



A

PROJECT REPORT

ON

“INVENTORY MANAGEMENT SYSTEM”

SUBMITTED

TO

SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

FOR THE AWARD OF

MASTER OF COMPUTER APPLICATION

(MCA-III, SEM.-V)

BY

SHIVANI SANTOSH JADHAV

UNDER THE GUIDANCE OF

PROF. NAVNATH CHOUDHARI SIR.

THROUGH

THE DIRECTOR

**SINHGAD INSTITUTE OF MANAGEMENT AND COMPUTER APPLICATION (SIMCA),
NARHE, PUNE
(AY. 2021-2022)**



**SINHGAD TECHNICAL EDUCATION SOCIETY'S
SINHGAD INSTITUTE OF
MANAGEMENT & COMPUTER
APPLICATION**



(Affiliated to Savitribai Phule Pune University & Approved by
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'NAAC' Accredited with 'A' Grade

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CERTIFICATE

This is to certify that, the project entitled **"Inventory Management System"**, being submitted for the award of the degree of **Master of Computer Application** by her to **Sinhgad Institute of Management and Computer Application** affiliated to **Savitribai Phule Pune University, Pune** is the result of the original work completed by **Shivani Santosh Jadhav** under the guidance of **Prof Navnath Choudhari sir.**

To the best of our knowledge and belief, this work has not been previously submitted by the award of any degree or diploma of Savitribai Phule Pune University or any other University.

PLACE:

DATE:

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Choudhari**

Dr. Rajesh Gawali

Dr. Vilas Nandavadekar

Internal Guide

Project Co-Ordinator

Director SIMCA-MCA

External Examiner

DECLARATION

I, the undersigned hereby declare that the project titled “**Inventory Management System**”, being submitted for the award of degree of **Master of Computer Application** by me to **Shinhgad Institute of Management and Computer Application(SIMCA) affiliated to Savitribai Phule Pune University** is the result of an independent work carried out under the guidance of **Prof. Navnath Choudhari Sir.**, is my original work . Further I declare that this project has not been submitted to this or any Institution for the award of any degree.

PLACE: PUNE
DATE:

Student Name

(Shivani Santosh Jadhav)

ACKNOWLEDGEMENT

The project developed for the MCA was not possible without the persons and organizations that helped me in completing this. I am deeply grateful to all whose enthusiasm and energy transformed my vision of this study into reality.

I extend my sincere thanks to Mr. _____ from **Company name** for making it easy to work in the organization and providing me needed guidance throughout the project keeping it focused and on the track. I am really thankful to him for the extended knowledge imparted to me during the course of project development.

I take this opportunity to thank my guide **Prof Navnath Choudhari sir**, project coordinator **Dr. Rajesh Gawali** and our Director **Dr. Vilas Nandawadaker**, for encouragement and guidance throughout the progress of this report.

Shivani Santosh Jadhav

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Introduction

Introduction to System:-

The project titled "Inventory management System" is Inventory management software for monitoring and controlling the transactions in a Firm. The project "Inventory management System" is developed in python, which mainly focuses on basic operations in a Firm like Managing employee information, supplier information, Product and managing sales.

"Inventory management System" is a desktop application, designed to help users maintain and organize Inventory of firm. Our software is easy to use for both beginners and advanced users. It features a familiar and well thought-out, an attractive user interface, combined with strong insertion and updating capabilities.

The software "Inventory management System" has four main modules. Insertion to Database Module – User friendly input screen, Extracting from Database module – Attractive Output Screen

The "Inventory management System" has been developed to override the problem prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the Firm to carry out operations in a smooth and effective manner.

This website is very dynamic and very easy to understand, the interface of the website is very easy and anybody can easily work in our website, this website can provide all the details about Employee, supplier, sales and product and also useful for keeping track of all these categories on one Interface.

Existing System:-

The existing system is manual due to which there are complications while switching to different documents as well as generating reports. The existing system consists of the following;

- At the record are to be manually maintain it consumes lot of time.
- Lot of paper work is involved as the record is maintained in the files and register.
- As file and register are used the space requirement is increased.
- Use of paper for storing valuable data information is not all reliable.
- It is very difficult to update or maintain all records.
- The existing system forces us to do all the tasks manually via paperwork which is outdated.

Proposed System:-

Proposed system is an automated Inventory management System. Through our software Firm Owner can keep record of employee, view their information, easy to search for sales and keep track of products, update information, and edit information in quick time. Our proposed system has the following advantages.

- User friendly interface
- Fast access to database
- Less error
- Look and Feel Environment
- Quick transaction

All the manual difficulties in managing the Firm have been rectified by implementing computerization.

Scope of the System:-

It manages all the information about Employees, Sales , Products. The purpose of the project is to build an application program to reduce the manual work for managing the Firm. It tracks all the details about the Employees, Sales, Products and suppliers.

Functionalities provided by Inventory management System are as follows:

- Inventory management System Provides the different types of department and co-ordinates them to take right decisions and reduces manual work with their all information.
- Manage the information of Department.



Analysis

Fact Finding Techniques:-

Information Gathering is not an easy task. We used specific methods to collect all the relative data about the system requirement called Fact finding Techniques.

- **Interview:**

Interview is one of the better techniques for information gathering where we directly understand the needs and proposals of the user. In this case, we've taken an interview of the owner of the inventory office & collected all the information about their current modules and desired system.

- **Questionnaires:**

We had the bank of questions regarding to the tours and travels system. We collected some data about the details of the workflow via this technique.

- **Observations:-**

Observation is the best technique where we can physically attend the proposed system. It also helps us to collect the data about user's workflow, actual work & what can be enhanced. In this case, we've visited the office to get the observations.

- **Record Review :-**

At least, the analyst reviews records of the existing system which may be useful for new system. Observation provides data about how work is done, or actions are carried out.

Feasibility Study:-

Feasibility Study:-

Feasibility study carried out considering the following aspects.

a) **Economic Feasibility :-**

- It determines whether there are sufficient benefits in creating to make the cost acceptable or is the cost of the system too high so this signifies cost- benefits analysis and savings.
- We classify the cost of online service according to the type of service in which they occur.

b) **Technical Feasibility :-**

- It determines whether the work for the project can be done with the existing equipment, software technology and the available personals.
- It concerned with specifying equipment and the software that will satisfy the user equipment. This project is Feasible on technical remark also.

c) **Operational Feasibility:-**

- Operational feasibility criteria measure the urgency of the problem or the acceptability of solution. (Selection, acquisition & Design base)
- The unified modelling Language is a standard language for specifying, visualizing, constructing & documenting of the Software System.

Functional Non-Functional Requirement:-

- User should be allowed to claim their expenses related to official visits.
- System should support both domestic journeys and international journeys
- Expenses section should be categorized into two sub section as Travel Bill and Travel order.
- Order should allow a user to make ordering by employee himself and for request any advances before the tour.
- Relevant data can be entered to the system by him/herself or by a secretary
- System should cater at least 35 concurrent users.
- All the UI should be unique and running both IE and Firefox browsers.
- Support both English and Swedish languages.
- Reports are exported to different formats.
- Every caption should self explanation.

Hardware and software Requirements:-

Software Requirement:

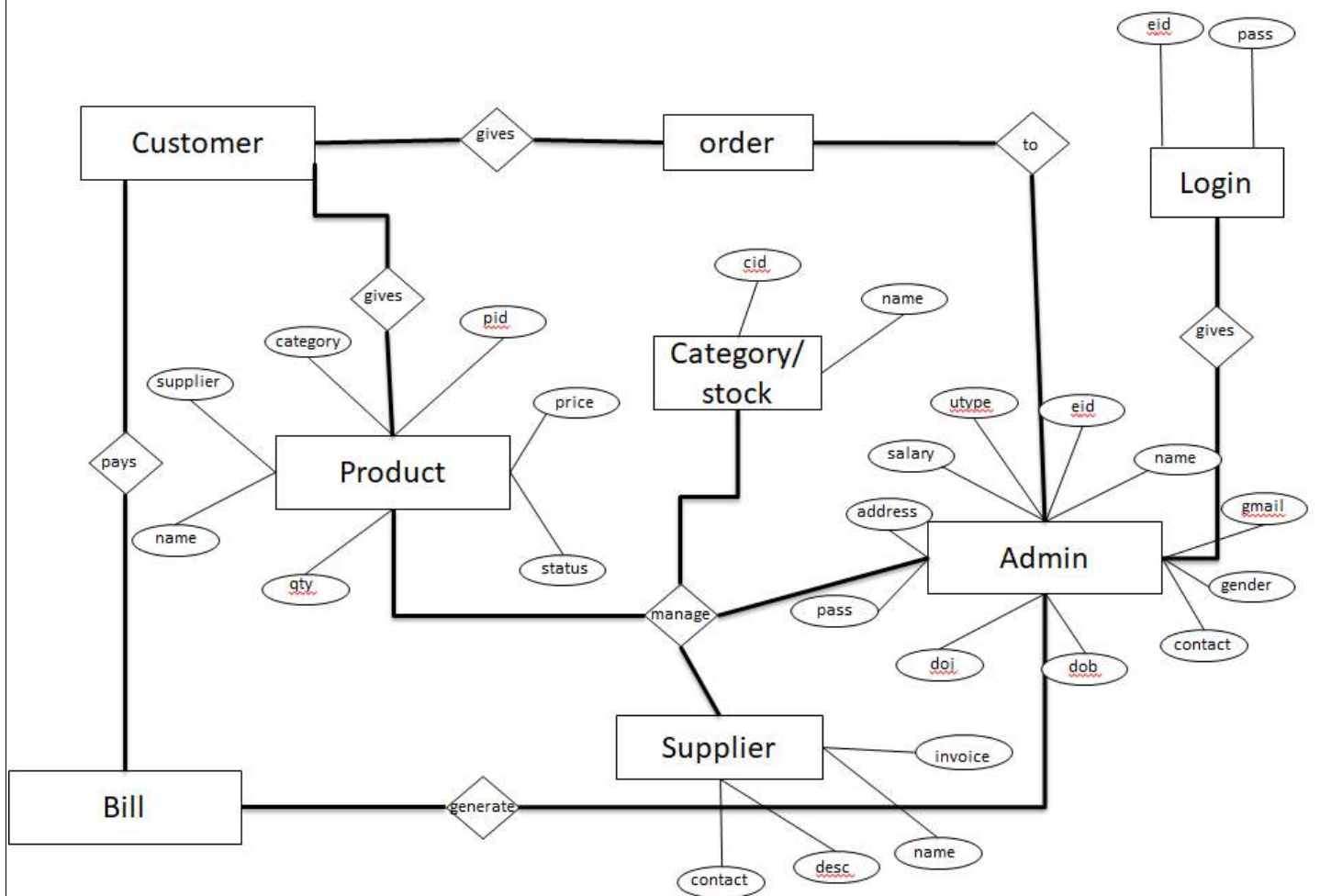
- Operating System : Windows10
- Front End : python
- Back End : SQLite

Hardware Requirement:

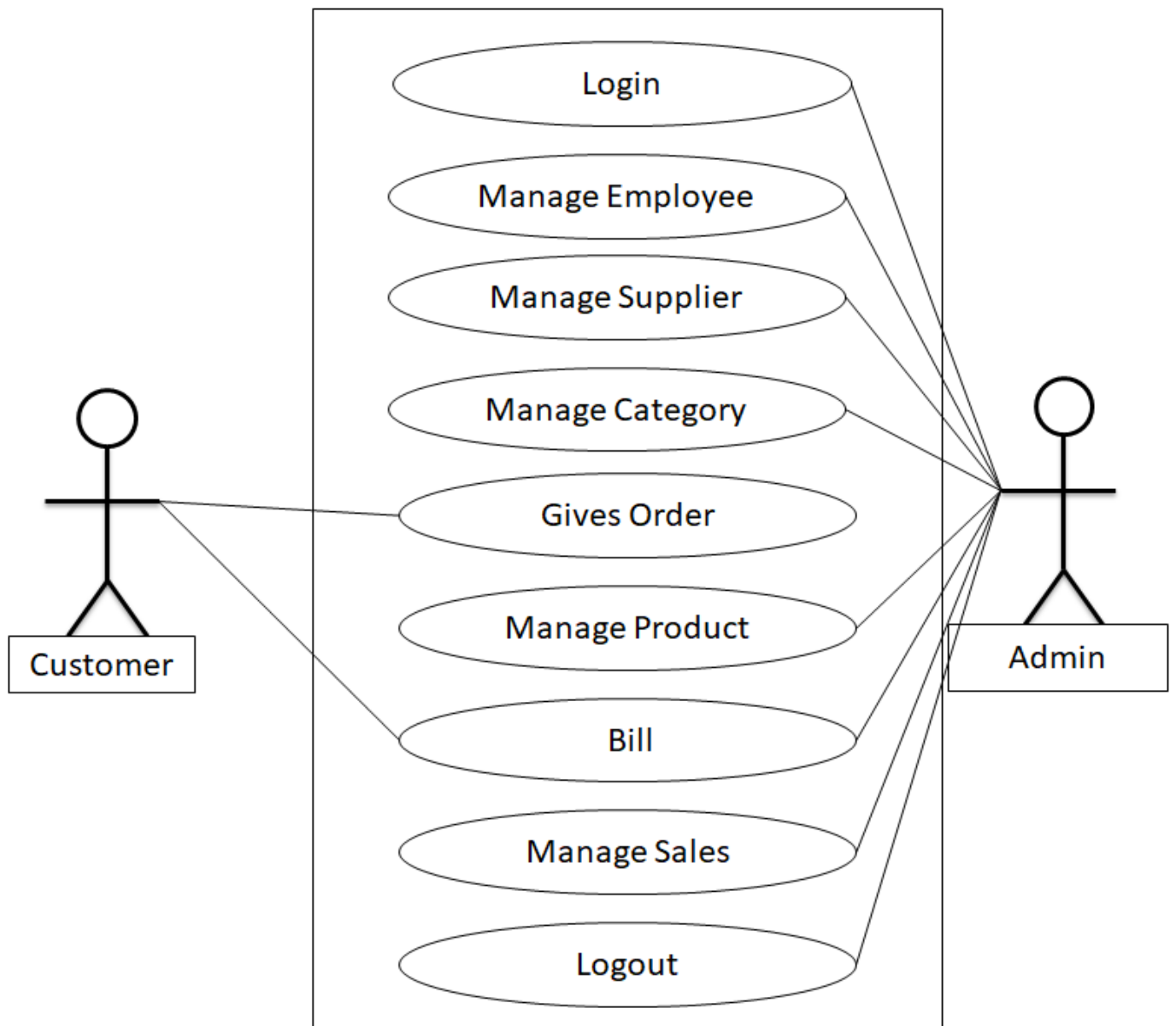
- Processor : Intel core i3
- RAM : 4GB
- Hard Disk : 500GB
- printer

System Design

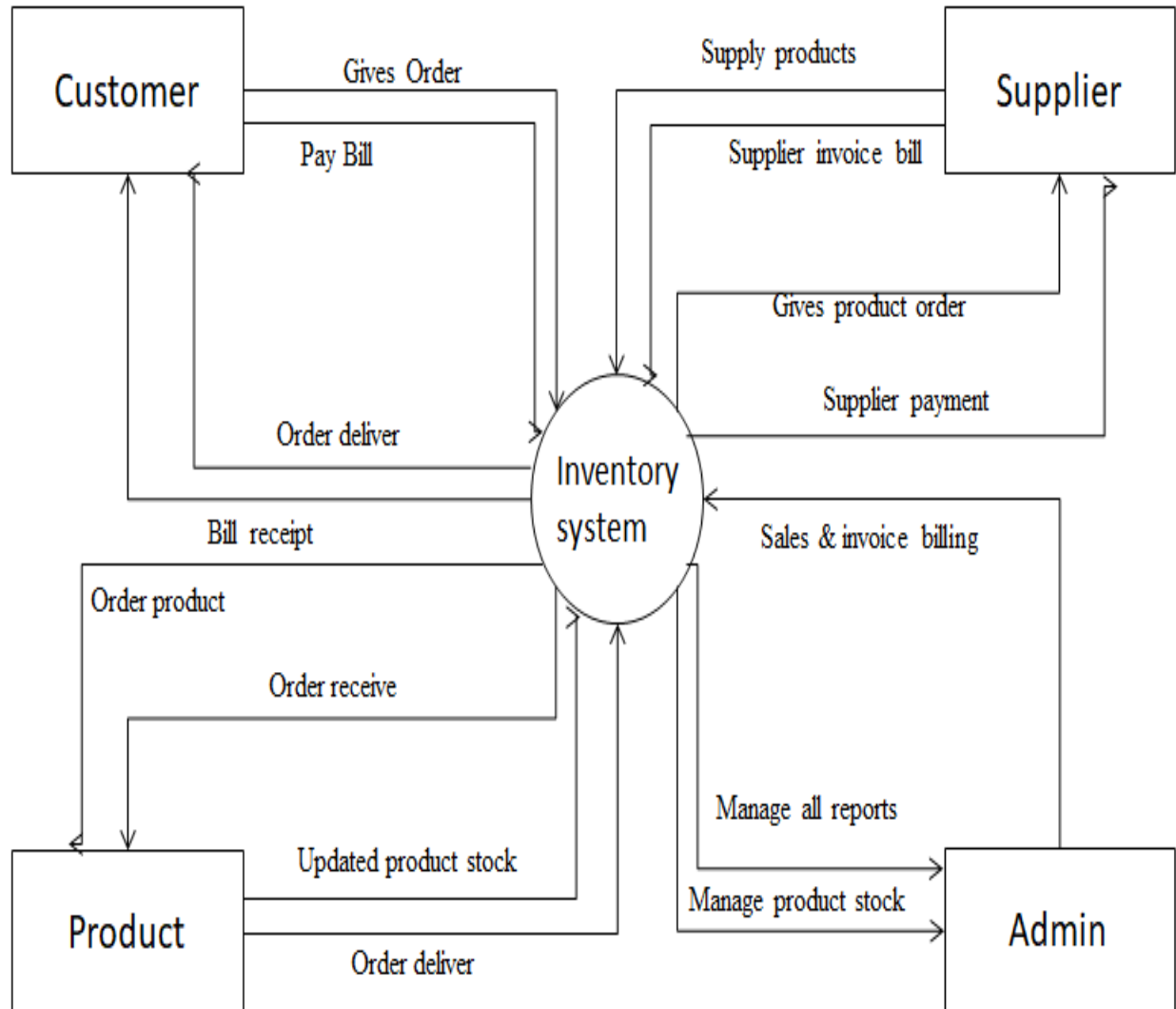
E-R Diagram:-

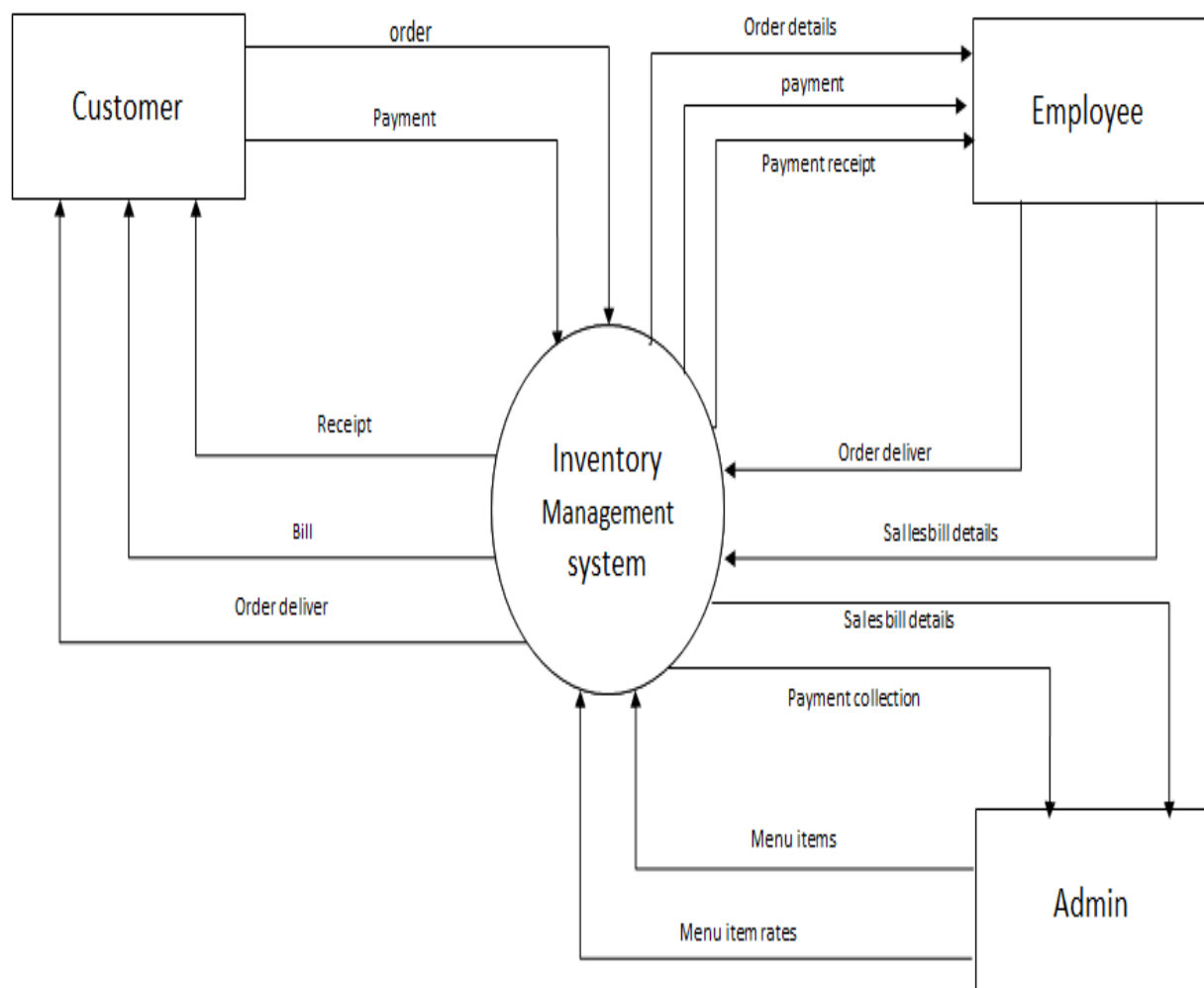
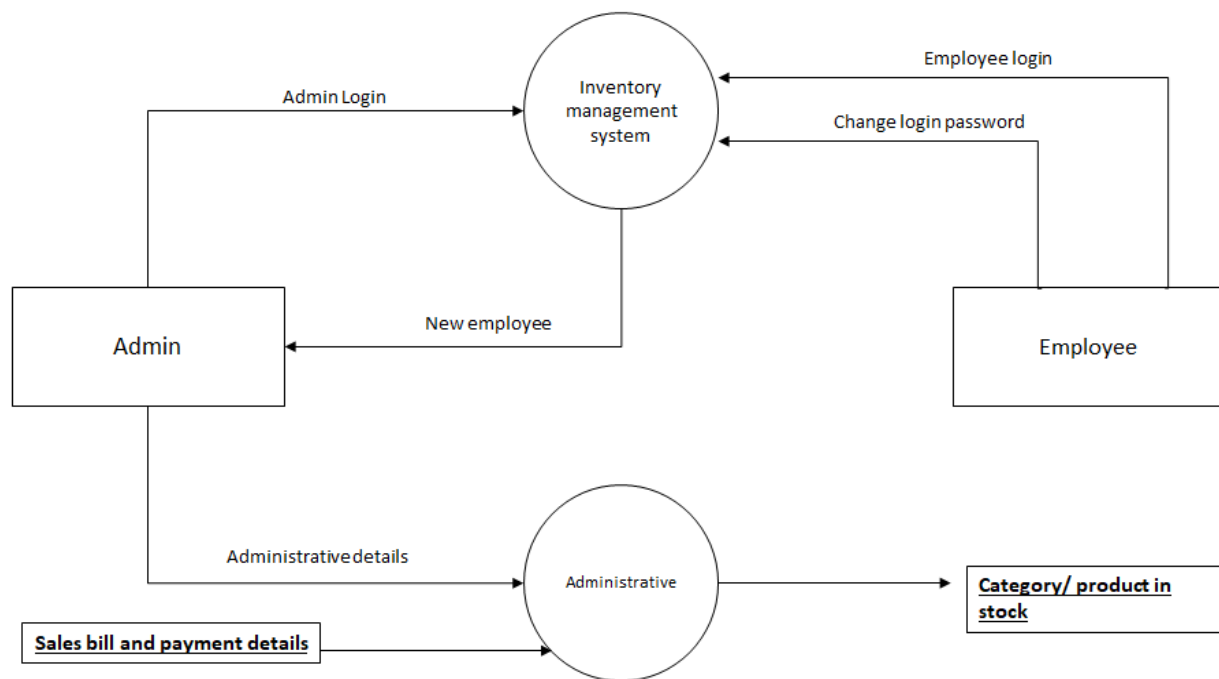


Use Case Diagram:-

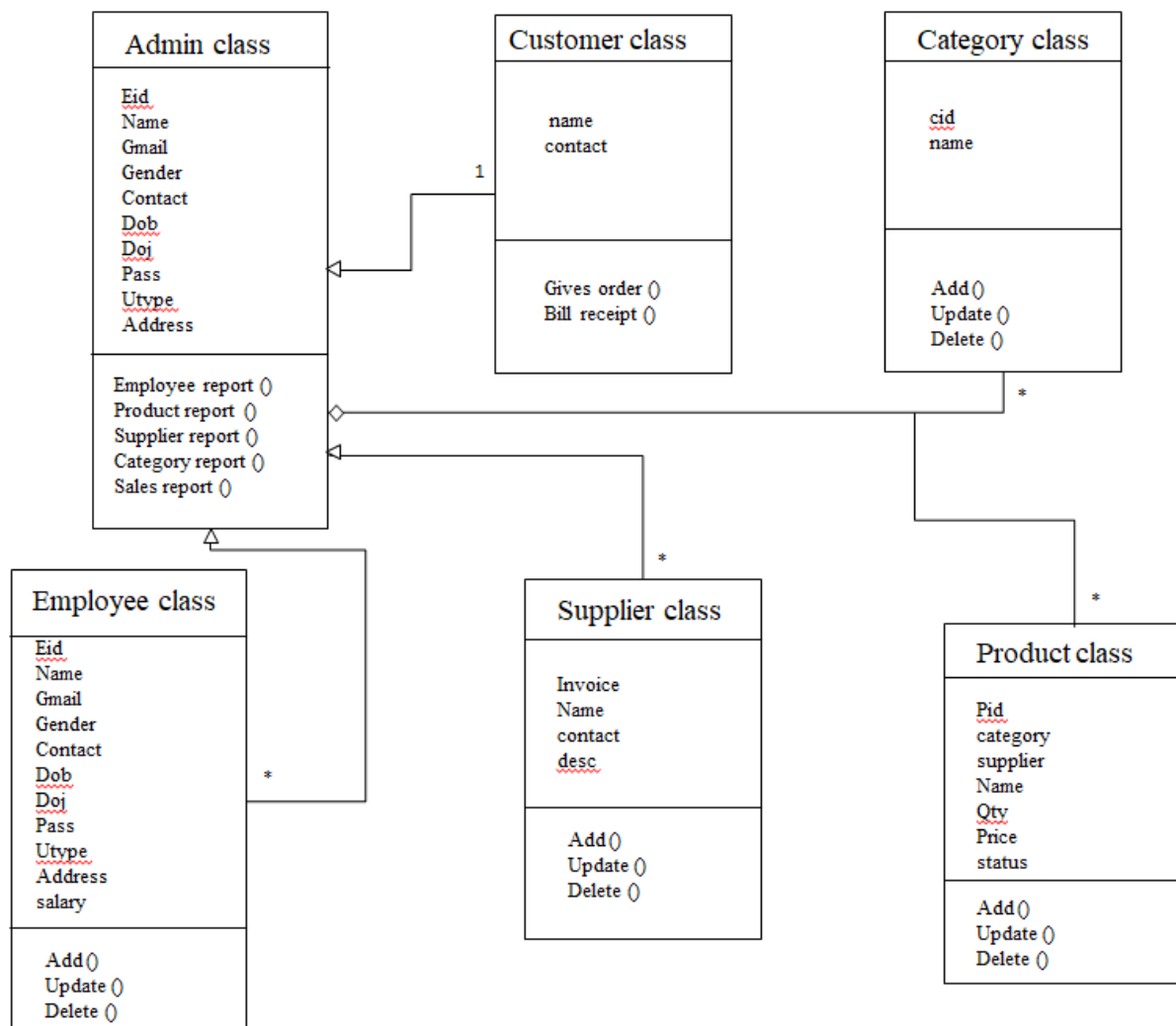


DFD Diagram:-

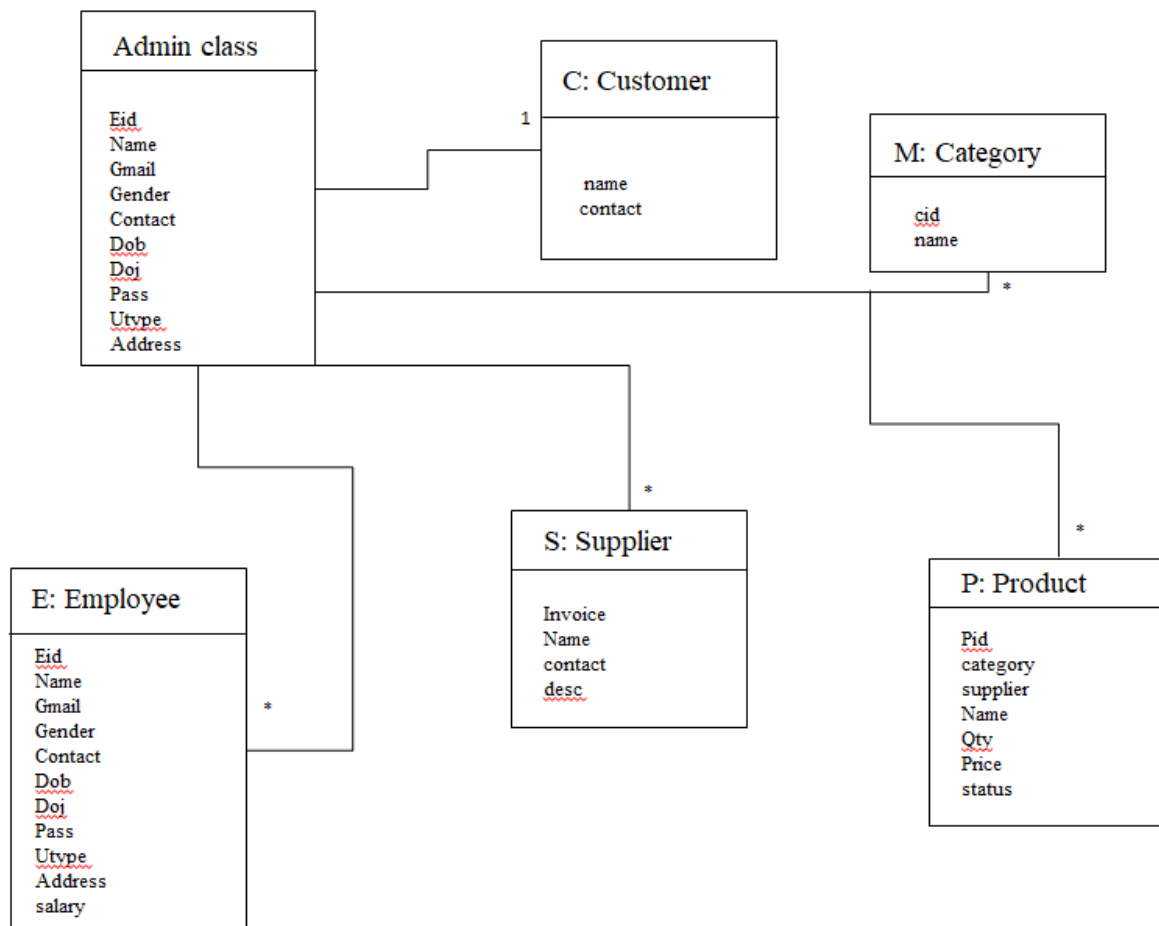




Class Diagram :-



Object Diagram:-



A decorative horizontal scroll frame with a black outline. The left end features a vertical bar with a semi-circular bottom and a small circle at the top. The right end has a small circle at the top. The text "Table Design" is centered within the scroll.

Table Design

Employee Table

Fields	Data Type	Size	Constraints	Description
Eid	Int	5	Primary key	Employee id
name	Varchar	50	Not null	Employee name
Gmail	Varchar	50	Not null	Gmail
Gender	Varchar	20	Not null	Gender
Contact	Int	10	Not null	Phone no
Dod	Varchar	10	Not null	Date of birth
Doj	Varchar	10	Not null	Date of join
Pass	Int	8	Not null	Password
Utype	Varchar	20	Not null	User type
Address	Varchar	100	Not null	Address
Salary	int	5	Not null	Salary

Category Table

Fields	Data Type	Size	Constraints	Description
cid	Int	5	Primary key	Category id
name	Varchar	50	Not null	category name

Supplier Table

Fields	Data Type	Size	Constraints	Description
Invoice	Int	5	Primary key	Invoice number
Name	Varchar	50	Not null	Supplier name
contact	Varchar	10	Not null	Contact
Desc	Varchar	50	Not null	Description

Product Table

Fields	Data Type	Size	Not null	Description
Pid	Int	5	Not null	Product id
Category	Varchar	50	Not null	Supplier name
Supplier	Varchar	10	Not null	Contact
Name	Varchar	50	Not null	Description
Price	Int	5	Not null	Product price
Qty	Int	5	Not null	Product quantity
status	Varchar	50	Not null	Product status



Module Design

Module Design:-

1. User Module

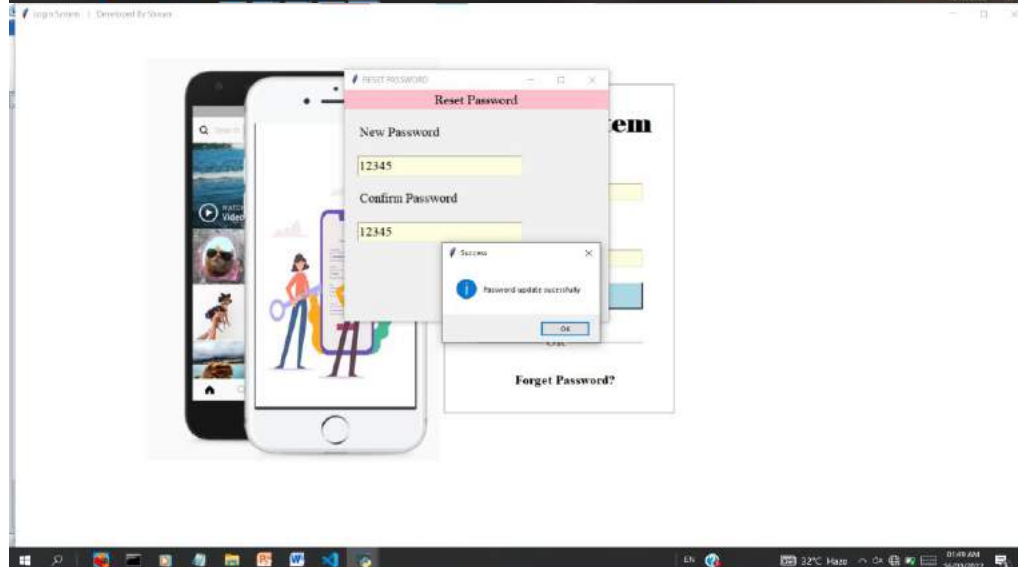
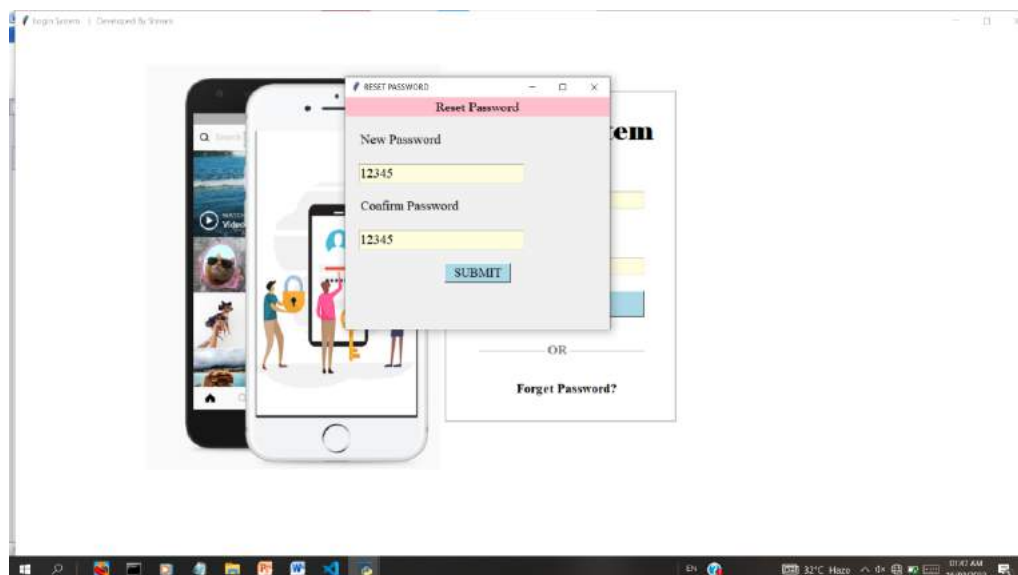
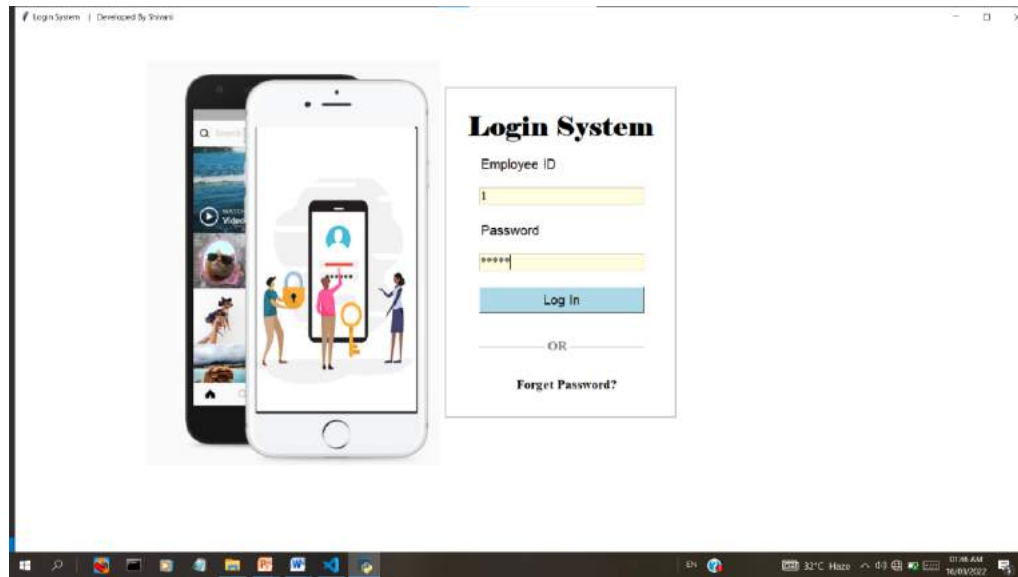
- Login.
- Purchase product

2. Admin Module

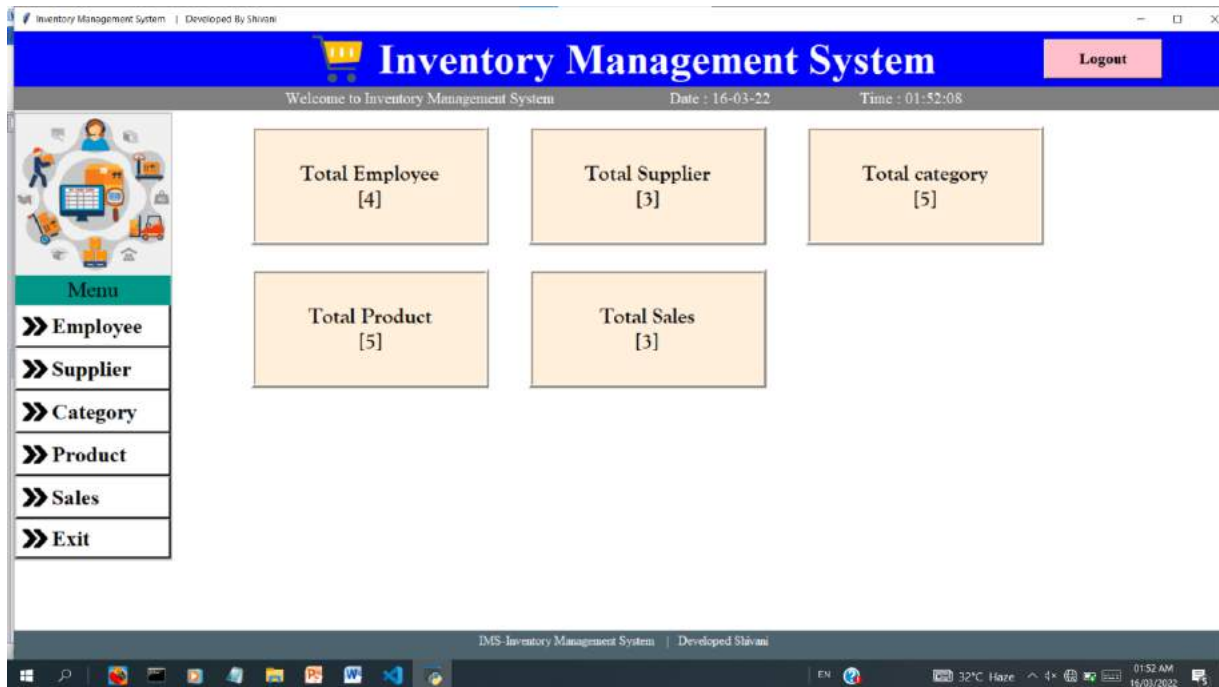
- Manage employee.
- Manage supplier
- Manage category.
- Manage product.
- Manage sales.
- All reports

Form Design

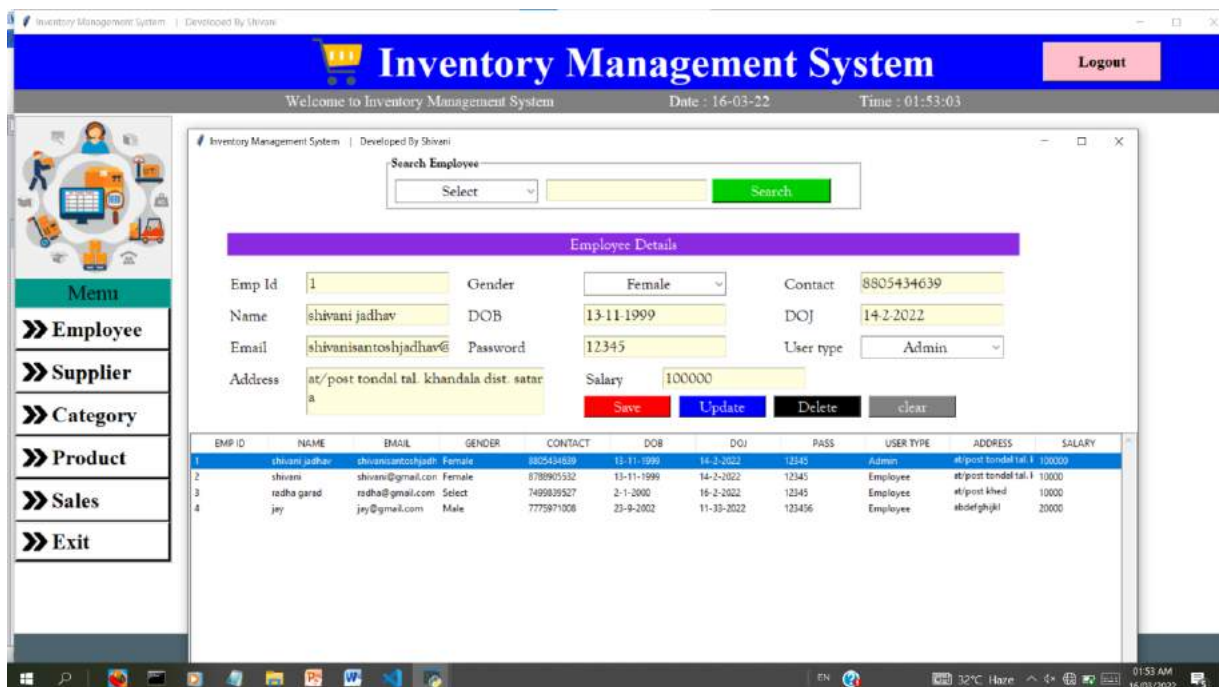
Login page



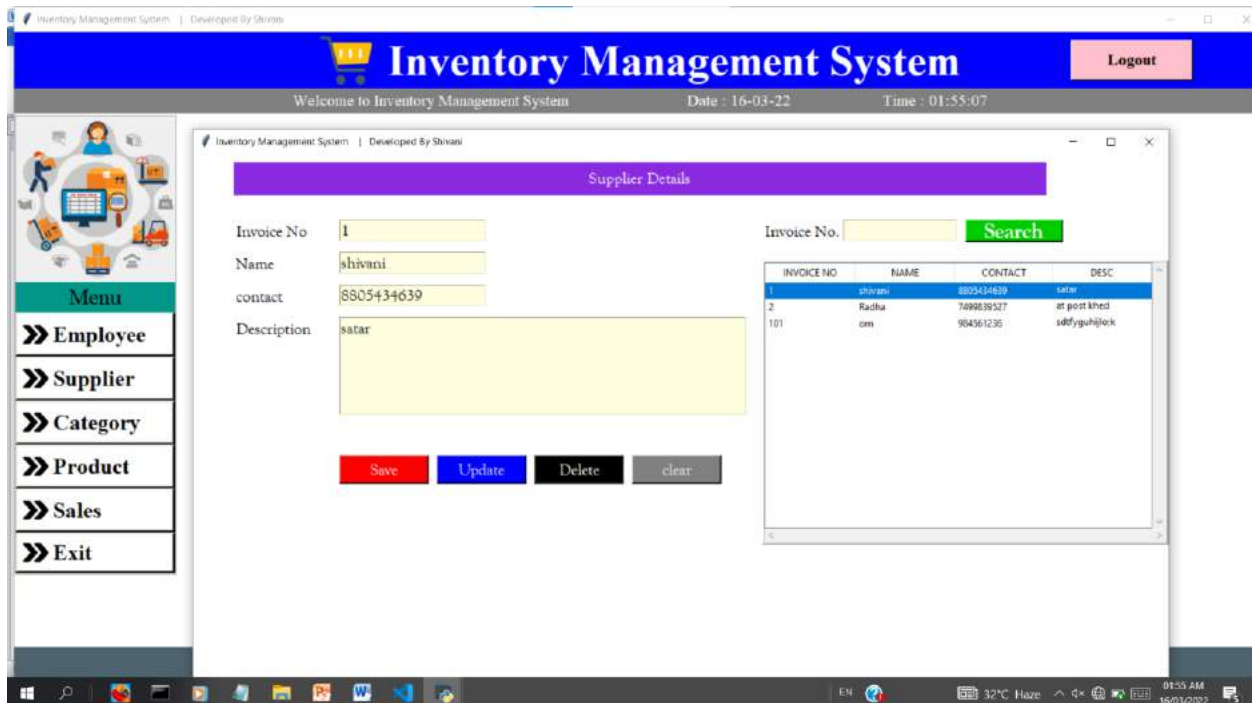
Dashboard page



Employee page



Supplier page



Inventory Management System | Developed By Shivani

Inventory Management System

Welcome to Inventory Management System Date : 16-03-22 Time : 01:55:07

Logout

Menu

- Employee
- Supplier
- Category
- Product
- Sales
- Exit

Supplier Details

Invoice No:

Name:

Contact:

Description:

Save Update Delete Clear

Invoice No. Search

INVOICE NO	NAME	CONTACT	DESC
1	shivani	8805434639	satar
2	Radhika	7499836527	at post khera
101	cm	984361236	sdfyguhjkl

Category page



Inventory Management System | Developed By Shivani

Inventory Management System

Welcome to Inventory Management System Date : 16-03-22 Time : 01:56:59

Logout


Menu

- Employee
- Supplier
- Category
- Product
- Sales
- Exit

Manage Product Details

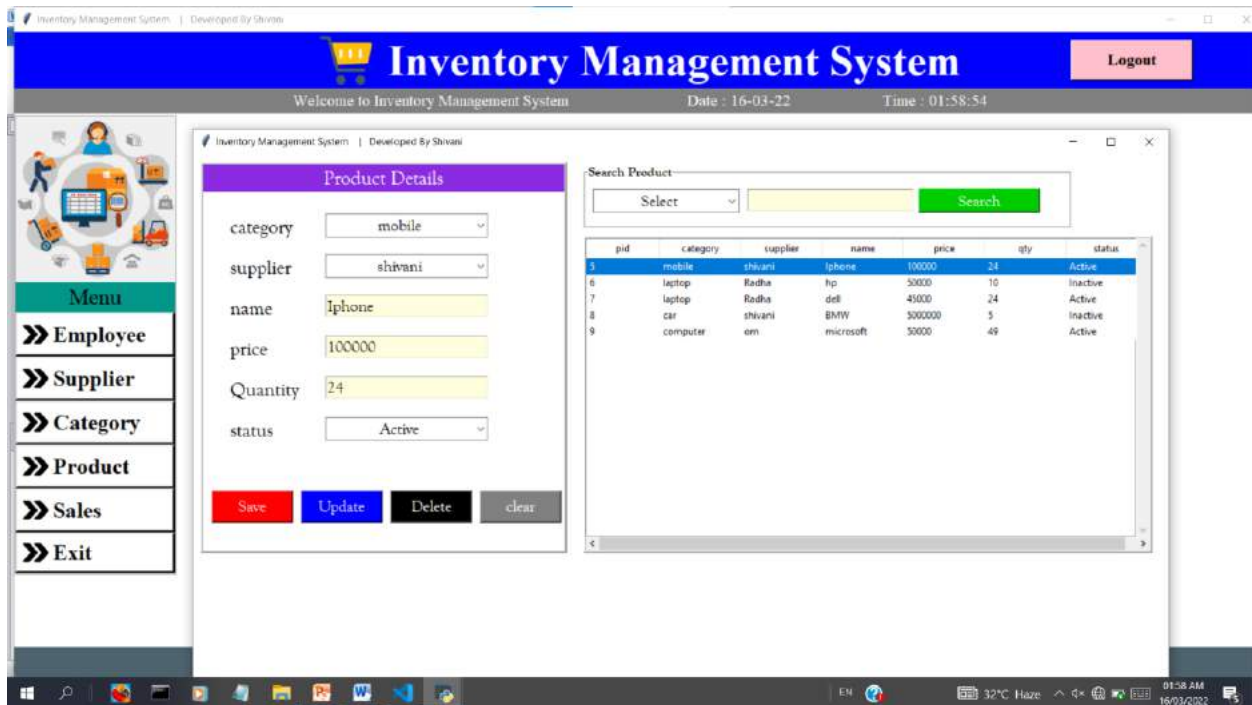
Enter Category Name

ADD Delete



CATEGORY ID	NAME
3	mobile
4	car
5	iphone
7	computer
8	laptop

Product page



Inventory Management System | Developed By Shivani

Inventory Management System

Welcome to Inventory Management System Date : 16-03-22 Time : 01:58:54

Logout

Menu

- » Employee
- » Supplier
- » Category
- » Product
- » Sales
- » Exit

Product Details

category: mobile
supplier: shivani
name: Iphone
price: 100000
Quantity: 24
status: Active

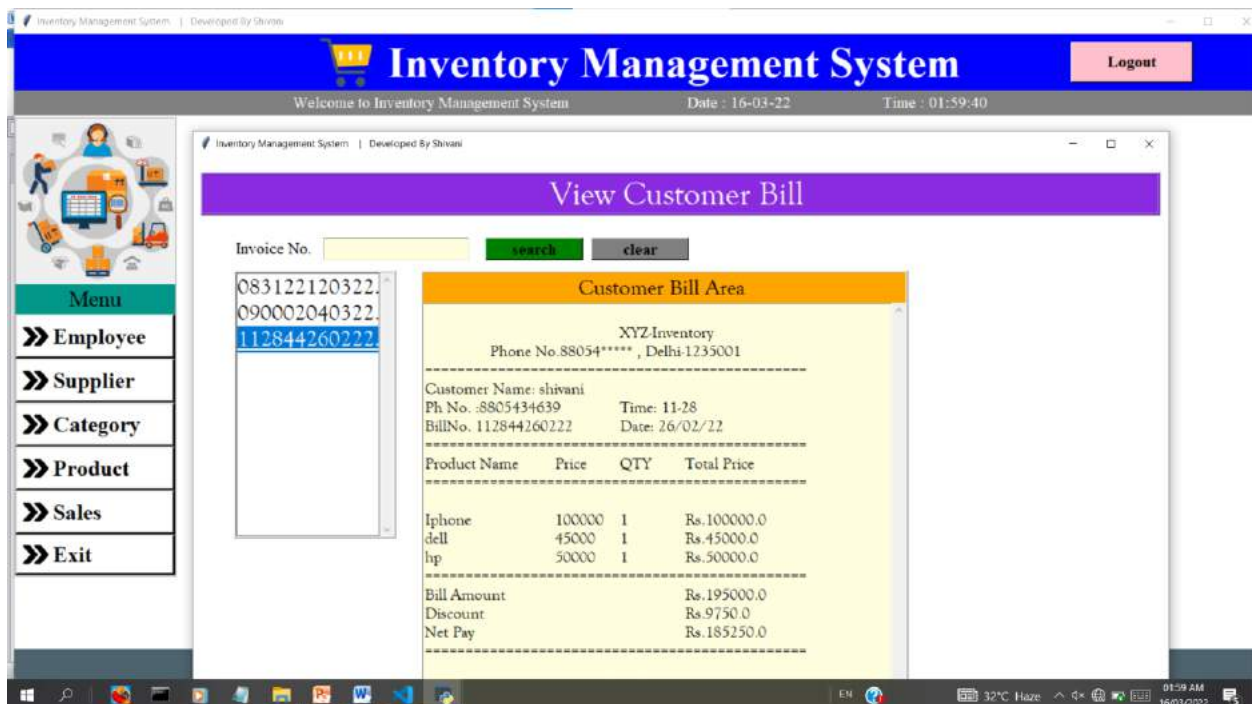
Save Update Delete Clear

Search Product

Select Search

pid	category	supplier	name	price	qty	status
5	mobile	shivani	Iphone	100000	24	Active
6	laptop	Radha	hp	50000	10	Inactive
7	laptop	Radha	dell	45000	24	Active
8	car	shivani	BMW	500000	5	Inactive
9	computer	om	microsoft	50000	49	Active

Sales page



Inventory Management System | Developed By Shivani

Inventory Management System

Welcome to Inventory Management System Date : 16-03-22 Time : 01:59:40

Logout

Menu

- » Employee
- » Supplier
- » Category
- » Product
- » Sales
- » Exit

View Customer Bill

Invoice No. Search Clear

083122120322
090002040322
112844260222

Customer Bill Area

XYZ Inventory
Phone No. 88054****, Delhi-1235001

Customer Name: shivani
Ph. No. :8805434639 Time: 11-28
BillNo. 112844260222 Date: 26/02/22

Product Name	Price	QTY	Total Price
Iphone	100000	1	Rs.100000.0
dell	45000	1	Rs.45000.0
hp	50000	1	Rs.50000.0

Bill Amount: Rs.195000.0
Discount: Rs.9750.0
Net Pay: Rs.185250.0

Billing page

Inventory Management System | Developed By Shivani



Inventory Management System

Logout

Welcome to Inventory Management System

Date : 16-03-22

Time : 02:04:02

All Products

Search Product | By Name

Show All

Product Name

Search

pid	name	price	qty	status
5	iphone	100000	22	Active
6	hp	50000	9	Active
7	dell	45000	20	Active
8	BMW	5000000	5	Active
9	microsoft	50000	46	Active

Note: Enter 0 Quantity to remove product from the cart

Customer Details

Name

jay

contact No.

7775971008

Cart

Total Product: [4]

pid	name	price	qty
5	iphone	100000	2
6	hp	50000	1
9	microsoft	50000	3
7	dell	45000	4

Product Name

Price Per Qty

Quantity

dell450004

In stock [24]

Clear

Add | Update Cart

Customer Bill Area

XYZ-Inventory
Phone No.88054*****, Delhi-1235001

Customer Name: jay

Ph No. : 7775971008

BillNo. 020353160322

Time: 02-03

Date: 16/03/22

Product Name	Price	QTY	Total Price
iphone	100000	2	Rs.200000.0
hp	50000	1	Rs.50000.0
microsoft	50000	3	Rs.150000.0
dell	45000	4	Rs.180000.0

Bill Amount

Discount

Net Pay

Rs.580000.0

Rs.290000.0

Rs.551000.0

Bill Amount

Discount

Net Pay

Rs.580000.0

17%

Rs.440000.0

Print

Clear All

Generate Bill



EN

32°C Haze

02:04 AM
16/03/2022



Testing

Testing:-

Security Testing

Testing is vital for the success of any software. No system design is ever perfect. Testing is also carried in two plans. First phase is during the software engineering that is during the module creation. Second phase is after the completion of software. This system testing which verifies the goal set of programs hanged together.

White Box Testing

In this techniques, the close examination of the logical part through the software are tested by case that exercise sets of conditions or loops. All logical parts of the software checked once.

Black Box Testing

This method enables the software engineer to device sets of input techniques that fully exercise all function requirements for program. Black Box Testing tests the inputs the output & the external data.

Future Enhancement

Future Enhancement:-

- Make the online payment system in application.
- Make the web base application in python.
- Forget password OPT received by mail id.
- Track the order location.
- This application can easy implement under various situation.



Conclusion

Conclusion:-

It was a great experience to design and implement the Inventory management System by using Python and Sql Lite. And to work on its documentation. While working on this project I have learned many things especially how to apply the concept in different models. We learn with the working of different modules of Python and also with different libraries and use of SQL lite.



Bibliography

Bibliography:-

- www.w3layout.com
- www.google.com.
- www.chrome.com.
- www.w3school.com
- **You tube**
- **Python by Gourishankar**
- **The complete references**
- tutorialspoint.com
- Programming by Mosh /Edureka
- Coding with web coder

Annexure:-

```
from tkinter import*
from PIL import Image,ImageTk
from tkinter import ttk,messagebox
import sqlite3
import os
import time
from employee import employeeClass
from supplier import supplierClass
from category import categoryClass
from product import productClass
from sales import salesClass
class IMS:
    def __init__(self,root):
        self.root=root
        self.root.geometry("1600x800+0+0")
        self.root.title("Inventory Management System | Developed By Shivani")
        self.root.config(bg="white")
        # title
        self.icon_title=PhotoImage(file="G:\IMS\images\logo1.png")

        title=Label(self.root,text="Inventory Management
System",image=self.icon_title,compound=LEFT,font=("times new
roman",40,"bold"),bg="blue",fg="white",padx=20).place(x=0,y=0,relwidth=1,height=70
)

        btn_logout=Button(self.root,text="Logout",command=self.logout,font=("times
new
roman",15,"bold"),bg="pink",cursor="hand2").place(x=1300,y=10,height=50,width=150)

        self.lbl_clock=Label(self.root,text="Welcome to Inventory Management
System\t\t Date : DD-MM-YYYY\t\t Time : HH:MM:SS",font=("times new
roman",15),bg="gray",fg="white")
        self.lbl_clock.place(x=0,y=70,relwidth=1,height=30)
        # menu
        self.MenuLogo=Image.open("images/menu_im.png")
        self.MenuLogo=self.MenuLogo.resize((200,200),Image.ANTIALIAS)
        self.MenuLogo=ImageTk.PhotoImage(self.MenuLogo)

        LeftMenu=Frame(self.root,bd=2,relief=RIDGE,bg="white")
        LeftMenu.place(x=0,y=102,width=200,height=565)

        lbl_menuLogo=Label(LeftMenu,image=self.MenuLogo)
        lbl_menuLogo.pack(side=TOP,fill=X)
        self.icon_side=PhotoImage(file="G:\IMS\images\side.png")

        lbl_menu=Label(LeftMenu,text="Menu",font=("times new
roman",20),bg="#009688").pack(side=TOP,fill=X)
        btn_employee=Button(LeftMenu,text="Employee",command=self.employee,image=s
elf.icon_side,compound=LEFT,padx=5,anchor="w",font=("times new
```

```

roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        btn_supplier=Button(LeftMenu,text="Supplier",command=self.supplier,image=s
elf.icon_side,compound=LEFT,padx=5,anchor="w",font=("times new
roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        btn_category=Button(LeftMenu,text="Category",command=self.category,image=s
elf.icon_side,compound=LEFT,padx=5,anchor="w",font=("times new
roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        btn_product=Button(LeftMenu,text="Product",command=self.product,image=self
.icon_side,compound=LEFT,padx=5,anchor="w",font=("times new
roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        btn_sales=Button(LeftMenu,text="Sales",command=self.sales,image=self.icon_
side,compound=LEFT,padx=5,anchor="w",font=("times new
roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        btn_exit=Button(LeftMenu,text="Exit",image=self.icon_side,compound=LEFT,pa
dx=5,anchor="w",font=("times new
roman",20,"bold"),bg="white",bd=3,cursor="hand2").pack(side=TOP,fill=X)

        self.lbl_employee=Label(self.root,text="Total Employee\n[ 0
]",bd=5,relief=RIDGE,bg="antiquewhite1",fg="black",font=("goudy old
style",20,"bold"))
        self.lbl_employee.place(x=300,y=120,height=150,width=300)
        self.lbl_supplier=Label(self.root,text="Total Supplier\n[ 0
]",bd=5,relief=RIDGE,bg="antiquewhite1",fg="black",font=("goudy old
style",20,"bold"))
        self.lbl_supplier.place(x=650,y=120,height=150,width=300)
        self.lbl_category=Label(self.root,text="Total Category\n[ 0
]",bd=5,relief=RIDGE,bg="antiquewhite1",fg="black",font=("goudy old
style",20,"bold"))
        self.lbl_category.place(x=1000,y=120,height=150,width=300)
        self.lbl_product=Label(self.root,text="Total Product\n[ 0
]",bd=5,relief=RIDGE,bg="antiquewhite1",fg="black",font=("goudy old
style",20,"bold"))
        self.lbl_product.place(x=300,y=300,height=150,width=300)
        self.lbl_sales=Label(self.root,text="Total Sales\n[ 0
]",bd=5,relief=RIDGE,bg="antiquewhite1",fg="black",font=("goudy old
style",20,"bold"))
        self.lbl_sales.place(x=650,y=300,height=150,width=300)

        lbl_footer=Label(self.root,text="IMS-Inventory Management
System      |      Developed Shivani\n",font=("times new
roman",12),bg="#4d636d",fg="white").pack(side=BOTTOM,fill=X)
        self.update_content()

#=====
def employee(self):
    self.new_win=Toplevel(self.root)
    self.new_obj=employeeClass(self.new_win)

```

```

def supplier(self):
    self.new_win=Toplevel(self.root)
    self.new_obj=supplierClass(self.new_win)

def category(self):
    self.new_win=Toplevel(self.root)
    self.new_obj=categoryClass(self.new_win)

def product(self):
    self.new_win=Toplevel(self.root)
    self.new_obj=productClass(self.new_win)

def sales(self):
    self.new_win=Toplevel(self.root)
    self.new_obj=salesClass(self.new_win)

def update_content(self):
    con=sqlite3.connect(database=r'ims.db')
    cur=con.cursor()
    try:
        cur.execute("select * from employee")
        employee=cur.fetchall()
        self.lbl_employee.config(text=f'Total
Employee\n[{str(len(employee))}]')
        cur.execute("select * from supplier")
        supplier=cur.fetchall()
        self.lbl_supplier.config(text=f'Total
Supplier\n[{str(len(supplier))}]')
        cur.execute("select * from category")
        category=cur.fetchall()
        self.lbl_category.config(text=f'Total
category\n[{str(len(category))}]')
        cur.execute("select * from product")
        product=cur.fetchall()
        self.lbl_product.config(text=f'Total Product\n[{str(len(product))}]')
        bill=len(os.listdir('bill'))
        self.lbl_sales.config(text=f'Total Sales\n[{str(bill)}]')
        time_=time.strftime("%I:%M:%S")
        date_=time.strftime("%d-%m-%y")
        self.lbl_clock.config(text=f"Welcome to Inventory Management
System\t\t Date : {str(date_)}\t\t Time : {str(time_)}")
        self.lbl_clock.after(200,self.update_content)
    except Exception as ex:
        messagebox.showerror("Error",f"Error due to :
{str(ex)}",parent=self.root)

def logout(self):
    self.root.destroy()
    os.system("python login.py")

```

```
if __name__=="__main__":  
    root=Tk()  
    obj=IMS(root)  
    root.mainloop()
```