY	decimal(18, 2)			
	PRATE	decimal(18, 2)			
	DEL	bit			
	CREATED_DT	datetime			
	MODIFIED_DT	datetime			

10. Table Name: Employee

	Column Name	Data Type	Allow Nulls
₽	ID	bigint	
	NM	varchar(50)	
	DESIGNATION	varchar(50)	
	EMPLOYEE_NUMBER	varchar(50)	
	PERMANENT_ADDRESS	varchar(200)	
	TEMPORARY_ADDRESS	varchar(200)	
	PAN	varchar(50)	
	AADHAR	varchar(50)	
	CONTACT_NUMBER1	varchar(50)	
	CONTACT_NUMBER2	varchar(50)	
	FAMILY_CONTACT_NUM	varchar(50)	
	FAMILY_CONTACT_NUM	varchar(50)	
	BLOOD_GROUP	varchar(50)	
	JOINING_DATE	datetime	
	UID	bigint	
	CREATED_DT	datetime	
	MODIFIED_DT	datetime	
	DepartmentID	int	

11. Table Name: Customer

	Column Name	Data Type	Allow Nulls
▶ 8	D	bigint	
1	NM	varchar(50)	
	ADDRESS	varchar(400)	
(CONTACT_PERSON1	varchar(50)	
(CONTACT_PERSON_MO	varchar(50)	
(CONTACT_PERSON_EM	varchar(50)	
(CONTACT_PERSON2	varchar(50)	
(CONTACT_PERSON_MO	varchar(50)	
(CONTACT_PERSON_EM	varchar(50)	
(GSTIN	varchar(50)	
9	STATE_ID	bigint	
l	UID	bigint	
(CREATED_DT	datetime	
ı	MODIFIED_DT	datetime	
(CURRENCY	varchar(50)	

5. Testing

Testing is a process of running with the intent of finding errors in the system. testing assures the quality of the System and represents a final review of other phases of a system like specification, design, code generation, etc.

5.1 Unit Testing

Unit tests involve testing a part of an app in isolation from its infrastructure and dependencies. When unit testing controller logic, only the contents of a single action are tested, not the behavior of its dependencies or of the framework itself.is working correctly.

5.2 Validation Testing

Model Validation

Model in MVC is basically a representation of our data structure. If you validate this data initially, then everything is good for processing. Web API has Model Binding and Model Validation support. The techniques given below will be used for the validation.

Postman is an application used for API testing.

5.3 White Box Testing:

In White-box testing knowing the internal working of the product, tests can be conducted to ensure that internal operations are performed according to specification and all internal components have been adequately exercised. In white-box testing logic through the software is tested by providing test cases that exercise specific sets of conditions and loops.

At every stage of project development, I have tested the logic of the program by supplying the invalid inputs and generating the respective error messages. All the loops and conditional statements are tested to the boundary conditions and validated Properly.

5.4 Output Testing

For output testing, on the second demo, we gave our software to the user to enter random input which showed that every input field is validated properly so entering random input is useless and by providing proper input user got the desired result.

5.4 User acceptance testing

Acceptance Testing is performed on a collection of business functions in a production environment, and after the completion of Functional Testing, This is the final stage in the testing process before the system is accepted for operational use. It involves testing the system with data supplied by the customer or the site visitor rather than the simulated data developed as part of the testing process.

Acceptance Testing often reveals errors and missions in the system requirements definition. A survey is conducted among these site visitors on different aspects of the Web site, such as user-friendliness, convenience, visual appeal, relevance, and responsiveness.

6. Conclusion and Recommendations

- 1. Some of the concepts of security have been applied in this system to protect the system from unauthorized access.
- 2. The security issue is implemented via; encrypted passwords using the hash function (MD5), and CRC32.
- 3. From this system work arrange properly department-wise and automatically to design project parts.

7. Future Scope

Project scope is the part of project planning that involves determining and documenting a list of specific project goals, deliverables, features, functions, tasks, deadlines, and ultimately costs. In other words, it is what needs to be achieved and the work that must be done to deliver a project.

8.References

Books:

- 1) The C# Programming Yellow Book: Rob Miles
- 2)C# 4.0 The Complete Reference" by Herbert Schild

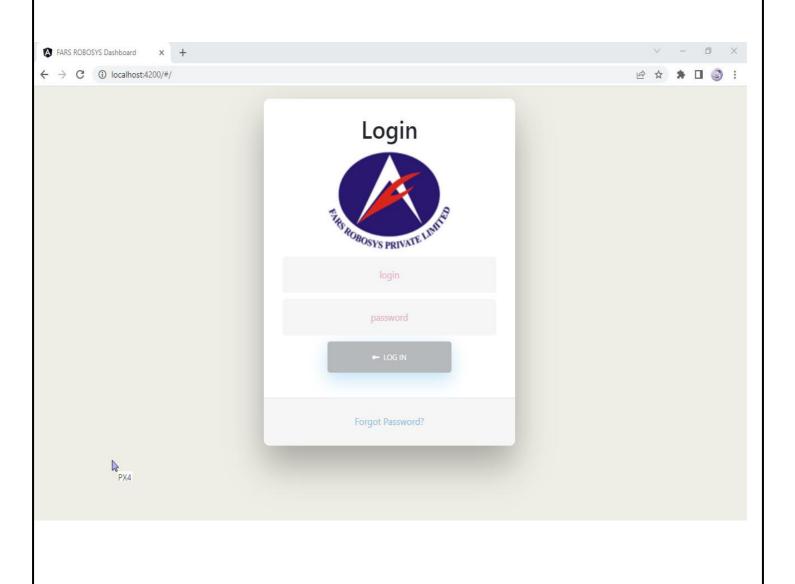
Websites:

- 1) https://Javatpoint.com
- 2) https://Quespond.Com
- 3) https://www.w3schools.com

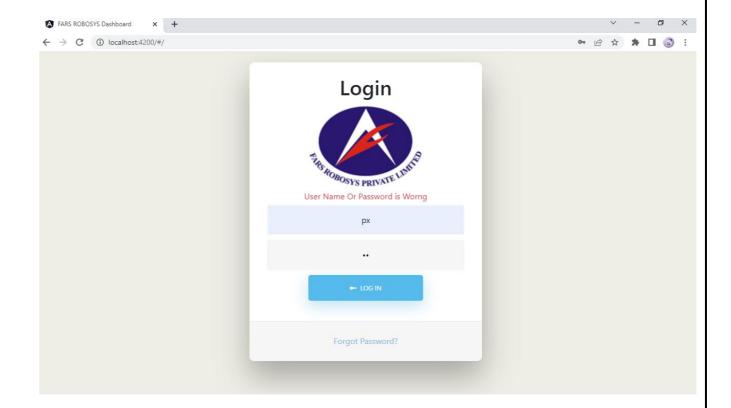
9. Appendix

Appendix A: Screen Layout

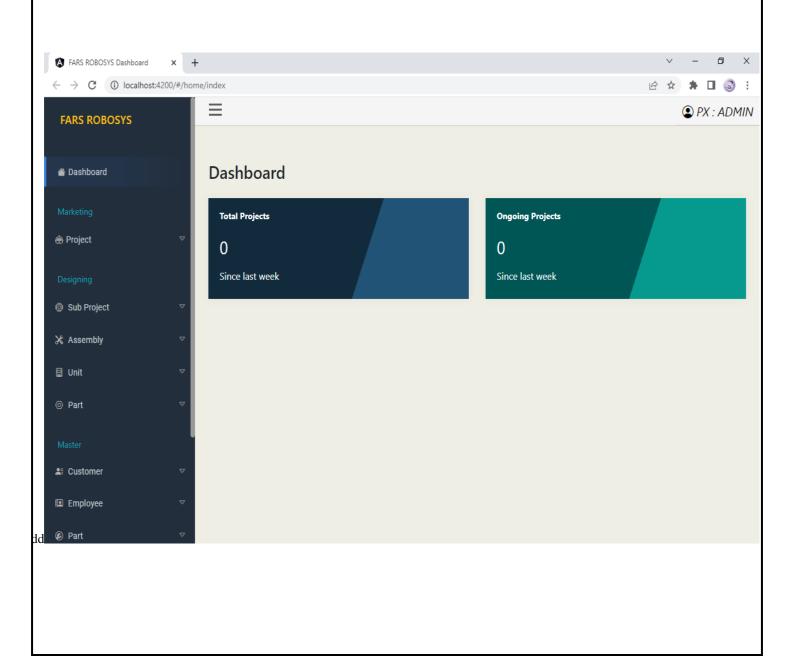
1. Login Screen

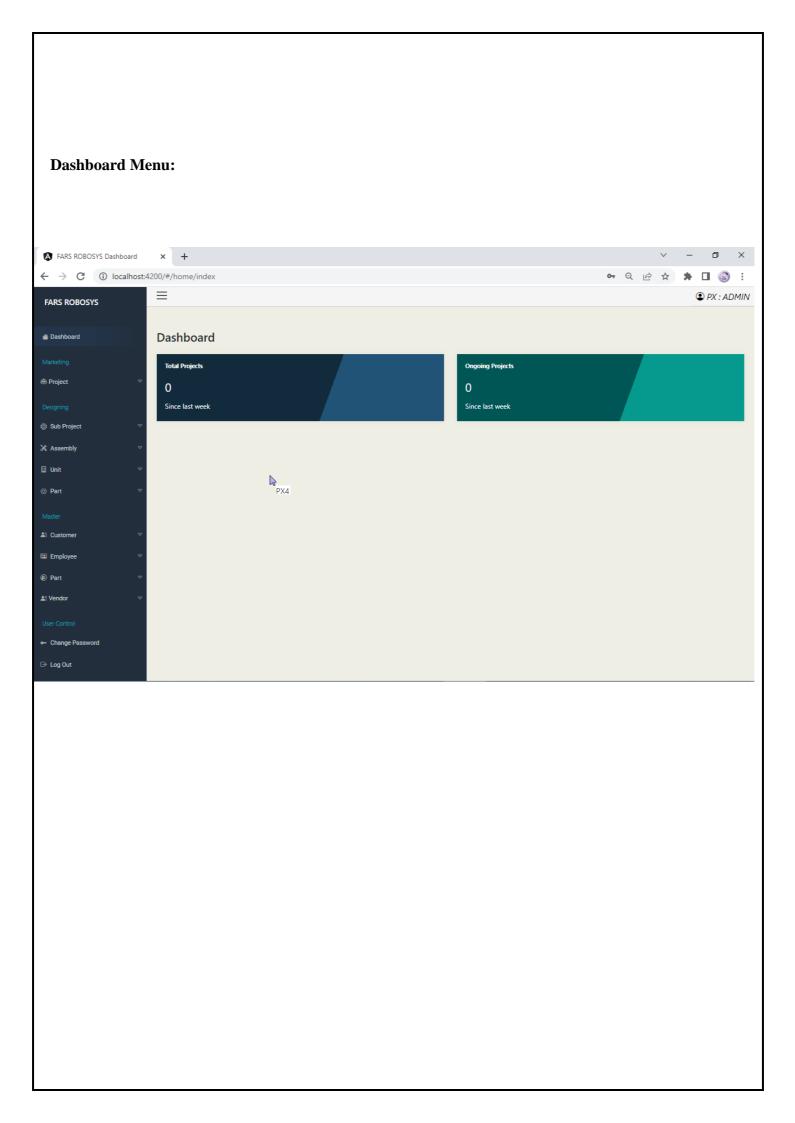


Login Fail Screen:



2. Dashboard:





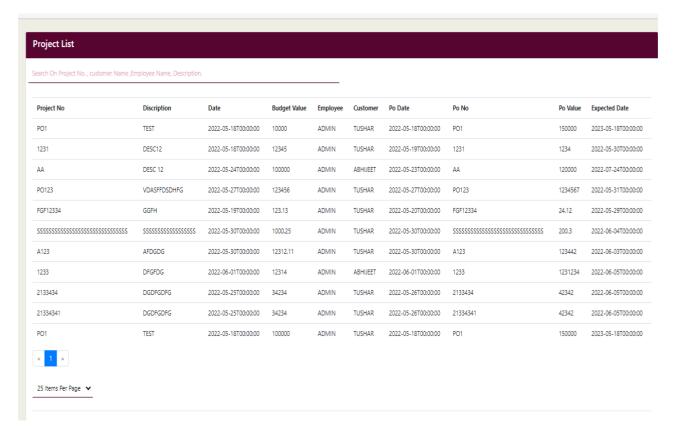
3. Project:

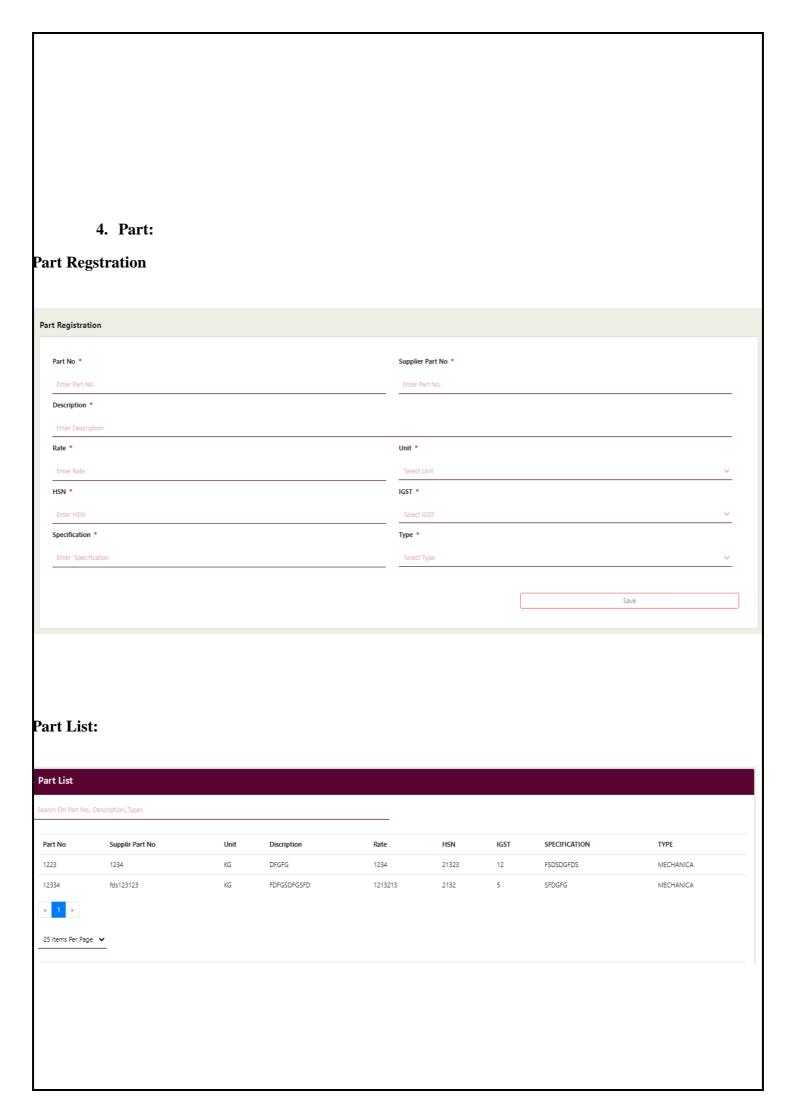
Registration

Project No *	Date *	Date *		
Enter Project No	dd-mm-yyyy	٥		
Customer *	Employee *	Employee *		
Select Customer	Select Employee	Select Employee		
Description *				
Enter Description				
PO No *	PO Date *	PO Date *		
Enter Po No	dd-mm-yyyy	٥		
PO Value *	Budget Value *			
Enter Po Value	Enter Budget Value			
Expected Date *				
dd-mm-yyyy	<u> </u>			
Location *	Payment Terms *			
Enter Location	Enter Payment Terms			
		Create		

Update:	
Saarch Drainet	
Search Project	
Project No *	
	Search
Modify Project	
Project No *	Date *
Enter Project No	dd-mm-yyyy 🗖
Customer *	Employee *
Select Customer	Select Employee
Description *	
Enter Description	
PO No *	PO Date *
Enter PO No	dd-mm-yyyy
PO Value *	Budget Value *
Expected Date *	Enter Budget Value
dd-mm-yyyy	
Location *	Payment Terms *
Enter Location	Enter Payment Terms
	Save Changes

List:





5.Subproject Register **Sub Project Registration** Sub Project No * Project No * Enter Sub Project No. Select Project No. Description * Enter Discription. QTY * Budget * Enter Buget. Enter Qty. PO Value * Custemer Part Number * Enter Po Value. Enter Custemer Part Number . HSN * Enter HSN Save

Update:					
e paare.					
earch Sub Project					
Sub Project No *	_				
	Search				
Modify Sub Project					
Sub Project No *	Project No *				
Enter Sub Project No.	Select Project No.				
Description *					
Enter Discription.					
Budget *	QTY *				
Enter Budget.	Enter Qty.				
PO Value *	Custemer Part Number *				
Enter Po Value	Enter Custemer Part Number .				
HSN *					
Enter HSN .					
		Save Changes			

List

Subproject List

Search On Subproject No., Customer Part No. Description.

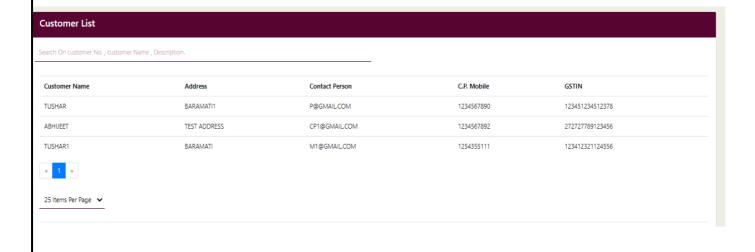
Subproject No	Description	Budget	Qty	Po Value	Customer Part No	Hsn
13	SDFSDF	123	1234	12345	CUST134	vxcb1324
AA-1	AA DESC	150000	5	200000	CUST-AA-1	12345666
TEST123	TEST DES	123456	2	123456	123456	12
TEST2	DESC2	789456	3	789456	789456	12
SUBPROJECT1	TEST DESC	150000.25	5	200000	TEST123	22

6.Customer:

Registration

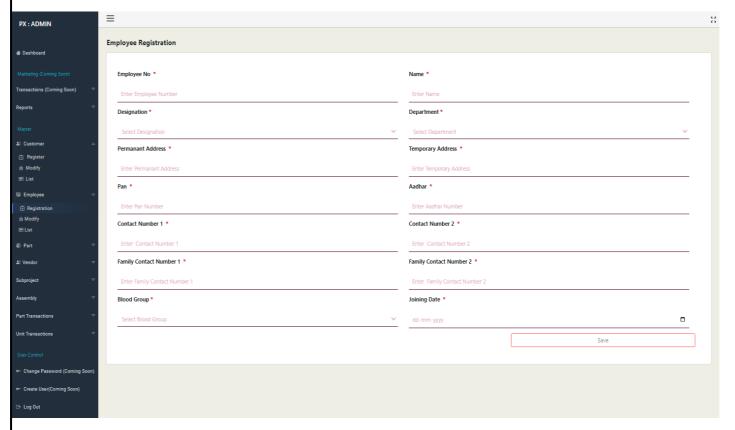
Customer Registration					
Name *	Address *				
Enter Name	Enter Address				
Contact Person Details 1					
Contact Person *	Contact Person Mobile *				
Enter Contact Person	Enter Contact Person Mobile				
Contact Person Email *					
Enter Contact Person Email					
Contact Person Details 2					
Contact Person *	Contact Person Mobile *				
Enter Contact Person	Enter Contact Person Mobile				
Contact Person Email *					
Enter Contact Person Email					
State *	GSTIN *				
Select State	Enter GSTIN				
Currency *					
INR •					
		Save			

List:

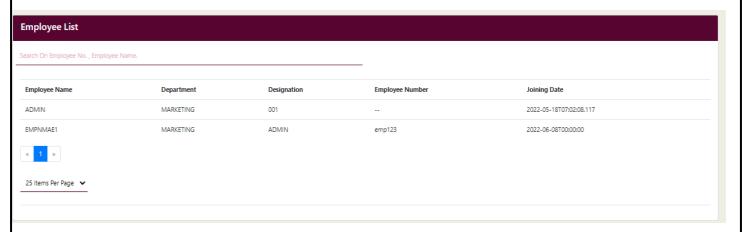


6.Employee

Registration

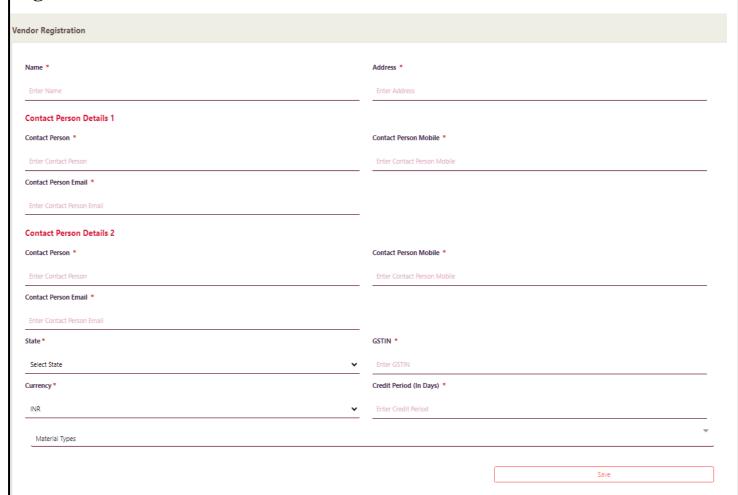


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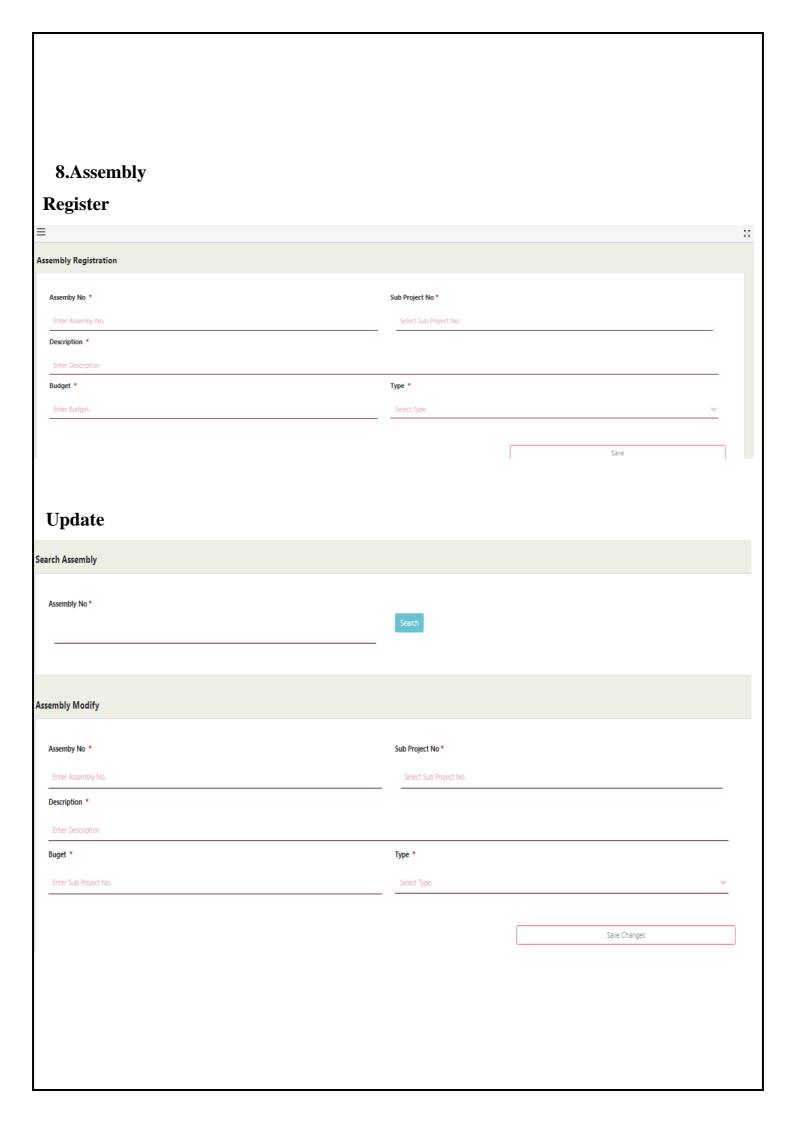
7. Vendor

Register



List

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