

BUSINESS MANAGEMENT SYSTEM



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INTRODUCTION

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Problem Statement

Small and Medium-Scale Enterprises (SMEs) are the backbone of many economies, yet they often struggle with fragmented and inefficient business management systems. Existing solutions are disjointed, with separate software for inventory, human resources, expenses, and sales. This lack of integration makes it challenging for SMEs to gain a comprehensive view of their operations, leading to inefficiencies, increased costs, and missed growth opportunities.

Efficient inventory management is critical for SMEs to meet customer demands and optimize resources. However, without a unified system, they face issues such as overstocking, stockouts, and poor supplier management. Similarly, human resource processes become overwhelming without centralized systems for recruitment, payroll, and attendance tracking. These challenges are compounded by the fragmented nature of current software offerings, which fail to communicate seamlessly with each other.

In the competitive market landscape, timely insights are essential for SME decision-making. Unfortunately, existing systems often lack robust reporting and analytics capabilities, leaving SMEs without actionable insights into their performance. Thus, there is a clear need for a tailored Business Management System (BMS) for SMEs. Such a system would provide seamless integration of inventory, HR, expenses, sales, and reporting, empowering SMEs to streamline operations, reduce costs, and achieve sustainable growth. Scalability and customization options further ensure that the BMS can evolve with the business, meeting its changing needs over time.



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ABOUT OUR PROJECT

In the dynamic landscape of Small and Medium-Scale Enterprises (SMEs), effective management systems are indispensable for sustained growth and competitiveness. Recognizing this need, the Business Management System (BMS) emerges as a comprehensive solution tailored specifically for SMEs. By seamlessly integrating mobile and desktop applications via the cloud, BMS revolutionizes the way businesses operate, offering unparalleled efficiency and agility.

At its core, BMS is designed to address the multifaceted challenges encountered by SMEs, encompassing inventory management, human resources, expense tracking, dues management, and insightful business analytics. It serves as a digital backbone, empowering entrepreneurs and managers with the tools necessary to navigate complexities and capitalize on opportunities in today's market.



With a suite of features meticulously crafted to meet the unique demands of SMEs, BMS facilitates precise inventory tracking, streamlined HR processes, meticulous expense management, and robust analytics capabilities. Moreover, its customizable reports and visualizations provide invaluable insights, enabling informed decision-making and strategic planning.

In essence, BMS goes beyond traditional management systems by not only optimizing day-to-day operations but also laying the groundwork for long-term success. By empowering SMEs to streamline processes, maximize revenue, and adapt to market dynamics, BMS emerges as a catalyst for growth in an increasingly competitive landscape.

BACKGROUND RESEARCH :

To lay a strong foundation for the development of the Business Management System (BMS) project, extensive background research was conducted across various key areas. The research aimed to provide comprehensive insights into the market landscape, technological advancements, regulatory compliance, competitive analysis, customer feedback, business model exploration, partnership opportunities, scalability, flexibility, and risk assessment.



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Market Analysis:



A thorough examination of the market dynamics surrounding Small and Medium-Scale Enterprises (SMEs) was undertaken. This included analyzing industry trends, growth projections, and the competitive landscape. The research focused on identifying the challenges faced by SMEs and opportunities for developing a robust business management solution like BMS.

Needs Assessment:



Engagement with SMEs through surveys, interviews, and focus groups allowed for a deeper understanding of their pain points and requirements concerning management systems. Common challenges in inventory management, human resources, expense tracking, and analytics were identified, forming the basis for the development of BMS features.



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Technology Landscape:



A review of advancements in cloud computing, mobile applications, and data analytics was conducted. This exploration aimed to leverage emerging technologies to create an integrated and scalable solution like BMS. Existing software solutions were evaluated to determine their functionalities and potential areas for improvement.

Competitive Analysis:



A comprehensive analysis of competitors offering similar business management solutions for SMEs was undertaken. This involved assessing their features, pricing models, user experience, and market positioning. The research aimed to identify opportunities for differentiation and the creation of unique value propositions for BMS.



Customer Feedback:



Feedback from potential users or pilot customers regarding their experiences with existing management systems was gathered. Insights into pain points, usability issues, and desired features were collected and utilized to inform the design and development of BMS, ensuring alignment with user needs and preferences.

Scalability and Flexibility:



Consideration was given to the scalability and flexibility requirements of SMEs of different sizes and industries. BMS was designed to accommodate growth and customization, ensuring adaptability to evolving business needs and market conditions.

Risk Assessment:



Identification of potential risks and challenges associated with the development and implementation of BMS was conducted. This included technological dependencies, cybersecurity threats, and market volatility. Risk mitigation strategies were developed to address these concerns proactively and ensure project success.



PROPOSED SYSTEM GOALS AND OBJECTIVES:

Our aim is to develop a unified application that can seamlessly operate on both mobile devices and desktops, providing comprehensive management solutions for businesses to enhance efficiency in operations.

Cross-Platform Application:

The application will be accessible across mobile devices, desktops, and laptops, ensuring convenience and flexibility for users.

Data Security and Synchronization:

All data will be securely stored in the Azure cloud, ensuring safety and enabling seamless synchronization between the mobile and desktop applications.

Inventory Management:

Efficiently manage inventory control, tracking, and optimization to streamline operations.

Expense Management:

Track and control expenses to optimize financial resources efficiently.

Business Management:

Provide a centralized platform for managing various aspects of the business, facilitating productivity and informed decision-making.

Due Management:

Track and manage payments, dues, and financial obligations with ease.

Human Resources Management:

Handle HR tasks effectively, including employee records, payroll, and workforce management.

Invoice Generation and Automated Customer Delivery:

Generate and deliver invoices seamlessly to customers, saving time and ensuring accuracy.

Reporting:

Access powerful reporting tools for insights into business performance and stock analysis, enabling data-driven decisions to improve operations.

PROJECT PLANNING

Project Setup

Requirement Gathering: Detailed requirements will be gathered from business owners and end users through interviews, surveys, and workshops to ensure a thorough understanding of needs.

Project Planning: The project manager will develop a comprehensive project plan, including timelines, milestones, resource allocation, and risk management strategies.

Development Environment Setup: Set up the necessary development environments, including IDEs, SDKs, and version control systems, to commence coding.

Cloud Environment Setup: Set up cloud environments which connects both mobile app and desktop application Agile Methodology Adoption: The project will adopt agile methodologies, such as Scrum or Kanban, to facilitate iterative development, continuous feedback, and adaptation to changing requirements.

Regular Progress Meetings: Regular progress meetings will be held to review project status, address any issues or concerns, and make necessary adjustments to ensure project success.

Testing and Quality Assurance: Rigorous testing and quality assurance processes will be implemented throughout the development lifecycle to identify and address any bugs or issues promptly.

Deployment and Training: Upon completion, the application will be deployed to production environments, and training sessions will be conducted for end users to ensure a smooth transition to the new system.

STAKEHOLDERS AND THEIR ROLES

Development Team: Responsible for designing, developing, and testing the cross-platform application, ensuring it meets the specified requirements and quality standards.

Project Leader: Oversees the entire project, including planning, coordination, and communication between stakeholders. Ensures that the project stays on track and delivery within time.

End Users: Individuals who will utilize the application for managing their businesses (Small scale and Medium Scale Business owners and Business Managers). They provide feedback, suggestions, and user experience insights to improve the usability of the application.

Eg of Users :- Wholesale and Retail Shops, Super Markets, Vendors ETC

RESOURCE DESCRIPTIONS

Development Team: Comprises software engineers, designers, and quality assurance testers with expertise in mobile and desktop application development, cloud computing, and data security.

Azure Cloud Services: Utilized for securely storing and syncing data between the mobile and desktop applications. Requires knowledge of cloud infrastructure and data management.

Development Tools: Software development kits (SDKs), integrated development environments (IDEs), and version control systems (GitHub) are essential resources for building and maintaining the application.

Training Materials: Documentation, video tutorials provided to stakeholders to familiarize them with the application's features and functionality.

ASSUMPTIONS

Adequate Budget: It is assumed that no funding is required to the development, deployment, and maintenance of the cross-platform application as this is a university project.

Availability of Resources: The necessary human resources, including skilled developers, designers, and testers, are assumed to be available to execute the project successfully.

Compliance with Regulations: The application development will adhere to relevant regulatory requirements, such as data protection laws and industry standards.

Stakeholder Engagement: Active participation and collaboration from stakeholders, end users, are assumed to be integral for gathering requirements and feedback throughout the project lifecycle.

Scalability Considerations: The application will be designed with scalability in mind to accommodate potential growth in user base and data volume over time.

Timely Delivery: The project timeline assumes that development milestones will be met according to the planned schedule, allowing for timely delivery of the cross-platform application.

SYSTEM ANALYSIS AND DESIGN:

OVERALL DESCRIPTION

The Business Management System (BMS) is a comprehensive solution designed to streamline business operations for Small and Medium-Scale Enterprises (SMEs). It comprises both mobile and desktop applications connected via the cloud, providing seamless access to essential business management functionalities. BMS enables efficient management of inventory, human resources, expenses, dues, and offers robust business analytics with customizable reports and visualizations. The system is designed to empower SMEs to optimize their operations, maximize revenue, and achieve growth in a competitive market.



Users and Roles

Administrator:

Responsible for setting up and configuring the BMS system.
Manages user accounts and permissions.
Oversees system maintenance and updates.

Business Owner/Manager:

Utilizes BMS to oversee and manage all aspects of the business.
Accesses reports and analytics to make informed decisions.
Monitors inventory, expenses, and dues to ensure efficient operations.

Human Resources Manager:

Manages employee records, payroll, and workforce scheduling.
Tracks employee attendance, leaves, and performance evaluations.
Generates reports on HR metrics and analytics.

Sales Personnel:

Uses BMS to create and manage customer invoices.
Tracks sales orders, deliveries, and customer payments.
Accesses customer information and sales history for effective communication.

Inventory Manager:

Responsible for inventory control, tracking, and optimization.
Monitors stock levels, replenishment, and inventory movements.
Generates reports on inventory turnover and stock analysis.

User Stories:

As a User I want complete dependencies should be get by downloading and installing BMS application so that I no need to download all dependencies individually.

Acceptance Criteria:

All the dependencies used in developing the software packaged with software

Java runtime environment also bundled in the package.

All the source code with all dependencies should be made into object code.

Wizard scripts for easy install and bundle whole application to (Exe file and APK file)

On clicking download application will download into your device.

On clicking install complete application with all dependencies will be installed to your devices.

User Stories:

As a business owner I want to get perfect between any two dates so that I can get weekly, monthly, yearly etc. reports..

Acceptance Criteria:

On clicking report menu.

Select first date & last date.

Click on Generate Report.

Sales, Purchase, Profit Expenses data is displayed.

Products purchase and sales are grouped and displayed.

Click on Download and get the report in PDF format.

User Stories:

As a Human Resource Manager I want to take attendance so that I can share the working days to all the employees.

Acceptance Criteria:

Select Attendance menu under employees.

By default all employees are selected "Absent"

Change the Select button to Present if the employee is Full Day Present.

Change the selected button to half present if employee is Half Present.

Click on Done once all employees Attendance is selected properly.

All employees working days are updated accordingly.

Today's attendance is displayed well.

User Stories:

As a Business Manager I want to see the product reports in Data Visualisation way also so that I can get better understanding of sales & profit.

Acceptance Criteria:

On clicking report menu.

Select first date and end date.

Click on generate report.

Select state visualisation.

Sales & Profit are grouped by product name.

And displayed in pie chart with different colours for each pie.

Place the mouse cursor on that pie for better understanding of sales & profit of that product.

User Stories:

As a user I want to use the application on both mobile & desktop so that I can there access the application till th time and from all devices.

Acceptance Criteria:

Developed the cross platform application.

APK app for mobile.

Software application(ExE) for desktop

Data stoage on cloud for data synchronisation between mobile & Desktop application.

Connect Desktop & Mobile to cloud.

Now I can access the application all the time from monbile as well as Desktop.

User Stories:

As a sales Manager I want to generate invoice in PDF format so that I can send it to customer as a proof of purchase

Acceptance Criteria:

Enter Customer Details

Enter products purchased by the customer

Enter Amount Paid by customer

Click on generate Invoice

Tax details will be fetched from the database

A Invoice with All products purchased with tax details will be generated

This invoice will be in PDF format and stored in local storage

User Stories:

As a business manager I want to add all expenses details so that I can save the expenses details and manage expenses.

Acceptance Criteria:

Click on expense menu

select the type of expense

enter the amount paid
for the expense

expenses will saved
successfully

for managing expenses
select reports and dates

select expenses
visualisation

expenses will be displayed
in pie chart

move cursor to pie chart to
view expense details
properly

User Stories:

As an inventory manager I want to update product purchase so that I can enter purchased products.

Acceptance Criteria:

Click on purchase menu

Enter product name,
vendor name

Purchase quantity and
price

Click on enter

Products purchased will be
entered successfully

User Stories:

As a business owner I want a feature to auto update due when sales are entered so that customer due will be updated successfully

Acceptance Criteria:

Enter products purchased by the customer

Past due will be added if any

This order Amount + Previous due are displayed

Enter amount paid by the customer

Difference Amount will be automatically updated in customer due list

User Stories:

As an Inventory manager i want an option of delivery Invoice customer Mail so that invoice will be delivered automatically

Acceptance Criteria:

enter customer mail while entering customer details

select "with bill" and "send to mail" options

click on done

Invoice will be generated automatically

and invoice will be delivered to customer's mail automatically

User Stories:

As an business manager i want comparision between profit vs revenue graph so that I can understand and plan for business optimisation.

Acceptance Criteria:

click on reports menu

Select first date and last date

click on revenue vs profit button

A line chart graph will be displayed comparing revenue vs profit

move cursor on graph for understanding better and optimise business

Sprint 1: Basic Functionality

Goal:

Establish the foundational framework for the BMS application, ensuring it can be installed and accessed seamlessly across mobile and desktop devices.

Tasks:

1. Set up a development environment for mobile and desktop platforms.
2. Develop installation and setup procedures for the BMS application.
3. Implement functionality to automatically download and install dependencies during application installation.
4. Test the installation process on various devices and platforms to ensure compatibility.

Sprint 2: Reporting and Visualization

Goal:

Enhance BMS with reporting and visualization capabilities to provide business owners and managers with insights into their operations.

Tasks:

1. Develop functionality to generate reports between specified dates for different time periods (weekly, monthly, yearly).
2. Integrate data visualization tools to represent product reports in graphical formats.
3. Implement user interface components for accessing and viewing generated reports.
4. Conduct thorough testing to ensure accuracy and usability of reporting and visualization features.

Sprint 3: Workflow Improvements

Goal:

Streamline key business processes within BMS, including attendance tracking, invoice generation, and inventory management.

Tasks:

1. Design and implement attendance tracking feature for Human Resource Managers.
2. Develop functionality to generate invoices in PDF format for sales managers.
3. Enhance inventory management system to allow for easy updating of product purchases.

Sprint 4: Automation and Advanced Features

Goal:

Implement automation features and advanced functionalities to improve efficiency and user experience within BMS.

Tasks:

1. Develop an expense management module allowing business managers to add and track all expense details.
2. Implement automated updates of customer dues when sales are entered.
3. Integrate functionality to automatically deliver invoices to customers via email.
4. Design and implement profit vs. revenue graph comparison feature for business managers.
5. Conduct comprehensive testing to ensure the reliability and accuracy of automation and advanced features.

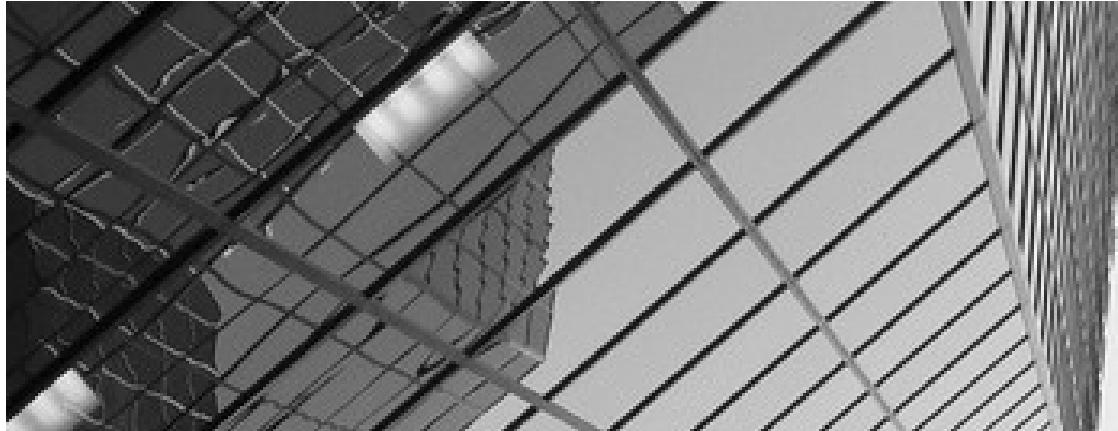
Sprint 5: Customer Engagement and Optimization

Goal:

Enhance customer engagement and optimize business processes through automation and improved features within the BMS application.

Tasks:

- 1) Implement a feature for auto-updating due amounts when sales are entered, improving customer due management.
- 2) Develop functionality to automatically deliver invoices to customers via email, enhancing customer communication and convenience.
- 3) Integrate option for delivery invoice customer mail, enabling seamless delivery of invoices to customers.
- 4) Design and implement a comparison between profit vs. revenue graph features for business managers, facilitating informed decision-making.
- 5) Conduct thorough testing to ensure reliability, accuracy, and seamless functionality of customer engagement and optimization features.



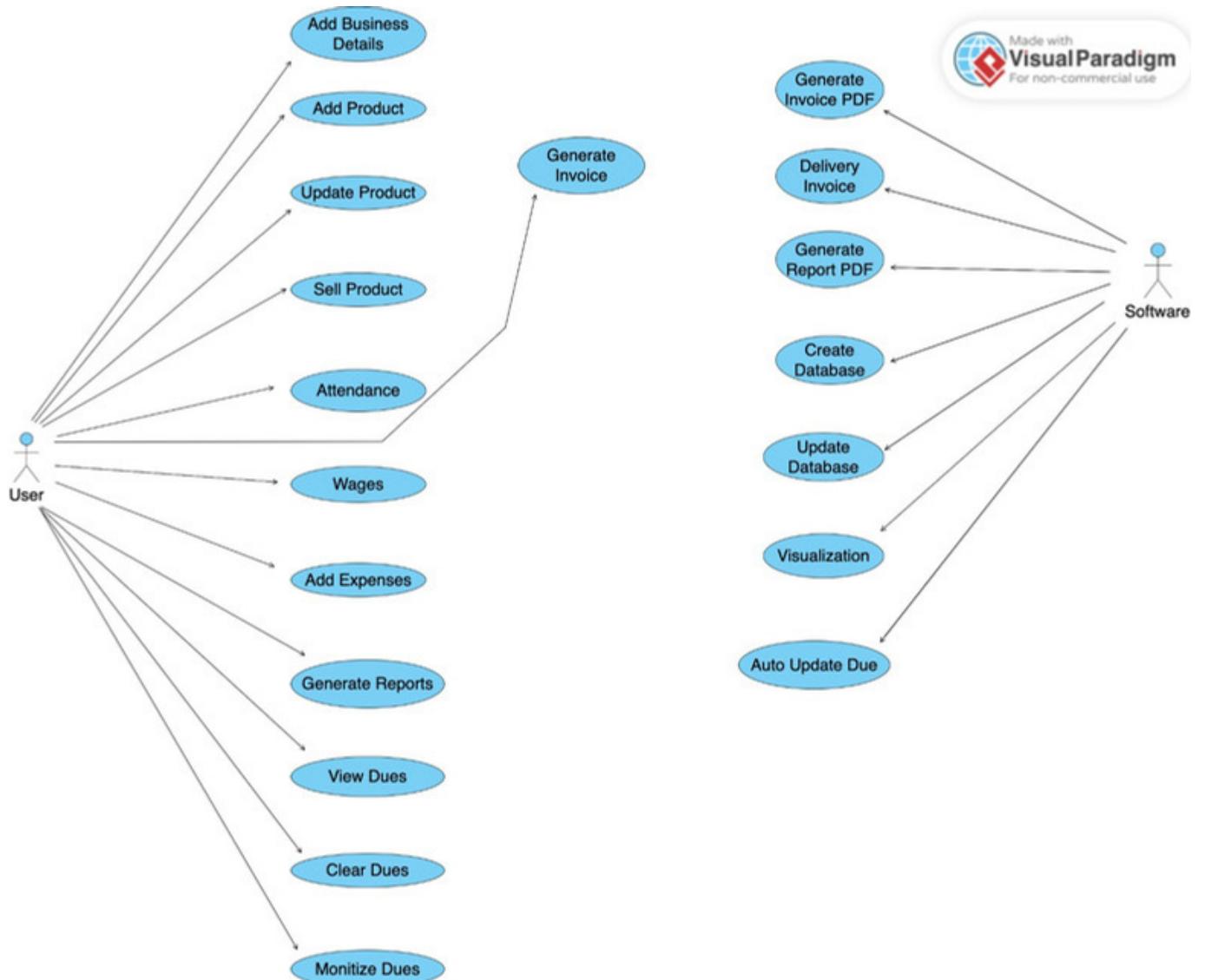
04

UML DIAGRAM

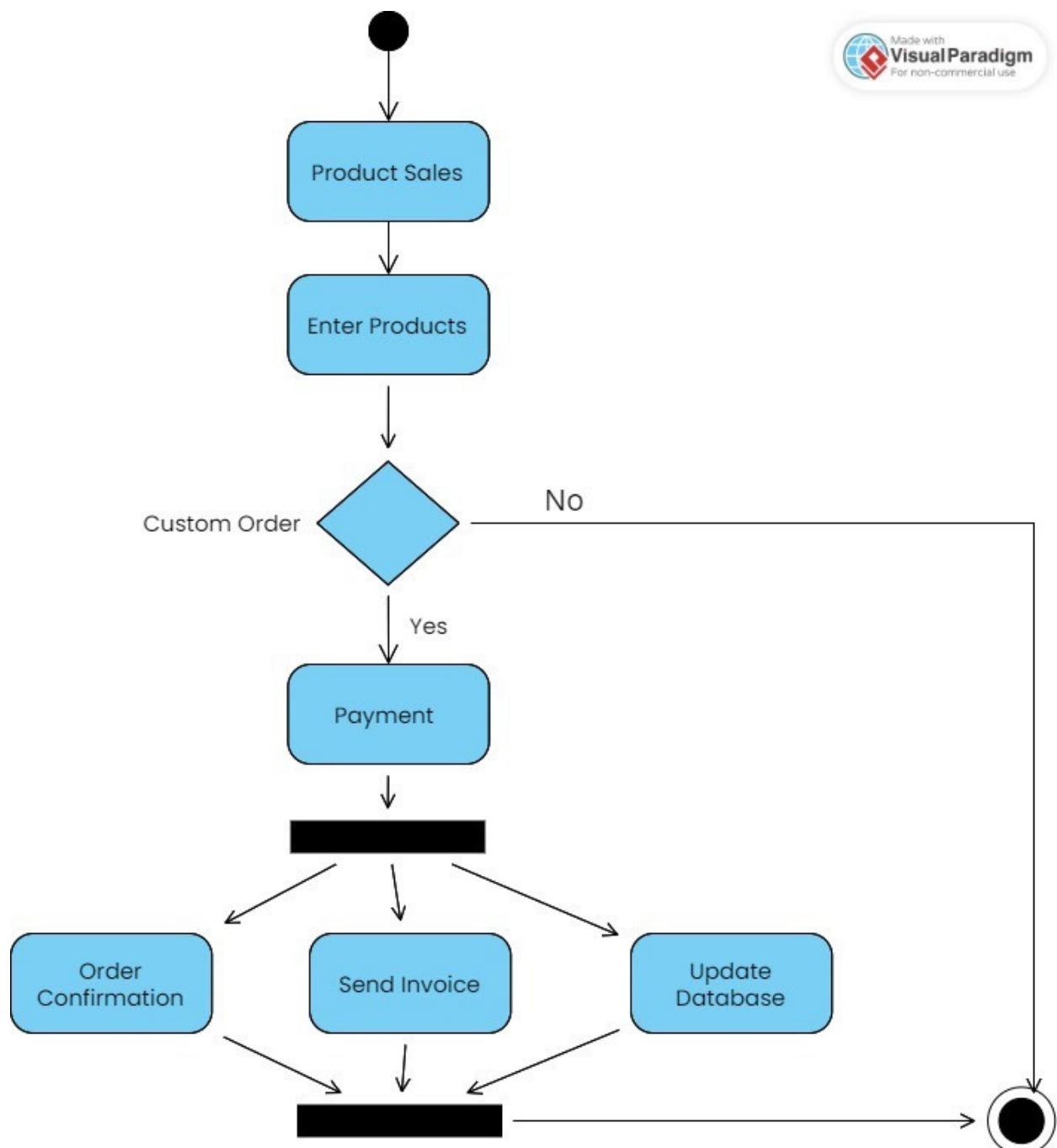


- 1. USE CASE DIAGRAM**
- 2. ACTIVITY DIAGRAM**
- 3. SEQUENCE DIAGRAM**
- 4. CLASS DIAGRAM**

USECASE DIAGRAM

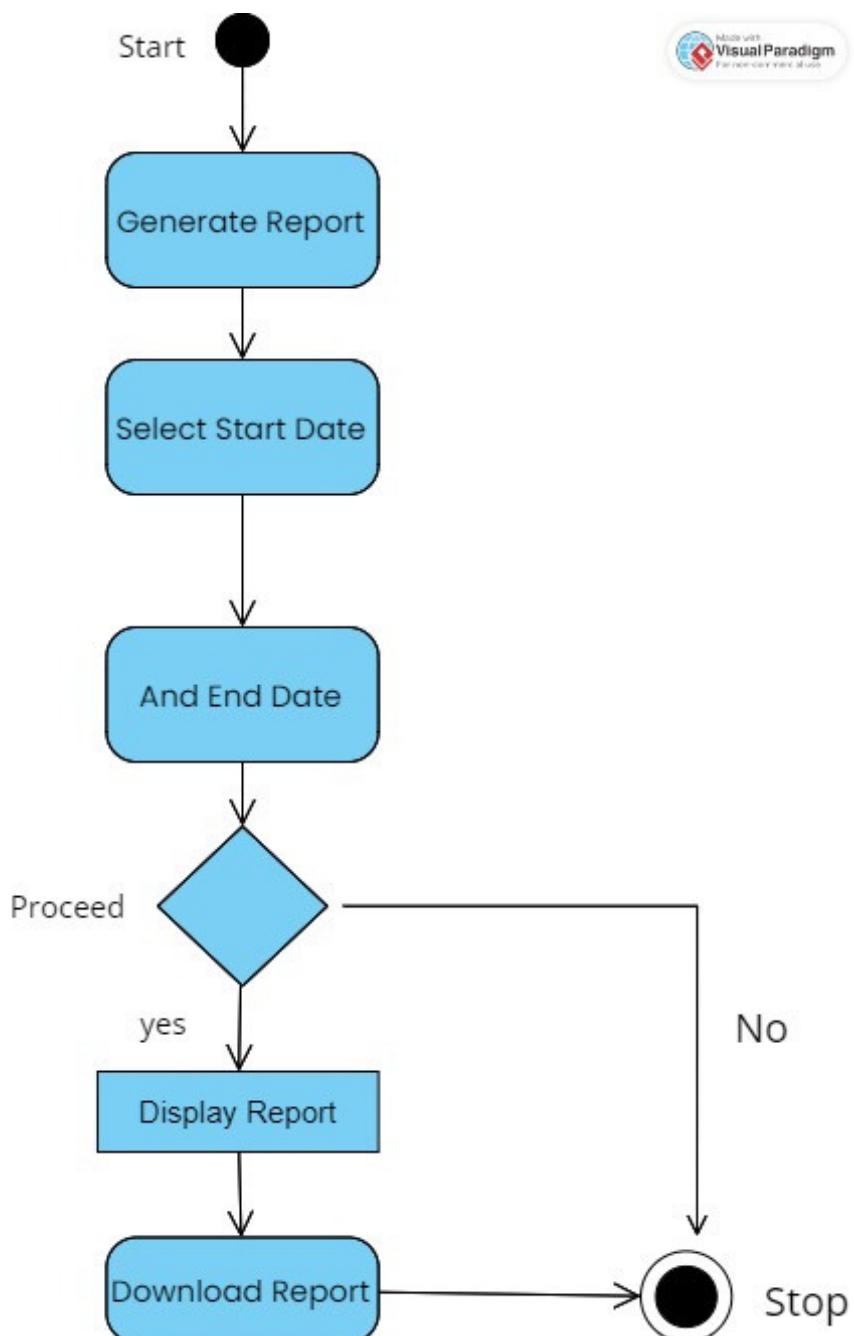


ACTIVITY DIAGRAM FOR PRODUCT SALES

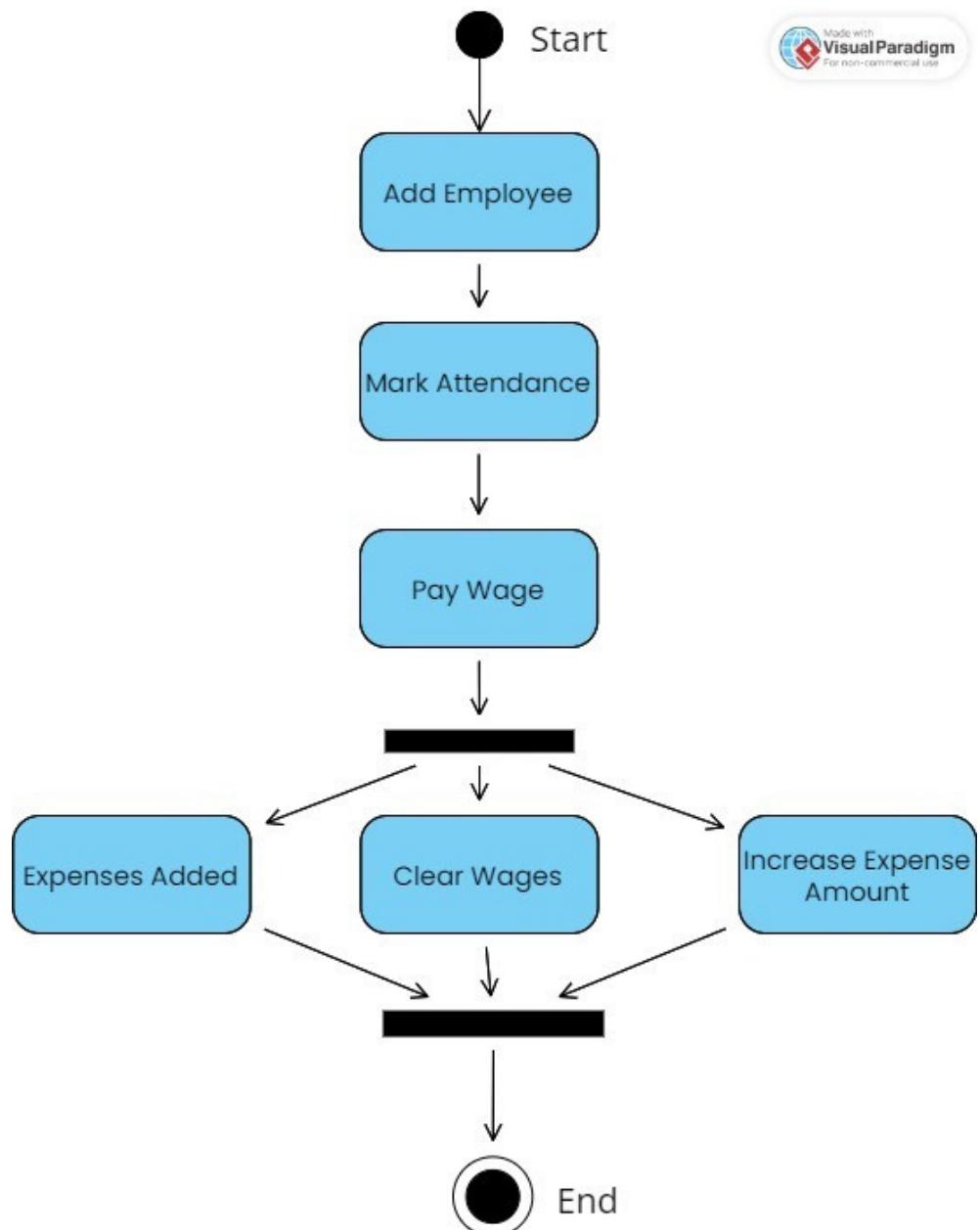


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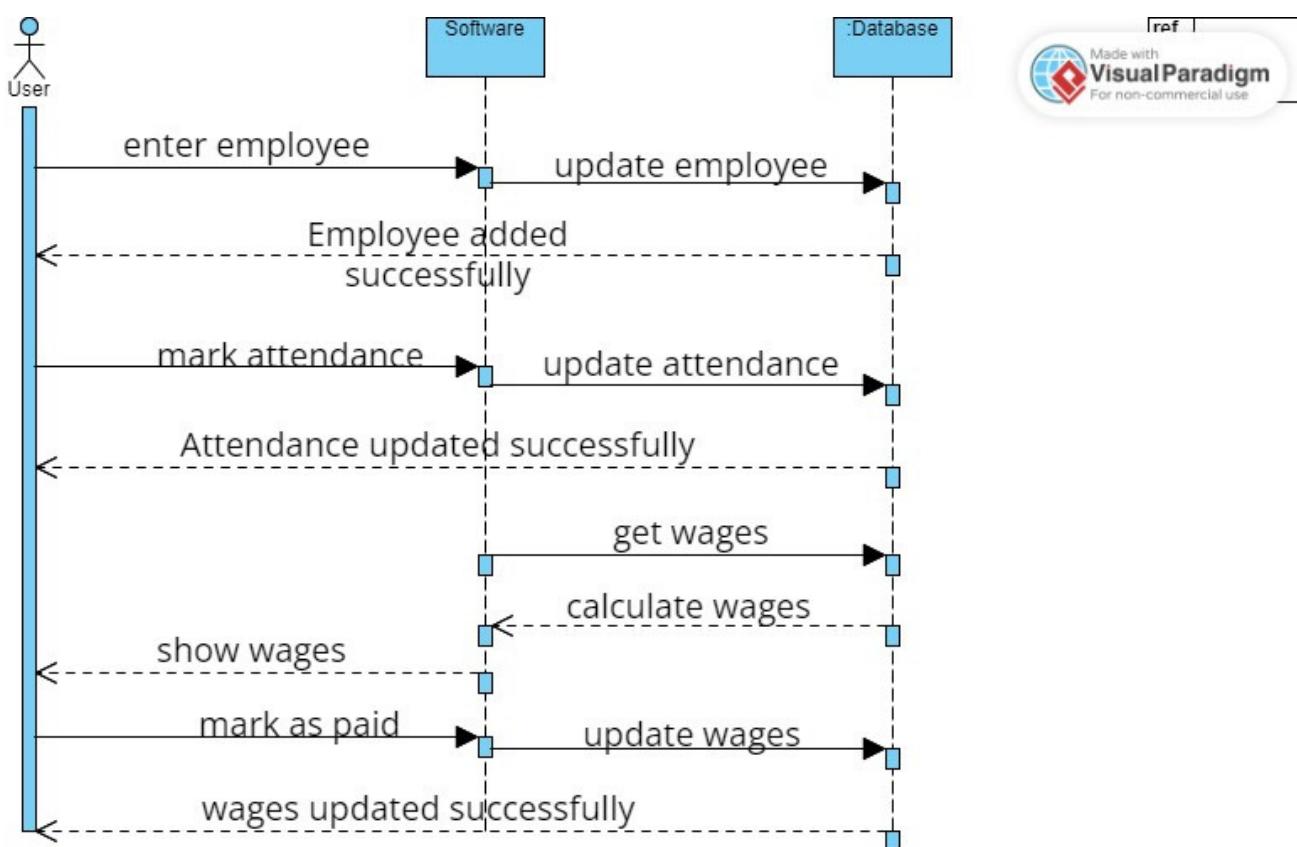
ACTIVITY DIAGRAM FOR DOWNLOADING REPORT



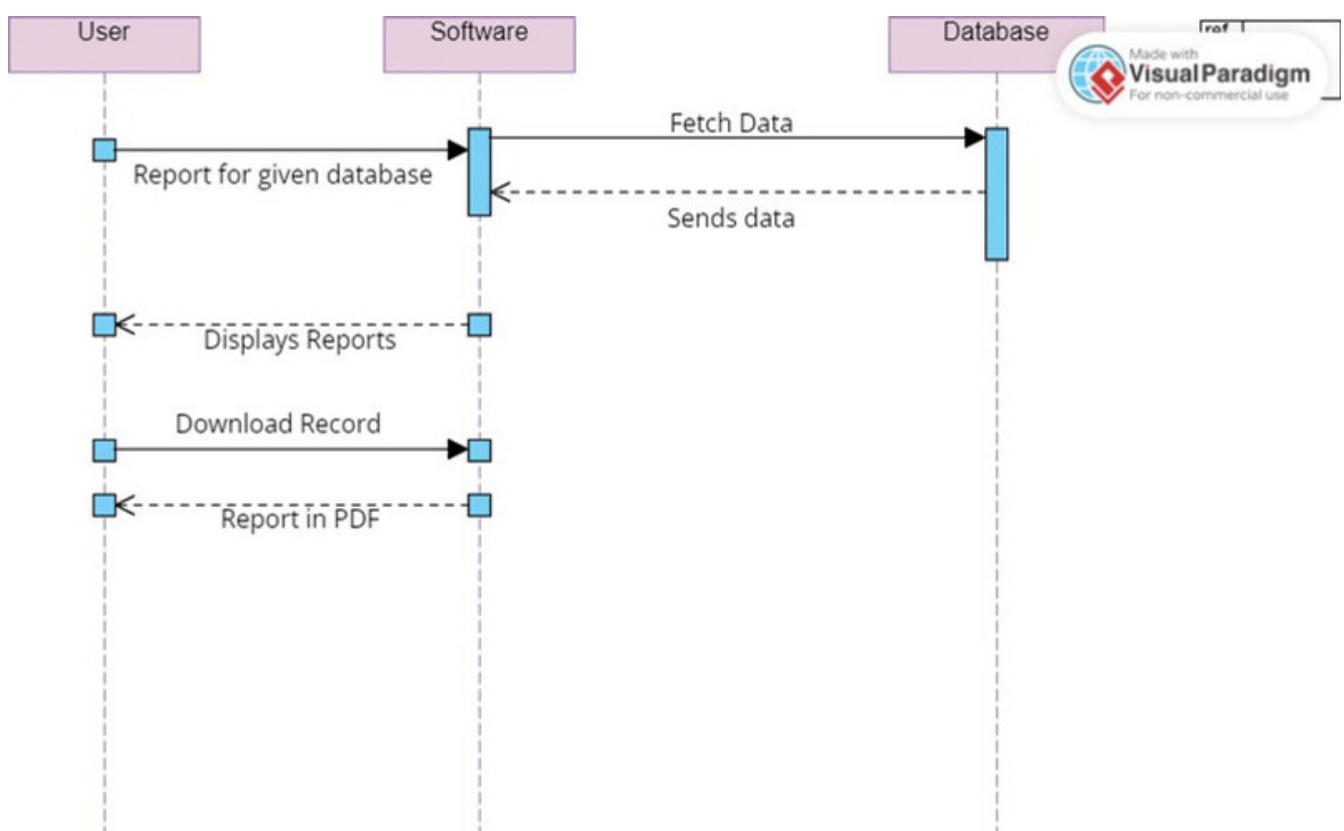
ACTIVITY DIAGRAM FOR WAGES



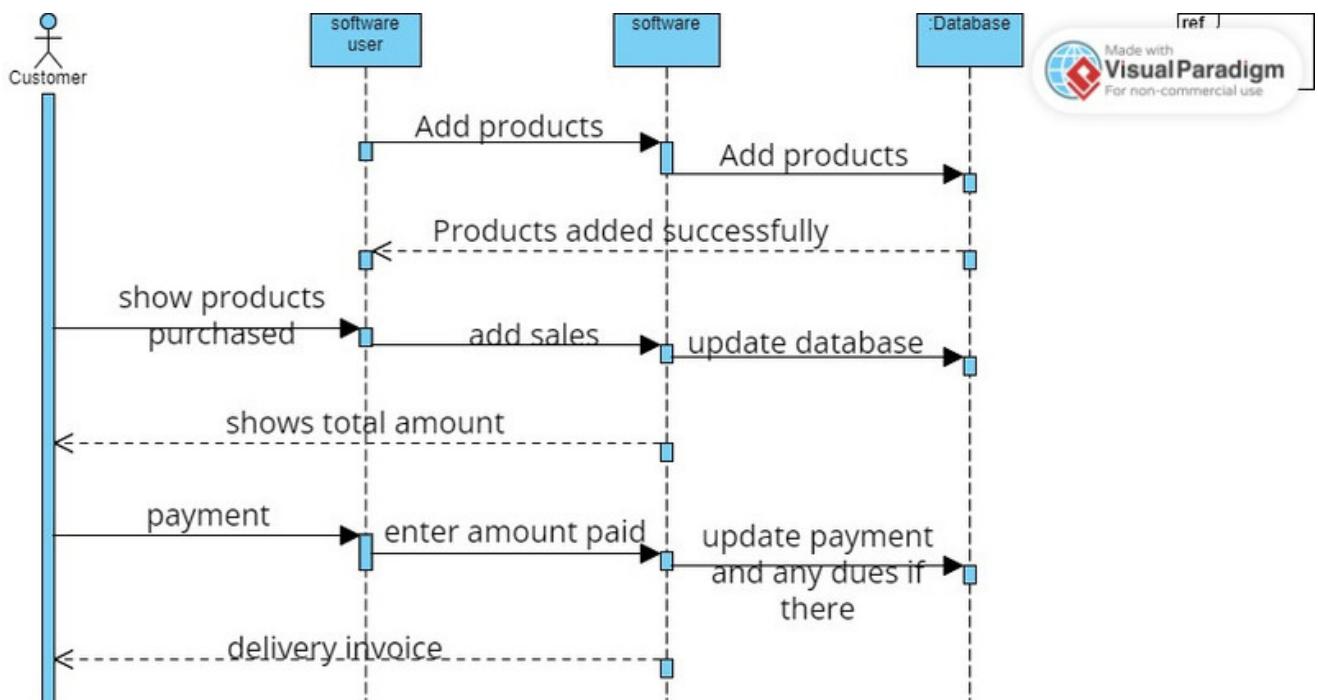
SEQUENCE DIAGRAM FOR WAGES



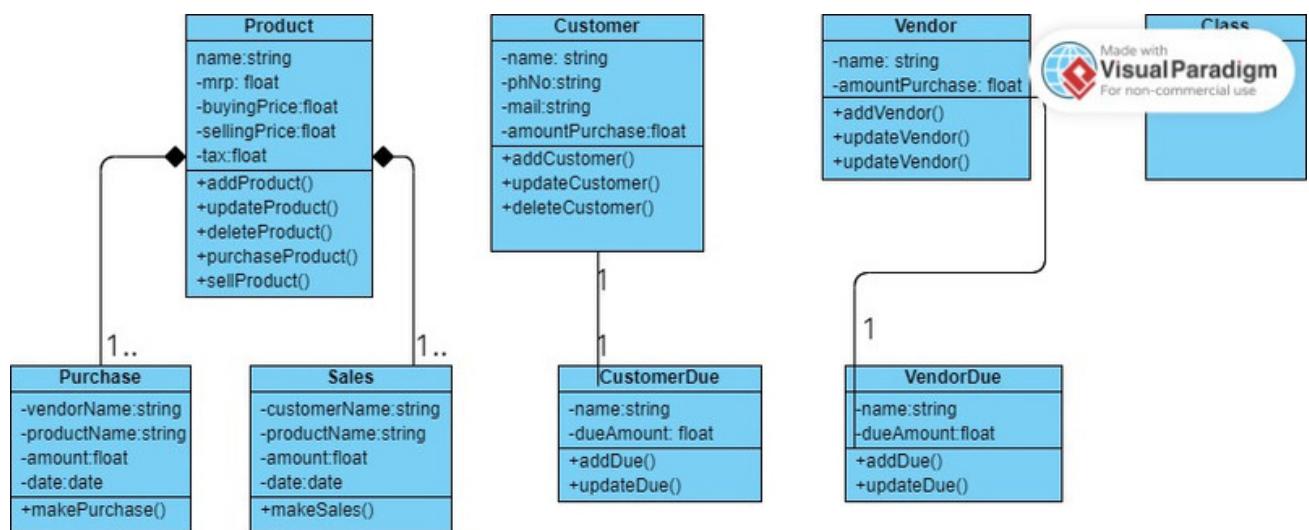
SEQUENCE DIAGRAM FOR DOWNLOADING REPORT



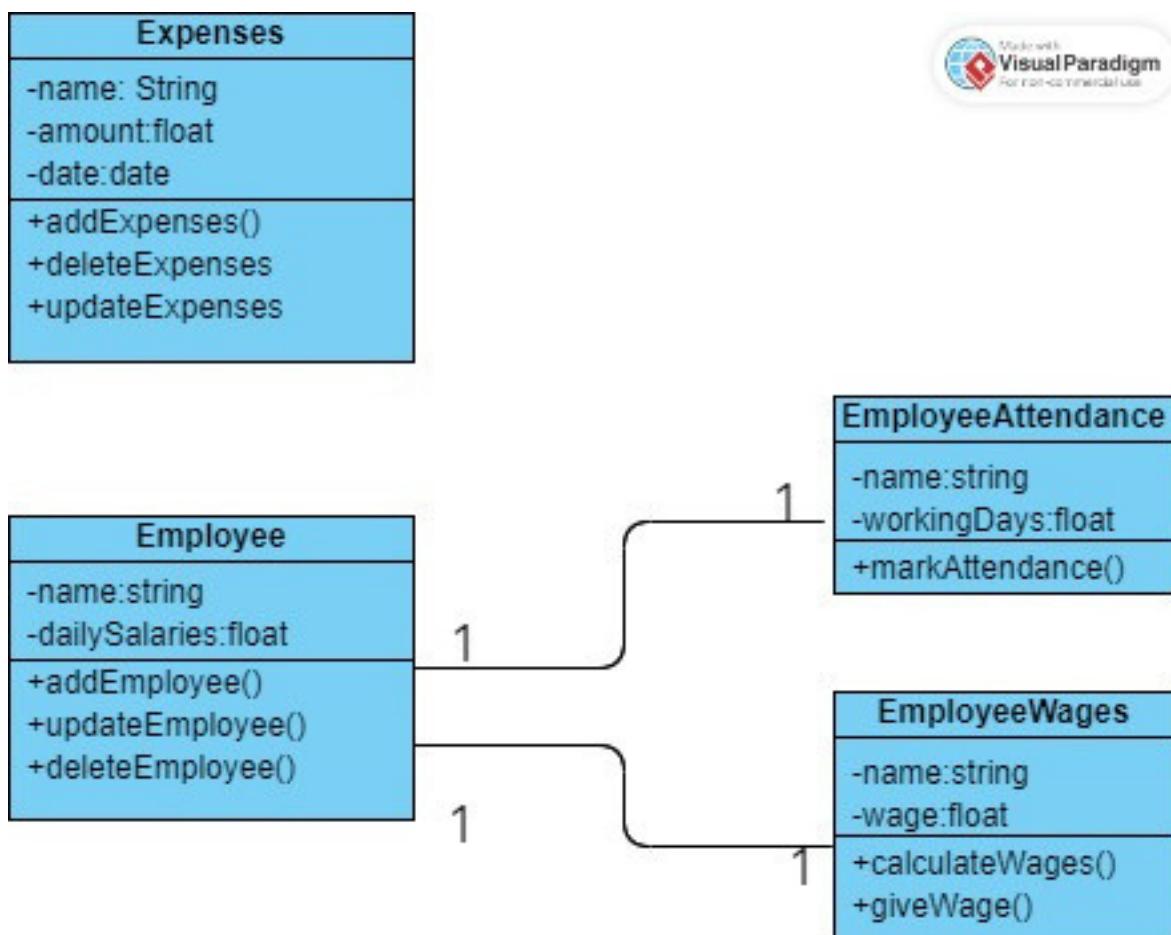
SEQUENCE DIAGRAM TO GENERATE INVOICE



CLASS DIAGRAM



CLASS DIAGRAM



USER INTERFACES

BUSINESS MANAGEMENT SYSTEM (B.M.S)

Stock Amount	Total Sales	Expenses	Revenue	Profit	Tax
9936429	53614.00	2450.00	387829	1428.29	0.00

PRODUCTS SELLING

Name	Quantity	MRP	Price	TAX%
axe chocolate 250ml	2.0	600.0	520.0	18.0
bru 200gm	15.0	300.0	260.0	5.0
dal 5 kg	12.0	800.0	700.0	0.0
lux 250gm	13.0	70.0	65.7	12.0
oil 1 l	26.0	200.0	160.0	5.0
rice 25 kg	24.0	1600.0	1400.0	0.0
sal 1kg	23.0	25.0	20.0	5.0
surf excel 6kg	33.0	1400.0	1200.0	18.0
taj 500gm	21.0	400.0	350.0	18.0

Enter Product Name:

Create Product Employee Expenses Dues Data Reports

Enter Customer Name:

Enter Mobile Number:

Enter Mail ID:

Enter Product Name:

Enter Quantity:

Sell With Feeded Amount:

Enter Selling Price(For 1 unit):

Name	Price	Quantity	MRP
axe chocolate 250ml	570.0	2.0	600.0
bru 200gm	280.0	15.0	300.0
dal 5 kg	750.0	12.0	800.0
lux 250gm	60.0	13.0	70.0
oil 1 l	180.0	26.0	200.0
rice 25 kg	1500.0	24.0	1600.0
sal 1kg	22.0	23.0	25.0
surf excel 6kg	1300.0	33.0	1400.0
taj 500gm	380.0	21.0	400.0

CUSTOMER LIST

Total Number of Customers : 8

Enter Name Of The Person:

Name	Amount	Mobile Number	Mail ID
amar	1300.0	8712173660	amar18@gmail.com
amarnath	1300.0	7036515161	am77@gmail.com
ani	2540.0	9398922477	anirudhkoppuravuri07@g...
krish	11452.0	8919482349	jayac5818@gmail.com
padmaja	6860.0	9247830862	jayac5818@gmail.com
saideep	16572.0	7032698060	jayac58181@gmail.com
vennela	9290.0	9293450362	kj455@snu.edu.in
yash	4300.0	9676097377	yashgollapudi@gmail.com

USER INTERFACES

ATTENDANCE

Total Number of Employees : 9

Enter Name Of The Person

Name	Present	Half Pres	Absent
anu deep	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
mahesh	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
mani	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
mohit	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
radha	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
raj	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
ram	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
rani	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

WAGES LIST

Total Number of Employees : 9

Enter Name Of The Person

Name	Daily Salary	Working Days	Salary	Paid
mahesh	1000.0	1.0	1000.0	<input type="checkbox"/>
mani	900.0	1.5	1350.0	<input type="checkbox"/>
radha	1500.0	0.5	750.0	<input type="checkbox"/>
ram	1000.0	2.0	2000.0	<input type="checkbox"/>
rani	800.0	1.0	800.0	<input type="checkbox"/>
robin	700.0	1.0	700.0	<input type="checkbox"/>

Done

Done

USER INTERFACES

REPORT

First Date:- **2023-11-01** 2 To End Date:- **2024-04-22** 2

Done

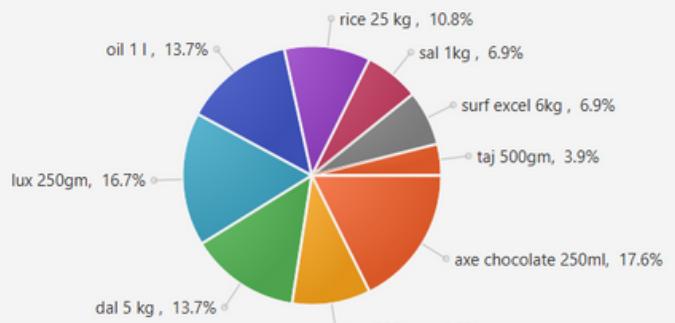
Product Name	Qnt Available	Opening	Purchased	Sold
axe chocolate 250ml	2.0	0.0	18.0	18.0
bru 200gm	15.0	0.0	10.0	10.0
dal 5 kg	11.0	0.0	14.0	14.0
lux 250gm	13.0	0.0	17.0	17.0
oil 1 l	26.0	0.0	14.0	14.0
rice 25 kg	24.0	0.0	11.0	11.0
sal 1kg	23.0	0.0	7.0	7.0
surf excel 6kg	33.0	0.0	7.0	7.0
taj 500gm	21.0	0.0	4.0	4.0
Total Products : 9	168.0	0.0	102.0	102.0

Sales
Profit
Download
Expenses
Statics

PRODUCT SALES

Total Units Sold : 9

Total Units Sold : 102.0



● axe chocolate 250ml, 17.6%	● bru 200gm , 9.8%	● dal 5 kg , 13.7%
● lux 250gm, 16.7%	● oil 1 l, 13.7%	● rice 25 kg , 10.8%
● sal 1kg , 6.9%	● surf excel 6kg , 6.9%	● taj 500gm, 3.9%

Back

OUR TEAM

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THANK YOU

