

DR. VISHWANATH KARAD MIT – WORLD PEACE UNIVERSITY

School Of Management (UG)

Bachelor Of Business Administration (Computer Application)

PROJECT REPORT

Course Code: BBC304A





Content

Sr No	Title	Page No
1.	Student Information	3
2.	Submission Deadline	4
3.	Undertaking	5
4.	Certificate	6
5.	Synopsis	7
	a. Introduction	
	b. Statement Of Problem	
	c. Scope Of Study	
	d. Need Of Study	
	e. Objectives Of Study	
	f. Functional & Non – Functional Requirements	
	g. Feasibility Study	
	h. Technology Used	
6.	Requirement Gathering	10
7.	System Design	11
	a. DFD – Context Level	
	b. Entity Relationship Diagram	
	c. Class Diagram	
	d. Use Case Diagram	
	e. Activity Diagram	
	f. Sequence Diagram	
8.	Data Dictionary	36
9.	User Interface Design	38
10.	Business Logic	51
11.	Additional Features Implemented	52
12.	Future Enhancements	53

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Student Information

Sr No	Particulars	Details
1.	Student's Name	Mohit Rajendra Mhamunkar
		Ankita Chaudhary
2.	Student's Roll No	49
		20
3.	Guide's Name	Prof. Sudeepta Bannerjee
4.	Programme Name	Bachelor Of Business Administration
		(Computer Application)
5.	Trimester	07
6.	Course Code	BBC304A
7.	Project Title	POS Management For Café & Restaurant

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Submission Deadline

Sr No	Particulars	Date Of Submission	Remarks	Signature
1.	Synopsis	29th August 2020		
2.	Requirement Gathering	2 nd September 2020		
3.	System Design	6 th September 2020		
4.	User Interface Design	12 th September 2020		
5.	Internal Evaluation	5 th October 2020		
6.	External Evaluation	20 th October 2020		

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
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Undertaking

I declare that the work presented in this project titled "POS Management System For Café & Restaurants", submitted to BBA-(Computer Applications) Department, School Of Management (UG), MIT World Peace University, Pune for the award of Bachelor of Business Administration in Computer Applications degree, is our original work. I have not plagiarized or submitted the same work for the award of any other degree. In case this undertaking is found incorrect, I accept my degree may be unconditionally withdrawn.

Date: 5th October 2020

Name: Ankita Chaudhary

Name: Mohit Rajendra Mhamunkar

Signature:

Signature:

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Certificate

This is to certify that Mr. Mohit Rajendra Mhamunkar and Ms. Ankita Chaudhary of BBA-(Computer Applications) Department, School Of Management (UG), MIT World Peace University, Pune has successfully completed the project work titled "POS Management System For Café & Restaurants", in partial fulfilment of requirement for the completion of BBA-(Computer Applications) course as prescribed by the University. The project report is the record of authentic work carried out by him/her during the period from August 2020 to October 2020. He/She has worked under my guidance.

a:	a:
Signature:	Signature:

Name: Prof. Sudeepta Bannerjee

Project Guide (Internal)
Date: 5th October 2020

_

Name: Prof. Vinaya Nimbolkar

Course In-charge

Date:

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
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Synopsis

Introduction:-

The project is aimed at developing a standalone application to facilitate Sales Division of Cafes & Restaurants and to simplify the process of billing. The system can be accessed by the Employee and the administrator of the system with proper login.

The system administrator has full control over the system, while the employee has been provided partial features like Customer Registration, Billing, etc. The sole purpose of the following system is to make POS (Point Of Sales) procedure simple & quick.

Statement Of Problem:-

In most of the café & small-scale restaurants the billing process is still happening offline or through coupon generation machines which makes it difficult for Hoteliers to keep a track of sales. The creation of reports is also a difficult task as all the components are offline. All the updates required in POS are done manually which increases the expenditure of the cafés & restaurants in sense of time, manpower, and finance.

Scope Of Study:-

The proposed system is developed considering the following scope

- 1. The system can store information of all the employees, customers, food items, taxes.
- 2. The employee is provided with the following features:
 - a. Registration of a new customer.
 - b. Generation of bill.
 - d. Generation of daily report of sales.
- 3. The admin is provided with the following features:
 - a. Registration, Deletion, And Record of customers.
 - b. Registration, Deletion, And Record of employees.
 - c. Registration, Deletion, And Record of items (Food Items).
 - c. Generation of bill.
 - d. Updation & Deletion of taxes.
 - e. Generation of periodic, monthly, and master report of sales.

Need Of Study:-

The old paper based or coupon-based billing system had various drawbacks since the whole system was maintained manually. The process of generating bills was tedious and lengthy. The information of customers wasn't stored and hence couldn't target them for marketing purposes. It was difficult to keep a track of multiple employees and the bills generated by them. It was a tedious process as all the reports were generated manually and had errors due to loss of documents.

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
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Objectives Of Study:-

- 1. To maintain details of employees, customers, items, bills, and taxes.
- 2. To build a software to reduce manual work the goes in managing POS activities.
- 3. To centralize all the data in a single location.

Functional & Non – Functional Requirements:-

- 1. Functional
 - a. The admin can register employees after filling their details.
 - b. The admin can add items after filling their details, and delete those items as well.
 - c. The admin can register, view, and delete taxes.
 - d. Admin, Employee can register new customer after filling their details, only admin can delete the customers.
 - e. Admin, Employee can generate bills.
 - f. Employee can generate daily report. The admin has extra features of generating master, monthly & periodic report.
 - g. Admin & Employee have personalized Dashboard with user displayed on it.

2. Non – Functional-

- a. Secure access to Dashboard using username & password.
- b. Date & Time added to Dashboard for convenience.
- c. Admin & Employee have logout option.

Feasibility Study:-

Feasibility Study includes the considerations of all possible ways to provide a solution to the given problem statement.

- a. Economic Feasibility-
 - ♣ All the hardware and software should be economical and can be easily borne by the organizations.
 - The organization will overcome the initial costs required in keeping track of employees and looking After POS system for any café or restaurant.
 - ♣ The system won't require heavy technology hence will be pocket friendly for the cafes & restaurants.
- b. Technical Feasibility-
 - → This included the study of function, performance, and constraints that may affect the ability to achieve an acceptable system.
 - ♣ To check if everything was possible using different types of frontend and backend platforms known.
 - The system is designed and developed in such a way that it takes less storage and can execute on a minimal device.
- c. Operational Feasibility-
 - → The system should be easy to use by the café & restaurants and must be user friendly and self-explanatory.

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Roll No:	49, 20
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♣ The Administrator & Employees will be provided with proper hands on training of the system which will make it easier for them to use it with ease.

Technology Used:-

♣ Front End Technology: C# (.NET Framework)

♣ Back End Technology: Microsoft Access

↓ IDE Used: Visual Studio 2019 (Version 16.7.1)

♣ Operating System: Windows 10

♣ Computer Processor: Intel Core i5 7th Generation

♣ Hard Disk: 10 GB

♣ RAM: 4 GB

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Roll No:	49, 20
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Requirement Gathering

This document describes the requirement for the POS (Point Of Sales) Management System that will meet the current requirements of hospitality industry and offer significant improvement by adding real time processing, robust reporting and improved billing process experience.

The mode of requirement gathering for the system under study was **personal interview, research and observation.** The outcome of the requirement gatherings are as follows:-

- ♣ The system should allow administrator/owner to add multiple employees/users efficiently.
- **♣** The system should be interactive and intuitive.
- ♣ The system should incorporate cool colours in it's UI for comfortable and long working hours.
- ♣ The system should be able to generate bills without hustle.
- ♣ The system should have limit on number of items in the bill (50 items).
- ♣ The system should be able to give customer specific discounts.
- ♣ The system should be able to add and remove items (Food Items).
- ♣ The system should be able to print bills.
- **4** The system should be able to generate and print Daily reports for the Employees.
- ♣ The system should be able to generate and print Master, Monthly & Periodic reports for the Admin for analysis.

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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





System Design

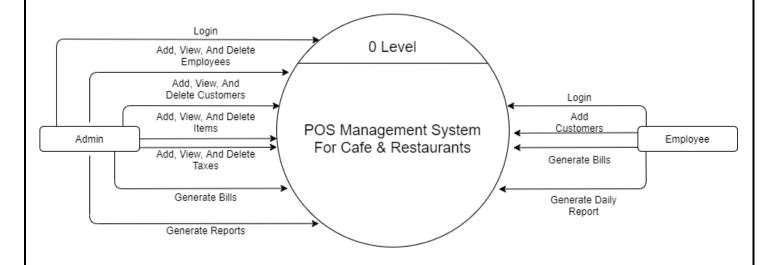
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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





DFD – Context Level

Context Level DFD

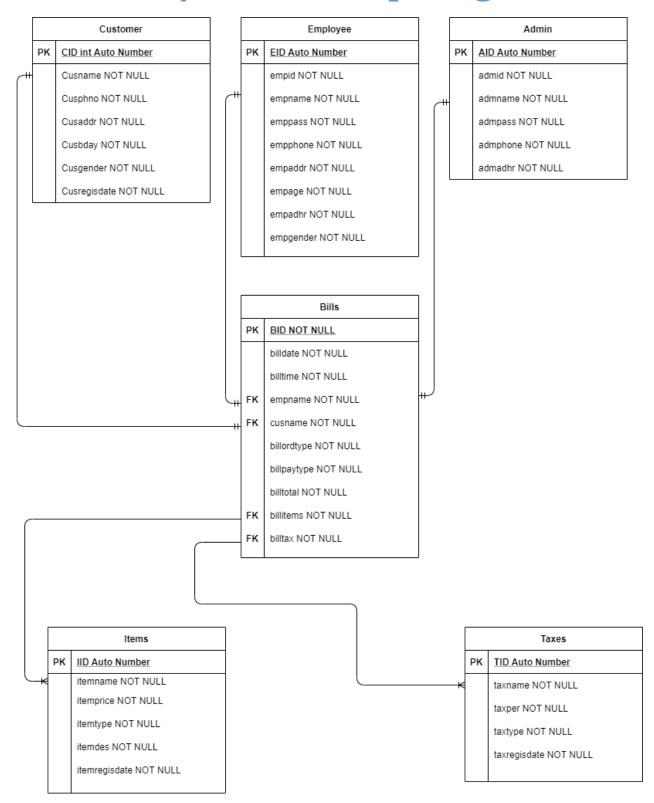


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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Entity Relationship Diagram

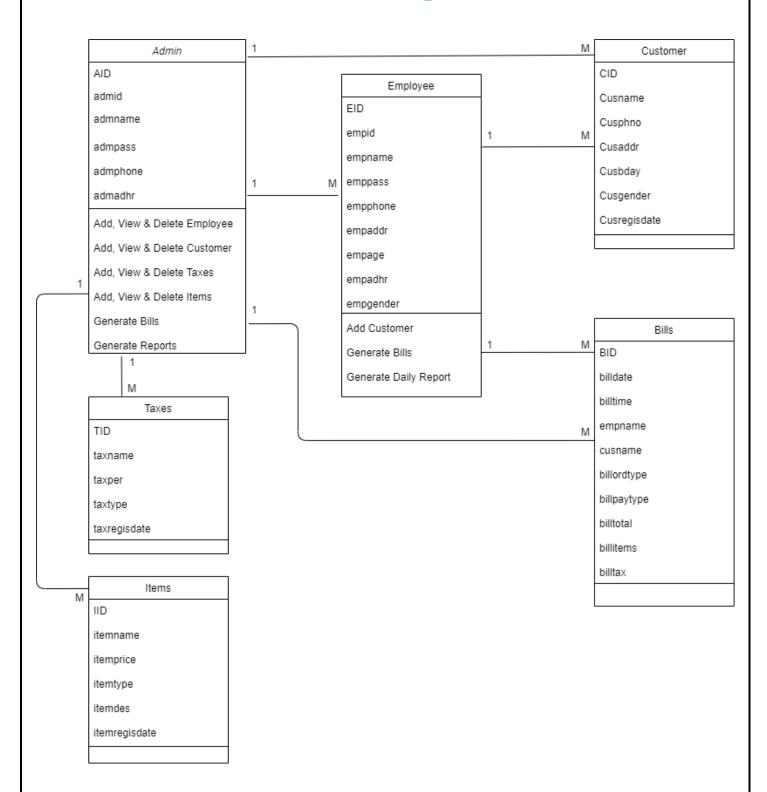


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Roll No:	49, 20
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Class Diagram

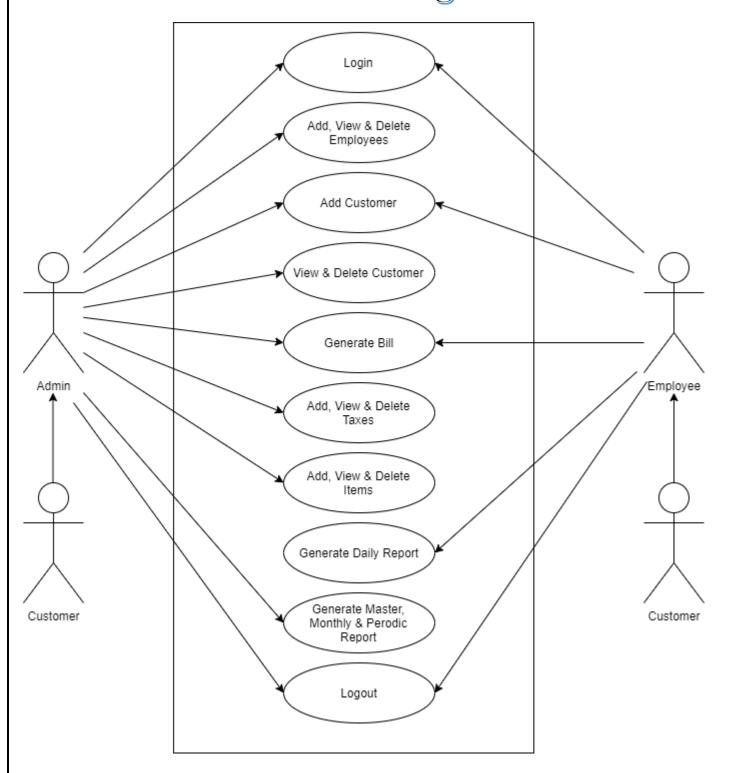


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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Use Case Diagram



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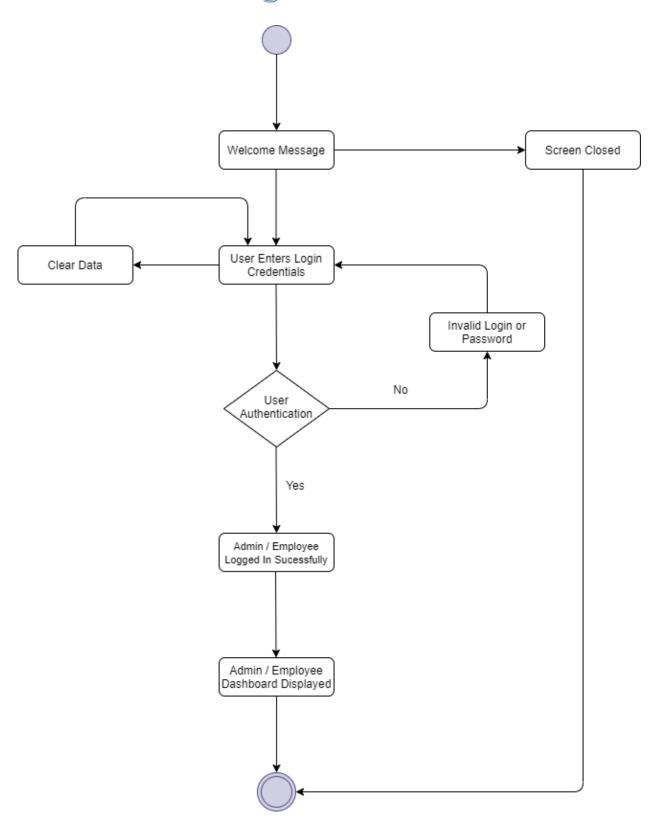
Activity Diagram

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Roll No:	49, 20
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Login Form

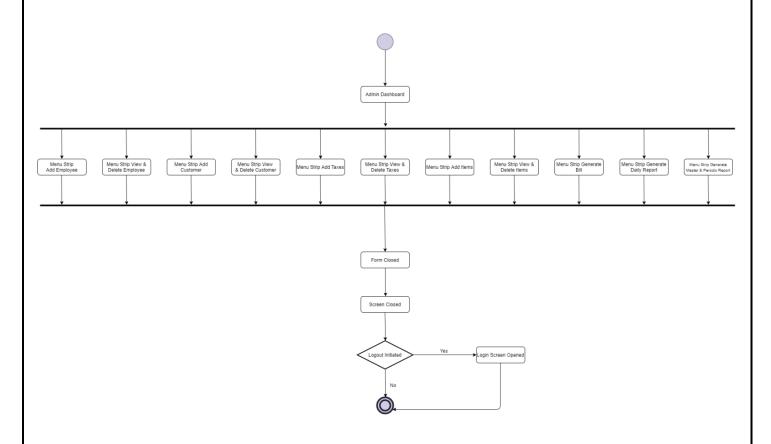


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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Admin Dashboard

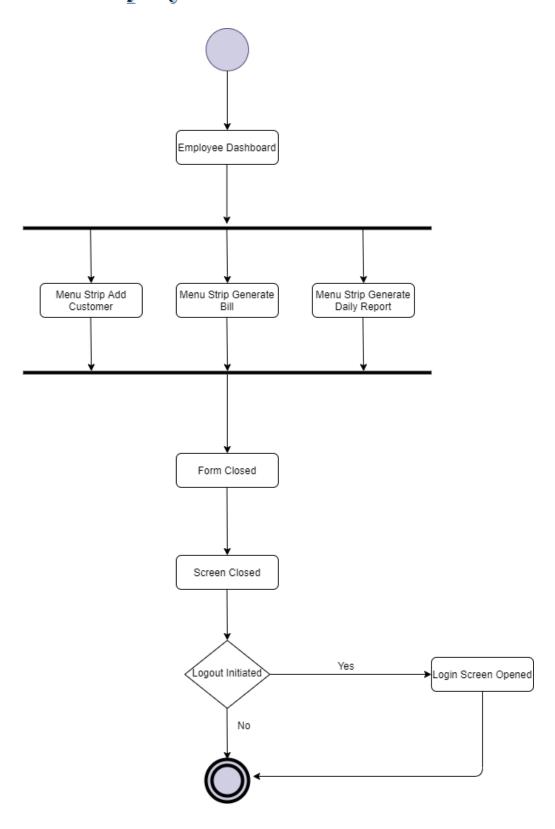


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Roll No:	49, 20
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Employee Dashboard

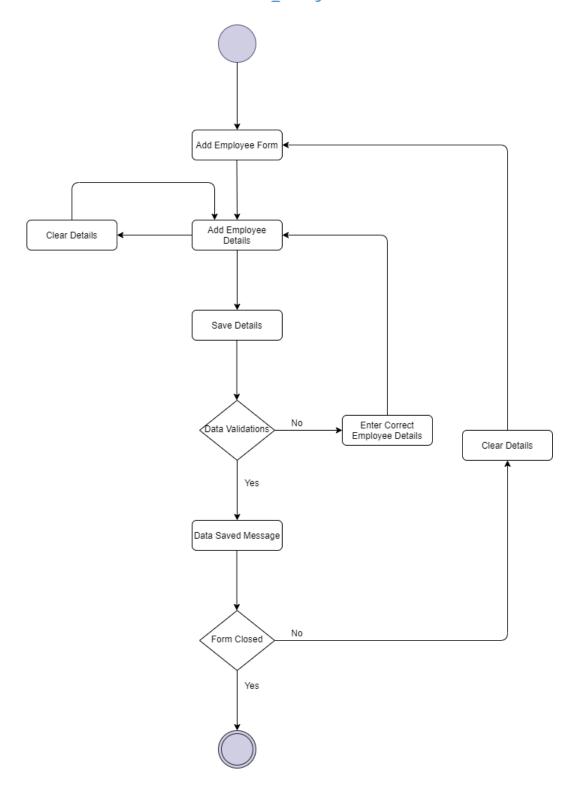


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Add Employee

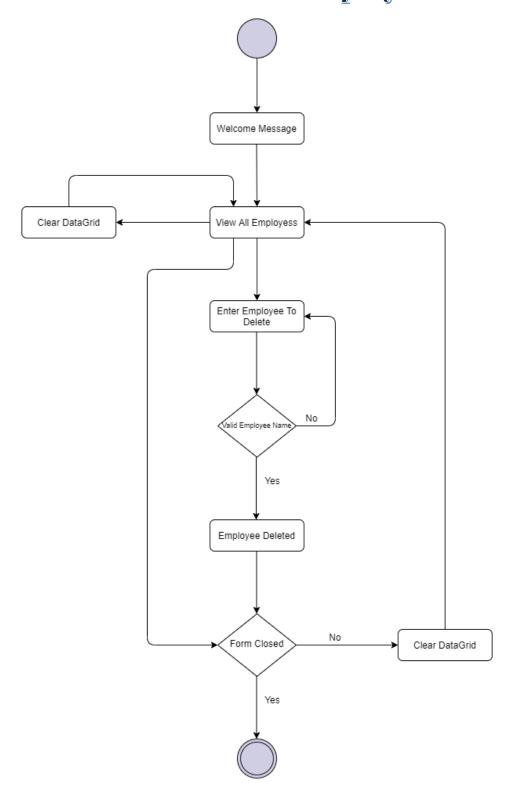


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View & Delete Employee

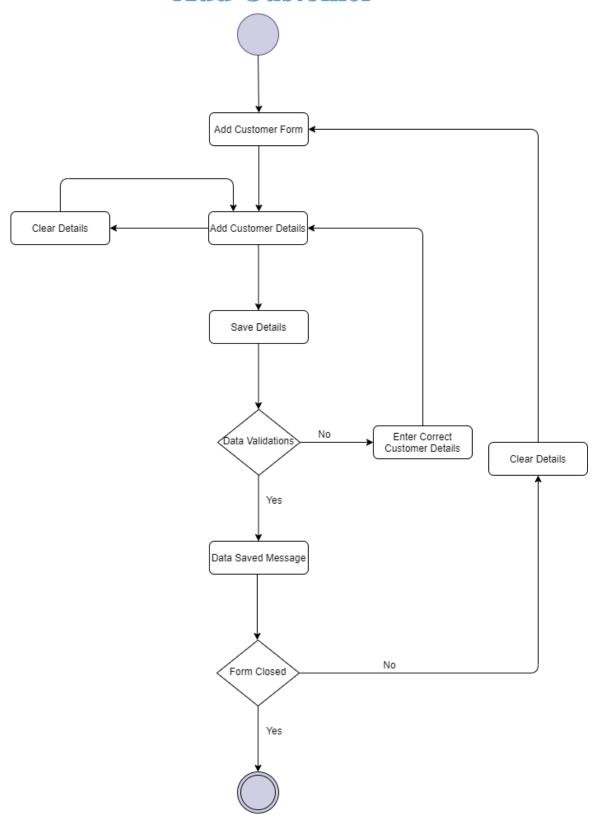


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Add Customer

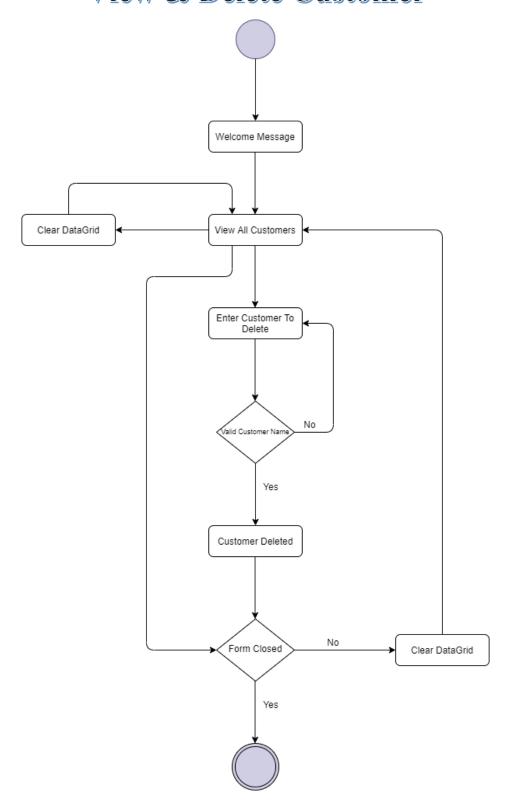


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View & Delete Customer

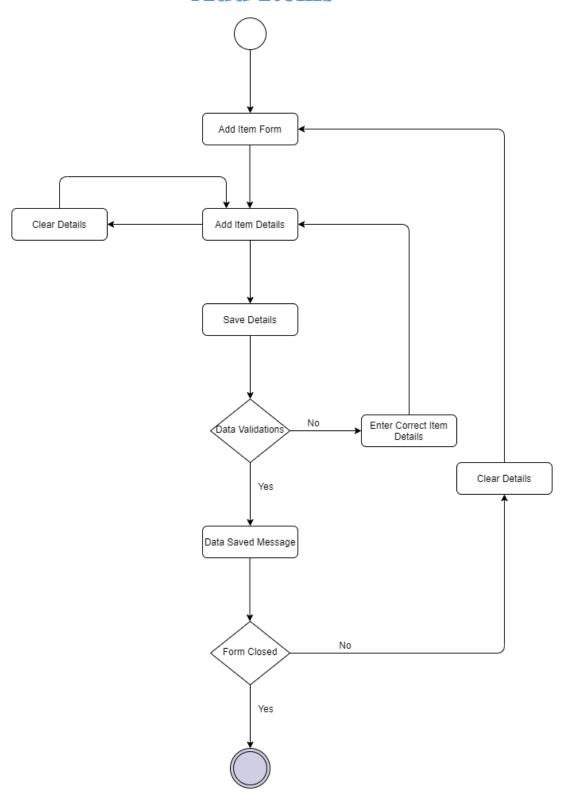


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Add Items

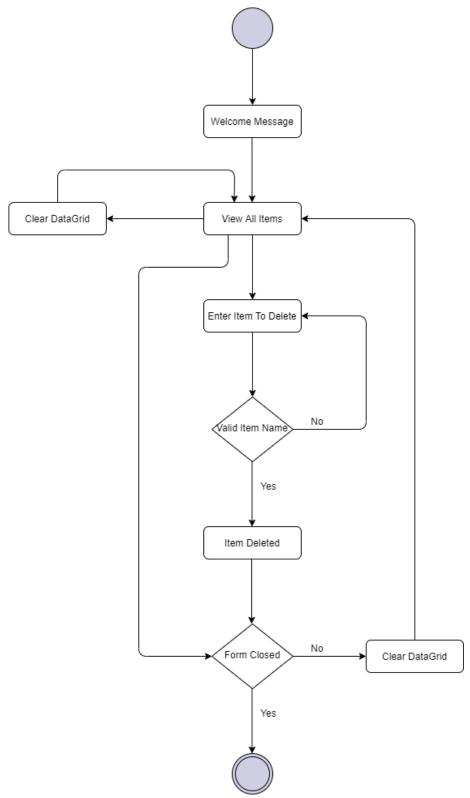


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View & Delete Items

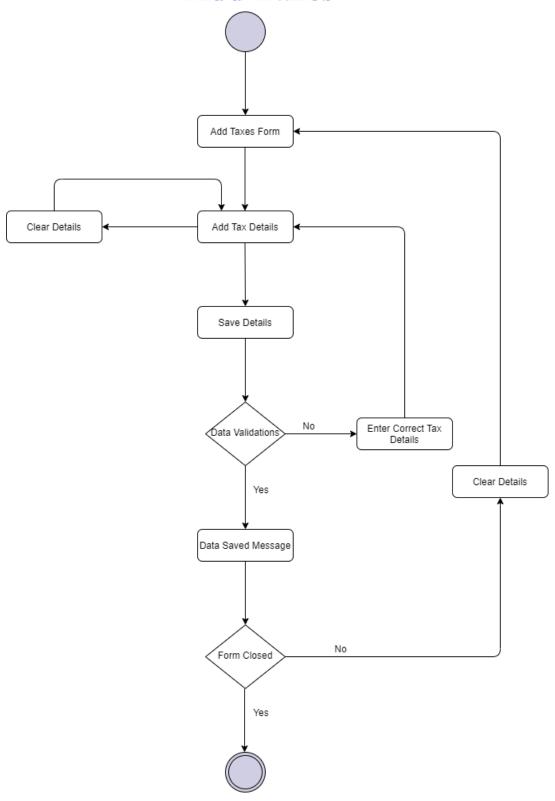


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Add Taxes

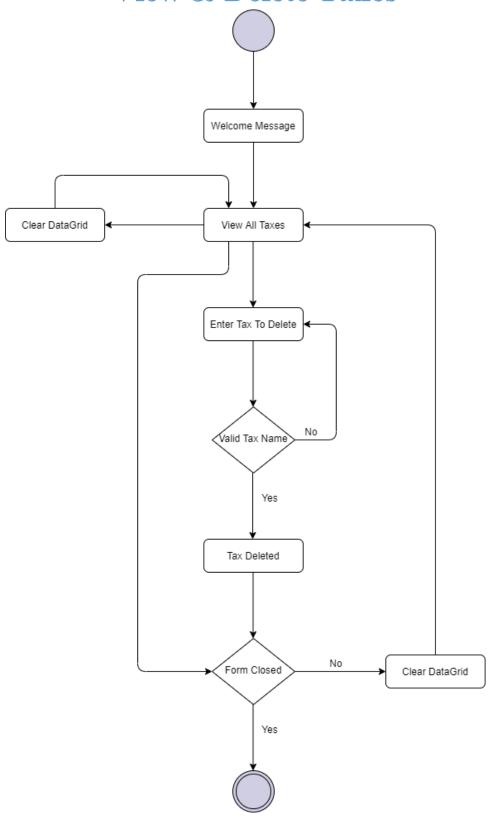


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View & Delete Taxes

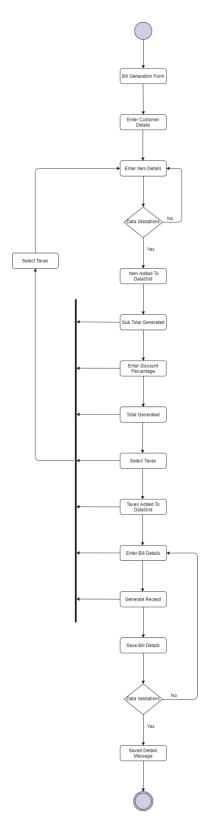


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Roll No:	49, 20
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Bill Generation

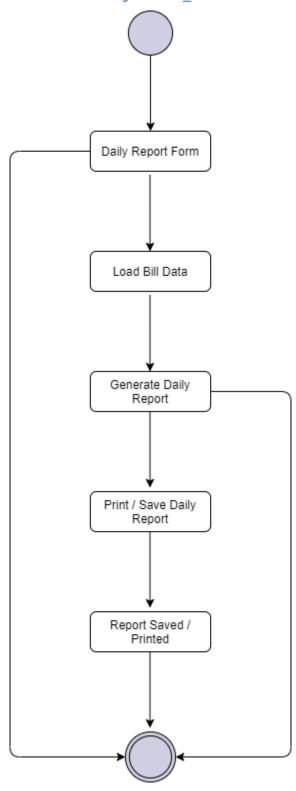


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Roll No:	49, 20
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Daily Report

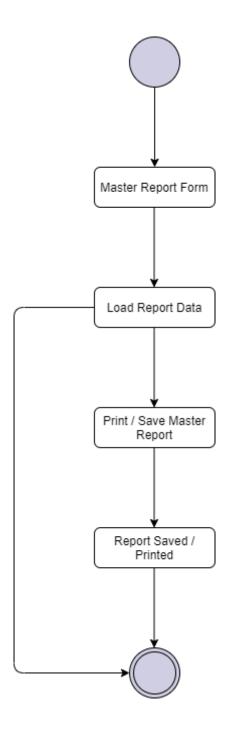


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Master Report

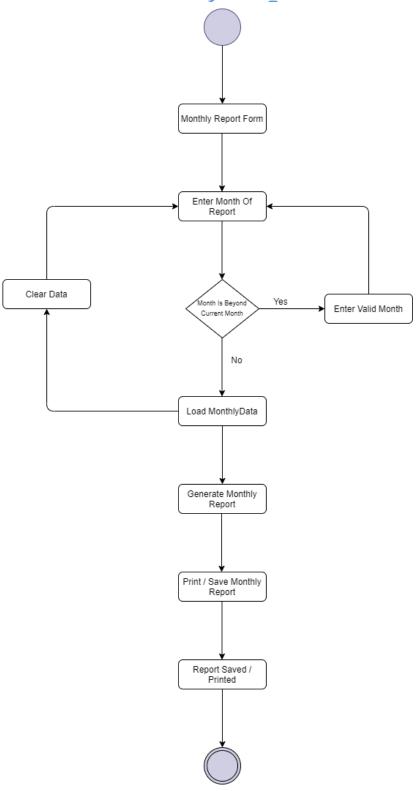


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Monthly Report

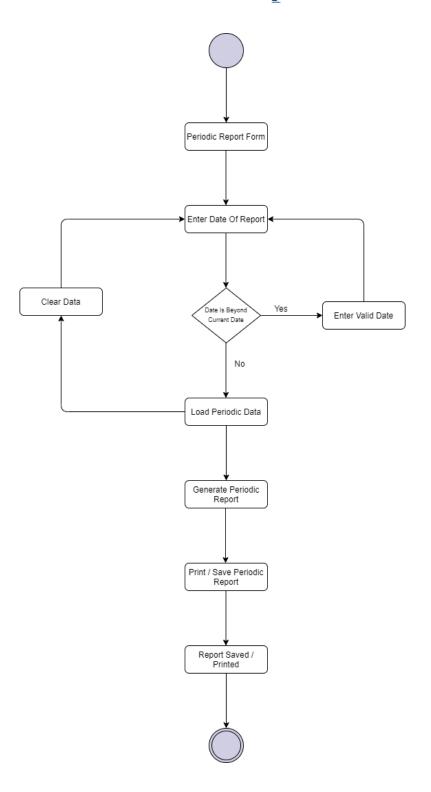


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Periodic Report

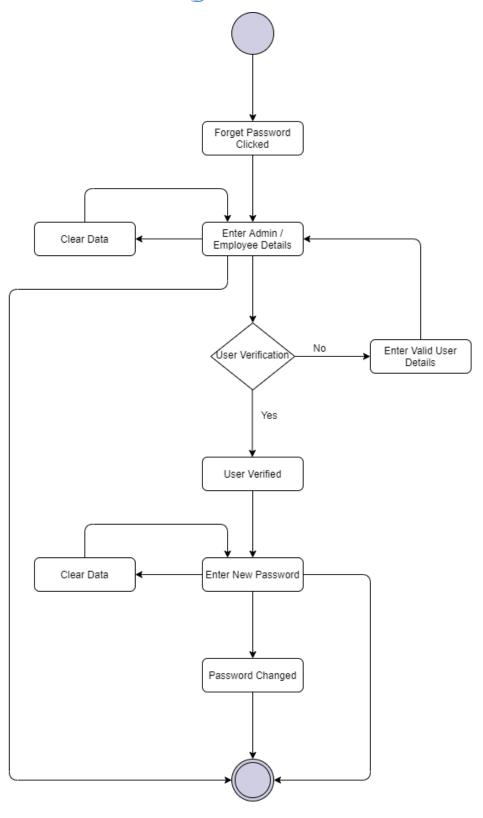


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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





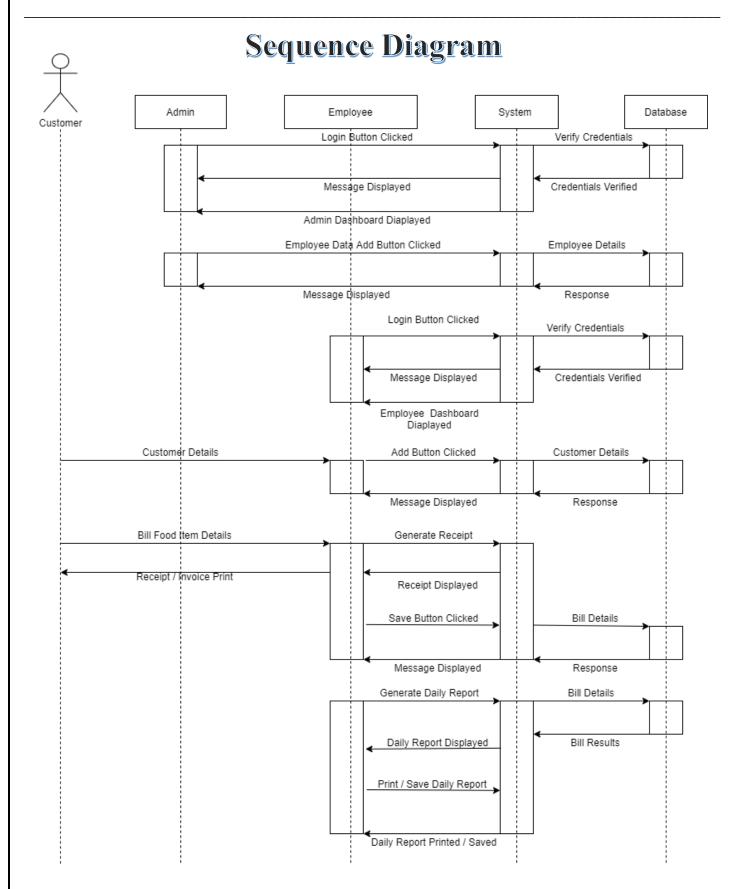
Forget Password



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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant



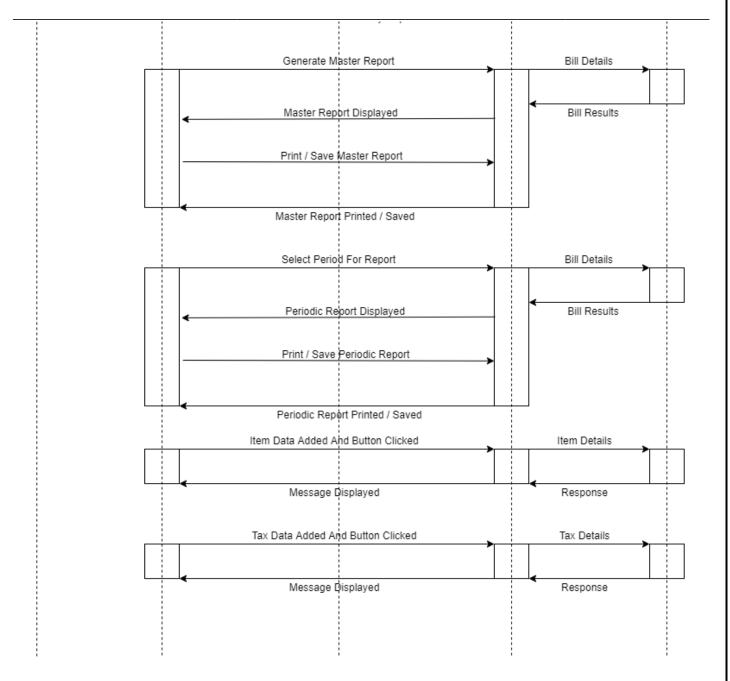




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Data Dictionary

Table	Attributes	Datatype	Contraints	Control	Validations	Description
		Auto	Primary		Unique & Auto	
	AID	Number	Key	None	Increment	Admin Primary Key
	admid	Short Text	None	None	Non Empty	Admin User ID
Admin	admname	Long Text	None	None	Non Empty	Admin Name
	admpass	Short Text	None	None	Non Empty	Admin Password
					Non Empty & 10	
	admphone	Long Text	None	None	Digits	Admin Phone Number
	admadhr	Short Text	None	None	Non-Empty	Admin Adhaar Number

Table	Attributes	Datatype	Constraints	Control	Validations	Description
		Auto	Primary		Unique & Auto	
	EID	Number	Key	None	Number	Employee Primary Key
		Short				
	empid	Text	None	Text Box	Non Empty	Employee User ID
	empname	Long Text	None	Text Box	Non Empty	Employee Name
		Short				
	emppass	Text	None	Text Box	Non Empty	Employee Password
Employee					Non Empty & 10	
	empphone	Long Text	None	Text Box	Digits	Employee Phone Number
	empaddr	Long Text	None	Text Box	Non Empty	Employee Address
	empage	Number	None	Text Box	Non Empty	Employee Age
		Short			Non Empty & 12	
	empadhr	Text	None	Text Box	Digits	Employee Adhaar Number
		Short		Radio		
	empgendr	Text	None	Button	Non Empty	Employee Gender

Table	Attributes	Datatype	Constraints	Control	Validations	Description
		Auto	Primary		Unique & Auto	
	CID	Number	Key	None	Generated	Customer Primary Key
	Cusname	Long Text	None	Text Box	Non Empty	Customer Name
		Short			Non Empty & 10	
	Cusphno	Text	None	Text Box	Digits	Customer Phone Number
Customer	Cusaddr	Long Text	None	Text Box	Non Empty	Customer Address
Customer		Short		Combo		
	Cusbday	Text	None	Box	Non Empty	Customer Birthday & Month
		Short		Radio		
	Cusgender	Text	None	Button	Non Empty	Customer Gender
		Short				
	Cusregisdate	Text	None	None	None	Customer Registration Date

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Roll No:	49, 20			
Project Title:	POS Management System For Café & Restaurant			





Table	Attributes	Datatype	Constraints	Control	Validations	Description
		Auto	Primary		Unique & Auto	
	TID	Number	Key	None	Generated	Tax Primary Key
		Short				
	taxname	Text	None	Text Box	Non Empty	Tax Name
Toyos		Short				
Taxes	taxper	Text	None	Text Box	Non Empty	Tax Percentage
		Short		Combo		
	taxtype	Text	None	Box	Non Empty	Tax Type
		Short				
	taxregisdate	Text	None	None	None	Tax Registration Date

Table	Attributes	Datatype	Constraints	Control	Validations	Description
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	IID	Number	Key	None	Generated	Item Primary Key
		Short			Non Empty & 20	
	itemname	Text	None	Text Box	Char	Item Name
					Non Empty & Non	
Itoms	itemprice	Currency	None	Text Box	Negative	Item Price
Items		Short		Combo		
	itemtype	Text	None	Box	Non Empty	Item Type
				Rich Text		
	itemdes	Long Text	None	Box	Non Empty	Item Description
		Short				
	itemregisdate	Text	None	None	None	Item Registration Date

Table	Attributes	Datatype	Constraints	Control	Validations	Description
			Primary			
	BID	Short Text	Key	Text Box	Unique	Bill Primary Key
	billdate	Short Text	None	None	Non Empty	Bill Generation Date
	billtime	Short Text	None	None	Non Empty	Bill Generation Time
	billmonth	Short Text	None	None	None	Bill Generation Month
	empname	Short Text	None	None	Non Empty	Employee Generating Bill
	cusname	Short Text	None	Text Box	Non Empty	Customer Name
Bills				Combo		
DIIIS	billordtype	Short Text	None	Вох	Non Empty	Bill Order Type
				Combo		
	billpaytype	Short Text	None	Вох	Non Empty	Bill Payment Type
	billtotal	Currency	None	Text Box	Auto Generated	Bill Grand Total Amount (₹)
				Data Grid		
	billitems	Long Text	None	View	Non Empty	Bill Items
				Data Grid		
	billtax	Long Text	None	View	Non Empty	Bill Taxes

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Roll No:	49, 20
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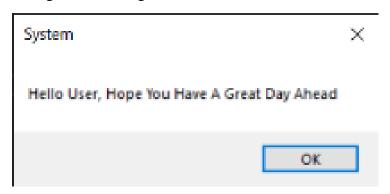
User Interface Design

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Roll No:	49, 20
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1. Login Form Design





2. Admin Dashboard Form Design



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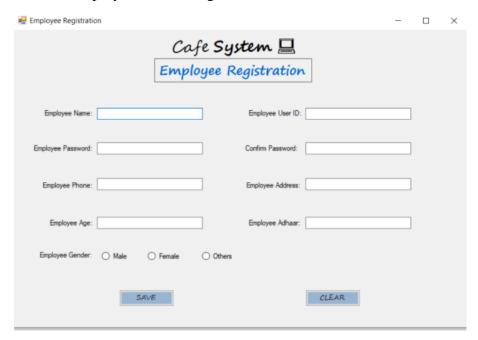




3. Employee Dashboard Form Design



4. Insert Employee Form Design



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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant



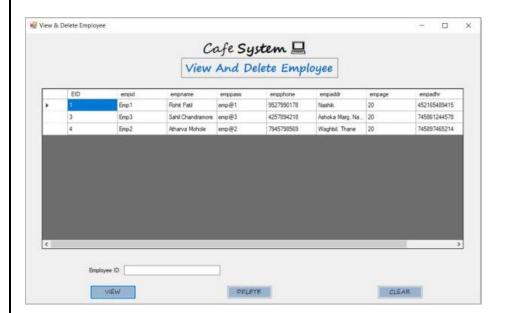


5. View & Delete Employee Form Design

Message X

Ready To View Employee Database





6. Insert Customer Form Design

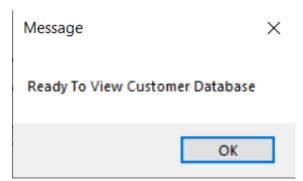


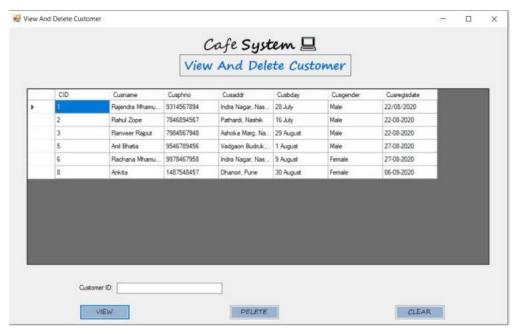
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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





7. View & Delete Customer Form Design



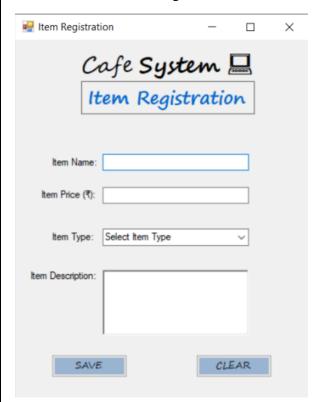


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Roll No:	49, 20
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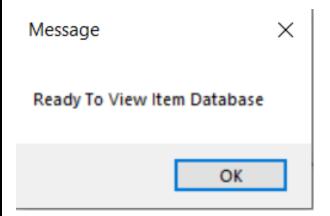




8. Insert Item Form Design



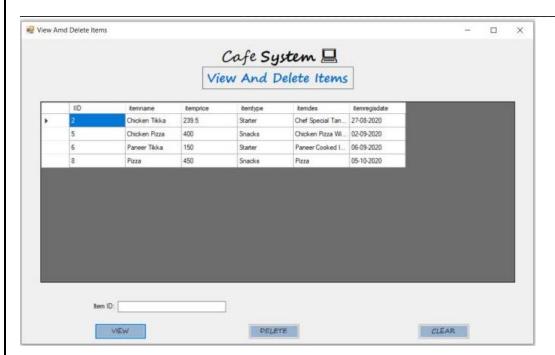
9. View & Delete Item Form Design



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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant







10. Insert Tax Form Design

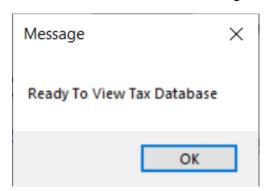


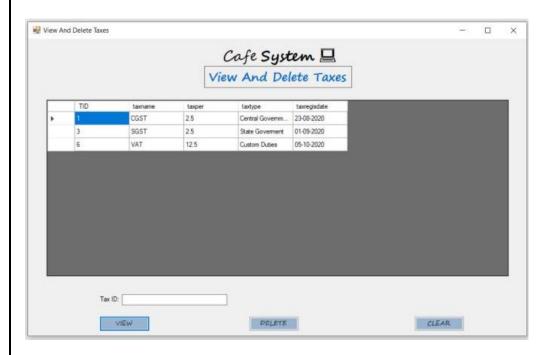
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Project Title:	POS Management System For Café & Restaurant





11. View & Delete Tax Form Design



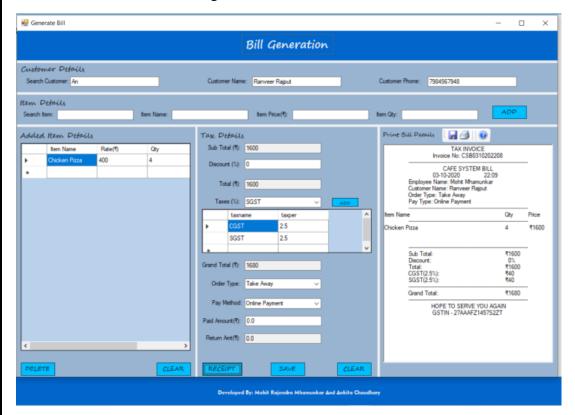


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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant

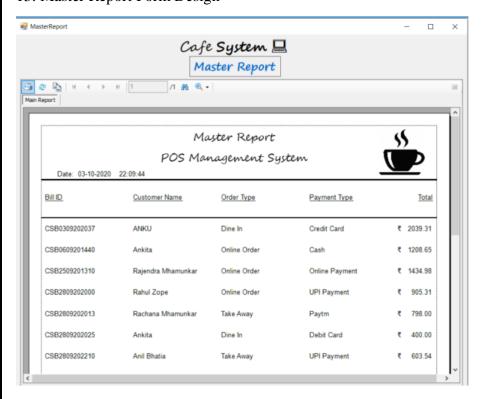




12. Bill Generation Form Design



13. Master Report Form Design

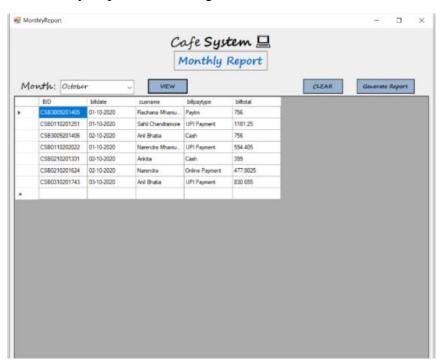


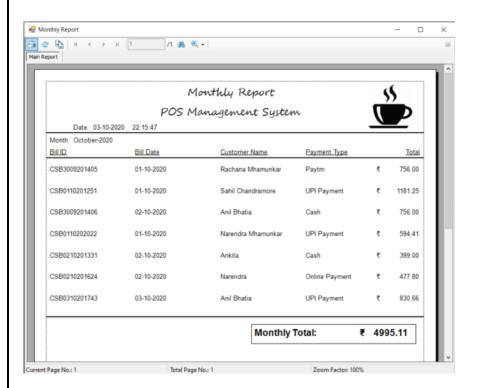
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Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





14. Monthly Report Form Design



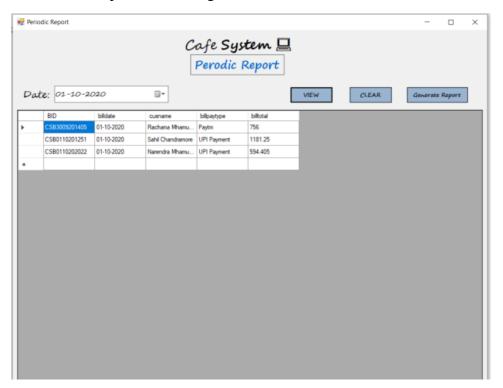


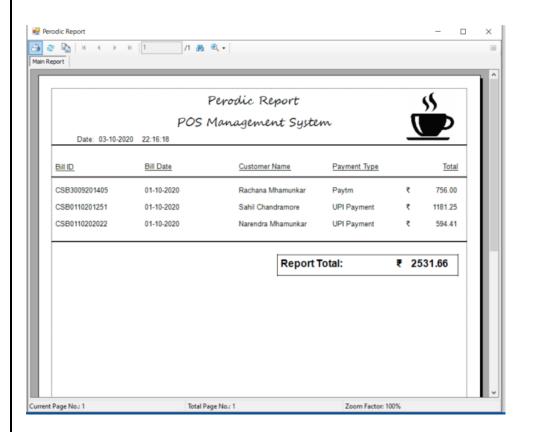
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15. Periodic Report Form Design



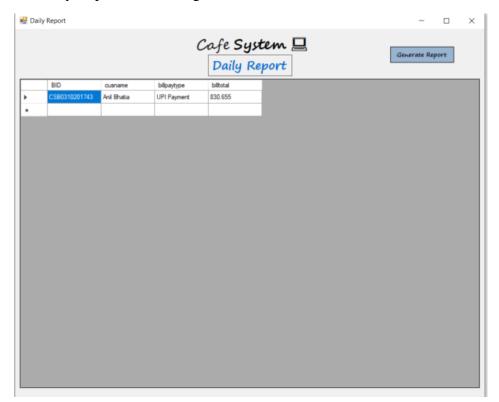


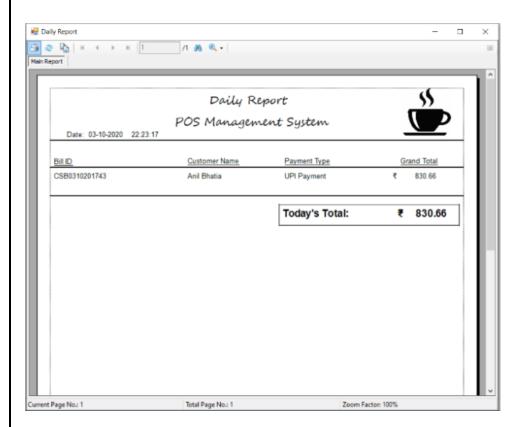
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16. Daily Report Form Design





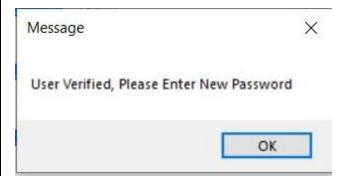
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17. Forget Password







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Business Logic

The business logic for this application is to generate enormous revenues through the following channels:-

- 1. Subscription Fee For Restaurants & Cafes.
- 2. Charges For Software Maintenance And Upgrades.
- 3. Advertisements Through Server Implementation.
- 4. Competition To Outdated Billing Systems.
- 5. Tie Up With MNC's For Larger Targeted Market.

The project aims at creating awareness of modern technological advancements and availability in field of hospitality where small & medium scale restaurants & cafes struggle to use advance technologies due to it's hefty charges.

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Roll No:	49, 20
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Additional Features Implemented

The additional features implemented are as follows:-

- ♣ Admin can delete employees, customers, items, taxes from their end.
- ♣ Detailed Master. Periodic, Monthly and Daily Reports are provided.
- ♣ Current date & time sections are added in Dashboard for Admin and Employee convenience.
- Admin & Employee can save any bill receipt generated.
- Admin can save Master, Monthly and Periodic Reports as pdf.
- Employee can save Daily Report as pdf.
- Reports are designed with café name and logo, with time generation details.
- **♣** Customer birthday is stored to use further for marketing purposes.
- Search options for customers and items section in billing form.
- Forget Password option for Admin and Employee.

Name:	Mohit Rajendra Mhamunkar, Ankita Chaudhary
Roll No:	49, 20
Project Title:	POS Management System For Café & Restaurant





Future Enhancements

As this is an infant level project it has limited functionalities, the future enhancements however will be integrating additional features into the project to make it more user friendly, some of them are as follows:-

- Functionalities for storing inventory information will also be added.
- ♣ To implement the application for web and android platforms for more versatility and robustness.
- Minor bugs and errors will be fixed in the future.
- ↓ Implementation of web-based form of the applications opens new opportunities in field
 of advertisements, PPC & Social Media Marketing implementations, cloud-based
 storage, etc.
- ♣ Implementation of ordering systems and connectivity to delivery players like Zomato & Swiggy.
- **♣** Addition of Payment system connectivity.
- ♣ Reporting mechanism will be more detailed with use of data analytics.
- Database mechanism will be more secured and robust.
- ♣ Introduction of biometrics for secure login.
- Addition of attendance and salary generation tools.
- Addition of loyalty tools.
- Making availability in form of software and terminals.

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