

# **SALES FORCE AUTOMATION**

## **A PROJECT REPORT**

Submitted By

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to

the APJ Abdul Kalam Technological University  
in partial fulfillment of the requirements for  
the award of the degree

*of*

**MASTER OF COMPUTER APPLICATIONS**



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**June, 2020**

## **DECLARATION**

I undersigned hereby declare that the project report “SALES FORCE AUTOMATION”, submitted for partial fulfilment of the requirements for the award of degree of Master of Computer Applications of the APJ Abdul Kalam Technological University, Kerala is a bonafide work done by me under supervision of Mr.Jose George. This submission represents my ideas in my own words and where ideas or words of others have been included, I have adequately and accurately cited and referenced the original sources. I also declare that I have adhered to ethics of academic honesty and integrity and have not misrepresented or fabricated any data or idea or fact or source in my submission. I understand that any violation of the above will be a cause for disciplinary action by the institute and/or the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been obtained. This report has not been previously formed the basis for the award of any degree, diploma or similar title of any other University.

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**CERTIFICATE**

This is to certify that the report entitled **“SALES FORCE AUTOMATON”** submitted by **“JOSNA C C , Reg.No:SJC17MCA017”** to the APJ Abdul Kalam Technological University in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications is a bonafide record of the project work carried out by her under our guidance and supervision. This report in any form has not been submitted to any other University or Institute for any purpose.

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If words are considered as symbols of approval and tokens of acknowledgment, then let words play the heralding role in expressing my gratitude. To bring something into existence is truly a work of God. I would like to thank God for not letting me down and showing me the silver lining in the dark clouds.

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I would also thank my institution and faculty, my family and friends without whom this project would have been a distant reality.

**JOSNA C C**

# ABSTRACT

This application is designed to implement and monitor sales activities of an enterprise. It involves various parties like Administrator, Salespeople, other enterprise users etc. Administrator is able to handle all sales activities of an enterprise comprised of multiple sales users. Every salespeople is provided by a unique credentials and using these credentials they can log their sales activities. These activities further monitored by Administrator of the enterprise. Moreover, this application acts as a CRM for an enterprise to handle the modules such as customers, contacts, events, opportunities, campaigns etc.

## MODULES

**Dashboard:**Here you can see the general overview of your sales activity at a glance. Which display statistical view of latest campaigns with required data.

**Contact List:**Use contact list to import bulk contacts into single list. In create page, you can download the sample file for your reference. It will be useful, at the time of sending a campaign. In contact list page, you can see name of the contact list, valid & invalid contacts of the list, bounced contacts, failed contacts, duplicate contacts.

**Contacts:**All the uploaded contacts will be appeared here. Here you can able to see valid, bounced, failed contacts with the count. You delete existing contacts from the list page. You filter contacts by email, domain name, created by, contact list. Click on each tab, to check contacts in a detailed view.

**Email Templates:**Email templates are used at the time of campaign creation. In list page, to create a campaign using that template, to see how the template will look like. You can filter email templates by name, created by.

**Campaign:**It will be useful to send promotional campaigns for multiple contacts and to generate more no. of leads. In campaign create page, you can choose existing contact list & email templates. Here you can choose option as whether to receive your replies to your account or CRM application.

# CONTENTS

Contents	Page No.
<b>Chapter 1: INTRDUCTION</b>	
I.1 Introduction	1
I.2 Project Overview	1
<b>Chapter 11: SYSTEM ANALYSIS</b>	
II.1 Initial Investigation	3
II.2 Existing system	3
II.3 Propose System	3
II.3.1 Advantages of the Proposed System	4
II.3.2 Features of the proposed system	4
II.4 Feasibility study	4
II.4.1 Technical Feasibility	5
II.4.2 Economical Feasibility	6
II.4.3 Operational Feasibility	6
II.4.4 Behavioural Feasibility	7
<b>Chapter III: SYSTEM DESIGN</b>	
III.1 Software Requirement Specification	8
III.1.1 Software Requirement	8
III.1.2 Hardware Requirement	8
III.2 System Design	9
III.2.1 Non-Functional Requirement	9
III.3 Unified Modeling Language	10
III.3.1 Use case Diagram	11
III.3.2 Sequence Diagram	15
III.3.3 Activity Diagram	19

III.4 System Design	23
III.4.1 Input Design	26
III.4.2 Data Flow Diagram	28
III.4.3 Output Design	32
III.4.4 Database Design	33
III.5 Tools And Platforms	37
III.5.1 Python	38
III.5.2 Django Framework	40
III.5.3 Python-Spacy	41
III.5.4 Django – Crispy – Forms	41
III.5.5 Python – xhtml2pdf	41
III.5.6 Pycharm IDE 3.4	41
<b>Chapter IV: SYSTEM TESTING</b>	
IV.1 Testing Methodologies and Strategies	45
IV.1.1 Unit Testing	45
IV.1.2 Integration Testing	46
IV 1.3 system Testing	46
IV.1.4 User Acceptance Testing	46
IV.1.5 Test Cases	47
<b>Chapter V: SYSTEM IMPLEMENTATION</b>	49
<b>Chapter VI: CONCLUSION</b>	50
<b>REFERENCES</b>	51
<b>Chapter A: APPENDIX</b>	
A.1 Screenshot	52
A.2 Sample code	58

## LIST OF TABLES

No.	Title	Page No.
III.1	CUSTOMER	33
III.2	EMPLOYEE	33
III.3	CONTACT	34
III.4	EMAIL	34
III.5.	OPPORTUNITY	35
III.6	CAMPAIGN	35
III.7	LOGS	36
III.8	FEEDBACK	36
III.9	EVENT	36



## LIST OF FIGURES

No.	Title	Page No.
III.1	Actor	12
III.2	Use Case	13
II.1	UML DIAGRAM FOR ADMIN	14
II.2	UML DIAGRAM FOR EMPLOYEE	14
II.3	UML DIAGRAM FOR CUSTOMER	15
III.1:	SEQUENCE DIAGRAM FOR ADMIN	17
III.2 :	SEQUENCE DIAGRAM FOR EMPLOYEE	18
III.3 :	SEQUENCE DIAGRAM FOR CUSTOMER	19
III.4:	ACTIVITY DIAGRAM FOR ADMIN	21
III.5:	ACTIVITY DIAGRAM FOR EMPLOYEE	22
III.6:	ACTIVITY DIAGRAM FOR CUSTOMER	23
III.7	LEVEL0	28
III.8	LEVEL1-ADMIN	29
III.9	LEVEL1-EMPLOYEE	30
III.10	LEVEL1- CUSTOME	31
A.1	HOME PAGE	52
A.2	LOGIN PAGE	52
A.3	ADMIN HOME PAGE.	53
A.4	CUSTOMER HOME PAGE	53
A.5	ADDMIN ADD EMPLOYEE	54
A.6	ADDMIN VIEW EMPLOYEE	54
A.7	ADDMIN VIEW CUSTOMER	55
A.8	EMAIL PAGE.	55
A.9	LOGS PAGE	56
A.10	FEEDBACK PAGE	56
A.11	EMPPLOYEE ADD CONTACT	57
A.12	OPPORTUNITY PAGE	57

# **CHAPTER I**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

The project entitled as “SALESFORCE AUTOMATION” is software which is helpful for sales peoples as well as the company authorities. In the current system all the activities are done manually. It is very time consuming and costly. Our Sales Force Automation deals with the various activities related to the employee. There are mainly 3 modules in this software Admin module, Employee Module, Customer Module. In the Software we can register as a user and user has of two types, employee and administrator. Administrator has the power to add new user and can edit and delete a user. An Employee can register as user and can add edit and delete his profile. The administrator can add edit and delete marks for the employee. All the users can see the marks.

### **1.2 ABOUT THE ORGANIZATION**

The college was founded by a group of well-known academics. They are pioneering educators, having unmatched experience in the field of education with a belief that the continuous search for knowledge is the sole path to success. The Primary focus of the institution is to expose the young minds to be world of technology, instilling in them confidence and fortitude to face new challenges that enables them to excel in their chose field. The college inculcates the development of all facets of the mind culminating in an intellectual and balanced personality. Our team of dedicated and caring faculty strives to widen the students horizon of learning thereby achieving excellent results for every student. St. Joseph’s college of Engineering & Technology (SJCET), has always been in the forefront with a wide spectrum of distinct features and

facilities. The institution is a leader in the academia and its culture has set a benchmark in the region of quality in education. SJCET, Right from inception, has been maintaining high levels of standard in academic and extra-curricular realms of activities. We offer BTEC degree courses in 6 engineering disciplines, and Masters Degree courses in Engineering, Computer Application and Business Administration. In the short span of a decade of its existence and among the six batches of students that have graduated, the college bagged several university ranks and has a remarkably high percentage of pass. The college is also the venue of national and state level seminars and symposiums and has emerged as the hub of technical education in the state. The placement scenario is also quite commendable, with several premier industries visiting ST. Joseph's college of engineering & technology for placement and recruitment.

## **CHAPTER II**

### **SYSTEM ANALYSIS**

#### **II.1 INITIAL INVESTIGATION**

Preliminary investigation is a problem solving activity that requires interactive communication between the system user and system developer. It does various feasibility studies. In these studies ,a rough figure system activities can be obtained from the decision about the strategies to be followed for effective system study and analysis can be taken.

In the preliminary investigation an initial picture about the system working is got from this study and data collection methods are identified. To launch a system investigation we need a master plan detailing the steps to be taken, the people to be questioned and the outcome expected. The scope of preliminary investigation may vary from a brief one person effort to an extensive series of activities requiring the participation may vary from a brief one person effort on an extensive series of activities requiring the participation of many individuals.

#### **II.2 EXISTING SYSTEM**

The study of the existing system is a pre-requisite for developing any software system. The study of the system reveals many features of the existing system. In this system process of streamlining manual, tedious, and time-consuming tasks in the sales process so your sales team can focus less on admin and more on selling. These are mostly administrative and data entry tasks that sales reps, managers, and leaders do on a daily, weekly, or monthly basis.

#### **II.3 PROPOSED SYSTEM**

The proposed system computerization is developed using SQL server as back-end and Python django as front-end. The Django framework is managed, type safe environment for application, development and execution. The software is developed as a simulated system and the complex procedures are avoided to make the system easy to use. The proposed system is

user friendly and has simplicity and security. In the proposed system the data redundancy can be avoided to certain extent and the data consistency can be maintained.

### **II.3.1 Advantages of the Proposed System**

- The proposed system provides accurate data.
- The proposed system is very much faster than existing issue, searching is taking small amount of computerized time.
- Less time consuming and more efficient.
- Simple user interface to reduce processing
- Eliminate chances for errors and reduce effort

### **II.3.2 Features of the Proposed System**

The various features of proposed system are as follows:

- Access to the system and database as per user identification the maximum security ensured.
- Integrity reliability and integrity of data User friendly and flexible in all aspects
- Data entry updates is quite easy
- Effective table manipulation as facilitated by the rich SQL Good validation checking
- Easy maintenance
- Removes chances of leakage of information. Provides a better record keeping system
- All these forms the major aspects and advantages of the proposed system. Provision is made for effective improvements of maintenance are needed at any stage.
- All these form the major aspects and advantages of the proposed system. Provision is made for effective improvements of maintenance are needed at any stage.

## **II.4 FEASIBILITY STUDY**

During system analysis, a feasibility study of the proposed system was carried out to see whether it was beneficial to the organization. The main aim of the feasibility study is to determine whether it would be financially and technically feasible to develop the product. While evaluating the existing system, many advantages and disadvantages raised. Analyzing

the problem thoroughly forms the vital part of the system study. Problematic areas are identified and information is collected.

The benefits of this site are users can easily interact and get the services without much complexity. It helps to make it possible that more users can interact with the site at a time. Feasibility study is to determine whether the proposed system is technically, economically and behaviorally feasible in all respects.

The main aim of feasibility study is to evaluate alternative site and propose the most feasible and desirable site for development. If there is no loss for the organization then the proposed system is considered financially feasible. A feasibility study is carried out to select the best system that meets performance requirements.

The feasibility study activity involves the analysis of the problem and collection of all relevant information relating to the product such as the different data items which would be input to the system, the processing required to be carried out on these data, the output data required to be produced by the system as well as various constraints on the behaviour of the system.

In this scenario, problems are identified. Essential data are being gathered for the existing problems. It is necessary that this analysis familiarizes the designer with objectives, activities, and the function of the organization in which the system is to be implemented. The feasibility study was divided into four:- Technical, Economical, Operational and Behavioural. It is summarized below:-

#### **II.4.1 TECHNICAL FEASIBILITY**

According to feasibility analysis procedure the technical feasibility of the system is analyzed and the technical requirements such as software facilities, procedure, inputs, are identified. While considering the problems of existing system, it is sufficient to implement the new system. The proposed system can be implemented to solve issues in the existing system.

It includes the evaluation of and how it meets the proposed system. This system use Python Django framework and SQLite as back end technology.

#### **II.4.2 ECONOMIC FEASIBILITY**

Economic analysis is most frequent used for evaluating of the effectiveness of the candidate system. More commonly known as cost/benefit analysis the procedure is to determine the benefit and saving that are expected from a candidate system and compare them with the existing system. Except for the initial capital amount and the amount after each financial year, no other huge amount is needed. The expenses can be handles by any participants. So, the system is economically feasible.

This feasibility involves some questions such as whether the firm can afford to build the system, whether its benefits should substantially exceed its costs, and whether the project has higher priority and profits than other projects that might use the same re- sources. Here there is no problem. This firm has fully equipped hard ware, and fully fledged software, so no need to spend money on these issues. And as the client and the developer are one, there is no further problem in economic issues.

#### **II.4.3 OPERATIONAL FEASIBILITY**

Methods of processing and presentation are all according to the needs of clients since they can meet all user requirements here. The proposed system will not cause any problem under any circumstances and will work according to the specifications mentioned. Hence the proposed system is operationally feasible.

People are inherently resistant to change and computer has been known to facilitate changes. The system operation is the longest phase in the development life cycle of a system. So, Operational Feasibility should be given much importance. This system has a user-friendly interface. Thus it is easy to handle

#### **II.4.4 BEHAVIORAL FEASIBILITY**

In today's world, computer is an inevitable entity. As per the definition of behaviour design, many valid points are recognized in this study. This system behaviour changes according to different environment. In order to ensure proper authentication and authorization and security of sensitive data of the admin or employers, login facilities are provided. These are the main feasibility studies tested in this application.



## **CHAPTER III**

### **SYSTEM ANALYSIS AND DESIGN**

#### **III.1 SOFTWARE REQUIREMENT SPECIFICATION**

The primary goal of the system analyst is to improve the efficiency of the existing system. For that study of specification of the requirement is very essential. For the development of the new system, a preliminary survey of the existing system will be conducted. An investigation is done whether the up gradation of the system into an application program could solve the problems and eradicate the inefficiency of the existing system. This gives an idea about the system specifications required to develop and install the project "SALES FORCE AUTOMATION".

The System Requirements Specification is based on the System Definition. The requirement specifications are primarily concerned with functional and performance aspect of a software product and emphasis are placed on specifying product characteristics implying how the product will provide those characteristics. One of the most difficult tasks is selecting software, once the system requirement is find out then we have to determine whether a particular software package fits for those system requirements. This selection summarizes the application requirement.

##### **III.1.1 HARDWARE REQUIREMENT**

- CPU - INTEL(R)PENTIUM(R)
- HARD DISKSPACE - 500 GB
- RAM - 2GB
- DISPLAY - 19 STANDARD RATIO LCDMONITOR
- KEYBOARD - 99-104 KEYS
- CLOCK SPEED - 1.99 GHZ

##### **III.1.2 SOFTWARE REQUIREMENT**

- OPERATING SYSTEM - WINDOWS
- WEB SERVER - WSGI PYTHON DJANGO SERVER
- FRONT END – PYTHON DJANGO FRAMEWORK
- BACK END – POSTGRESQL

## **III.2 SYSTEM DESIGN**

Designing the system in an effective way leads to the smooth working of any software's. System design is the process of developing specification for a candidate system that meet the criteria established in the system analysis. Major step in the system design is the preparation of the input forms and output reports in a form applicable to the user. The main objective of the system design is to use the package easily by any computer operator. System design is the creative act of invention, developing new inputs, and database, off-line files, method, procedure and output for processing business to meet an organization objective. System design builds information gathered during the system analysis. This system is designed neatly so that user will never get ambiguity while using the system.

### **III.2.1 NON-FUNCTIONAL REQUIREMENTS**

#### **Performance Requirements**

For the efficient performance of the application, network must have high bandwidth so that the task of centralized management does not lead to network jam. Also the hard disk capability must be high so that data can be effectively stored and retrieved.

#### **Security Requirements**

Security requirements of this application involves authentication using user name and password so that invalid users are restricted from data access. For the security of data, periodic database backups must be performed so that we can recover data in the case of data loss.

### **III.3 UNIFIED MODELING LANGUAGE [UML]**

UML is a way of visualizing a software program using a collection of diagrams. The notation has evolved from the work of Grady Booch, James Rumbaugh, Ivar Jacobson and the Rational Software Corporation to be used for object-oriented design, but it has since been extended to cover a wider variety of software engineering projects. Today, UML is accepted by the Object Management Group (OMG) as the standard for modelling software development.

UML stands for Unified Modeling Language. UML 2.0 helps extend the original UML specification to cover a wider portion of software development efforts including agile practices.

Improved integration between structural models like class diagrams and behavior models like activity diagrams.

The original UML specified nine diagrams; UML 2.x brings that number up to 13. The four new diagrams are called: communication diagram, composite diagram, interaction overview diagram and timing diagram. It also renamed state chart diagrams to state machine diagrams, also known as state diagrams.

#### **Types of UML diagrams**

The current UML standards call for 13 different types of diagrams: class, activity, object, use case, sequence, package, state, component, communication, composite structure, interaction overview, timing and deployment. These diagrams are organized into two distinct groups: structural diagrams and behavioral or interaction diagrams.

#### **Structural UML diagrams**

- Class diagram
- Package diagram
- Object diagram
- Component diagram
- Composite structure diagram
- Deployment diagram

## **Behavioral UML diagrams**

- Activity Diagram
- Sequence diagram
- Use case diagram
- State diagram
- Communication diagram
- Interaction overview diagram
- Timing diagram

### **III.3.1 Use case Diagram**

To model a system the most important aspect is capture the dynamic behaviour. To modify a bit in details, dynamic behaviour of the system when it is running or operating. So only behaviour is not sufficient to model a system rather dynamic behaviour is more important than static behaviour. In UML there are five diagrams available to model dynamic nature and use case diagram is one of them. Now as we have to discuss that the use case diagram is dynamic in nature there should be some internal or external factors for making the interaction. These internal and external agents are known as actors. So use case diagram consists of actors, use case and their relationships. The diagram is used to model the system of an application. A single use case diagram captures a particular functionality of a system.

Use case Diagram objects:

- Actor
- Use case
- System
- Package Acto

## **Actor**

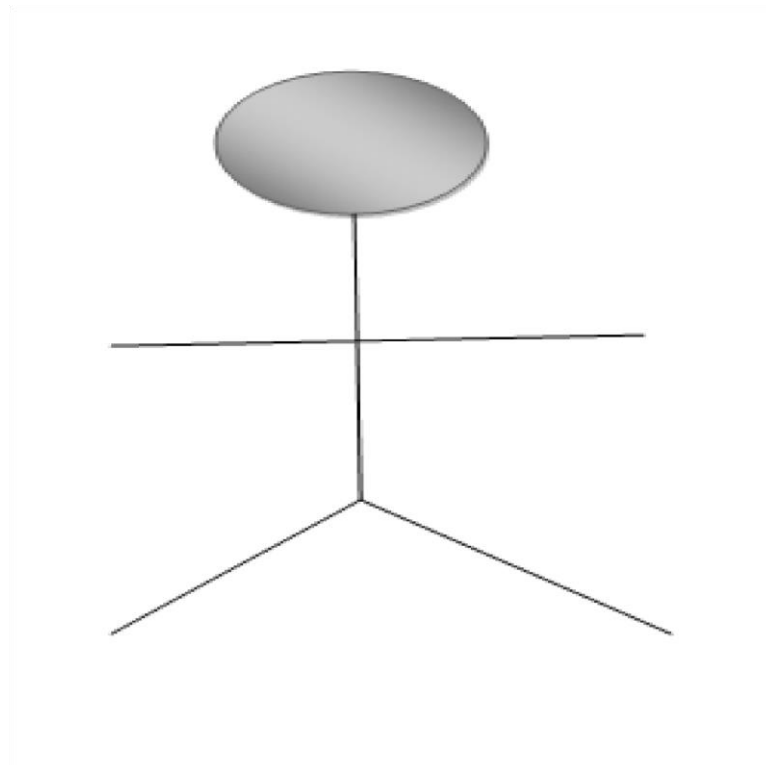


Figure III.1: Actor

Actor is a use case diagram in an entity that performs a role in one given system. This could be a person, organization or an external system usually drawn like skeleton.

## **Use case**

A use case represents a function or an action within the system. It's drawn as an oval and named with the function.



Figure III.2: Use Case

### **System**

System is used to define the scope of the use case and drawn as a rectangle. This is an optional element but useful when your visualizing large systems. For example you can create all the use cases and then use the system object to define the scope covered by your project. Or you can even use it to show the different areas covered in different releases.

### **Package**

Package is another optional element that is extremely useful in complex diagrams. Similar to use class diagrams, packages are used to group together use cases.

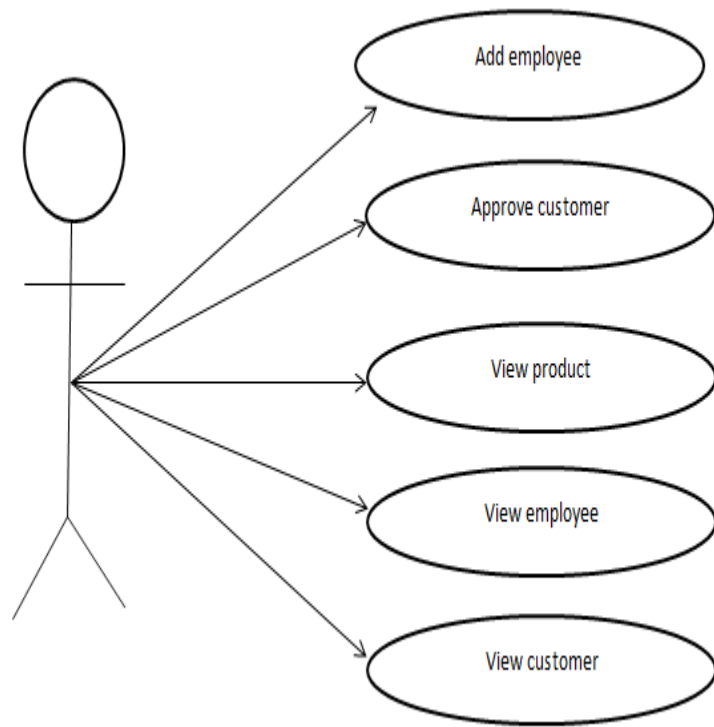


Fig11.1: Use case diagram for Admin

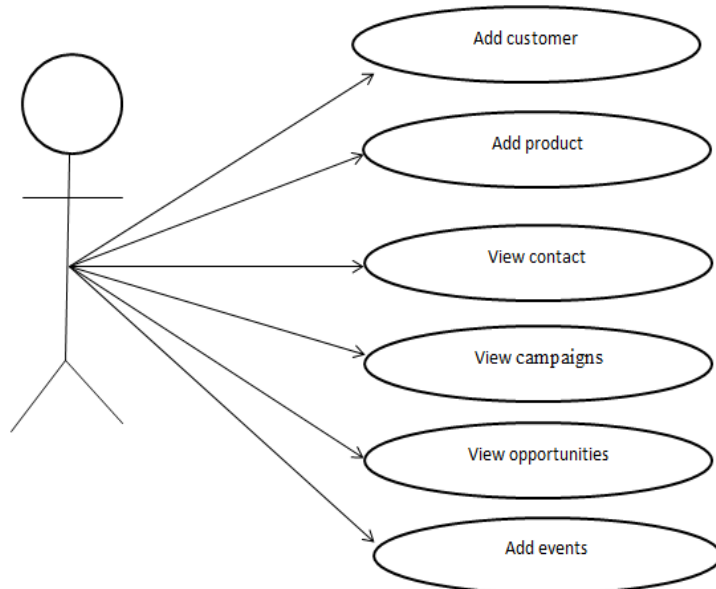


Fig11.2: Use case diagram for Employee

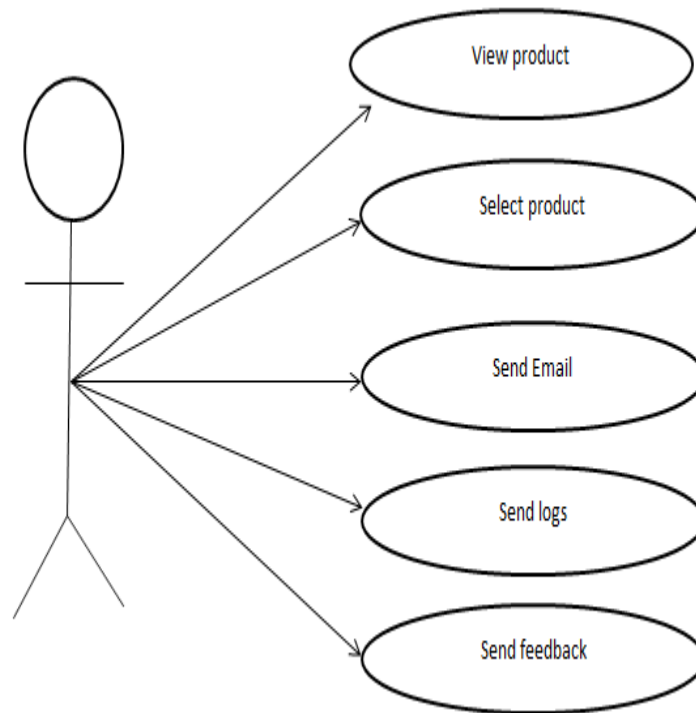


Fig11.3: Use case diagram Customer

### III.3.2 Sequence Diagram

UML sequence diagrams are used to represent or model the flow of messages, events and actions between the objects or components of a system. Time is represented in the vertical direction showing the sequence of interaction of the header elements.

Sequence Diagrams are used primarily to design, document and validate the architecture, interfaces and logic of the system by describing the sequence of actions that need to be performed to complete a task. UML sequence diagrams are useful design tools because they provide a dynamic view of the system behavior which can be difficult to extract from static diagrams or specifications.

Although UML sequence diagrams are typically used to describe object-oriented software systems, they are also extremely useful as system engineering tools to design system



architectures in business process, as message sequence charts and call flows for telecoms or wireless system design, and for protocol stack design and analysis.

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence Diagrams are typically associated with use case realizations in the logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios.

A sequence diagram shows, as parallel vertical lines (lifelines), different processes or objects that live simultaneously, and, as horizontal arrows, the messages exchanged between them, in the order in which they occur. This allows the specification of simple runtime scenarios in a graphical manner.

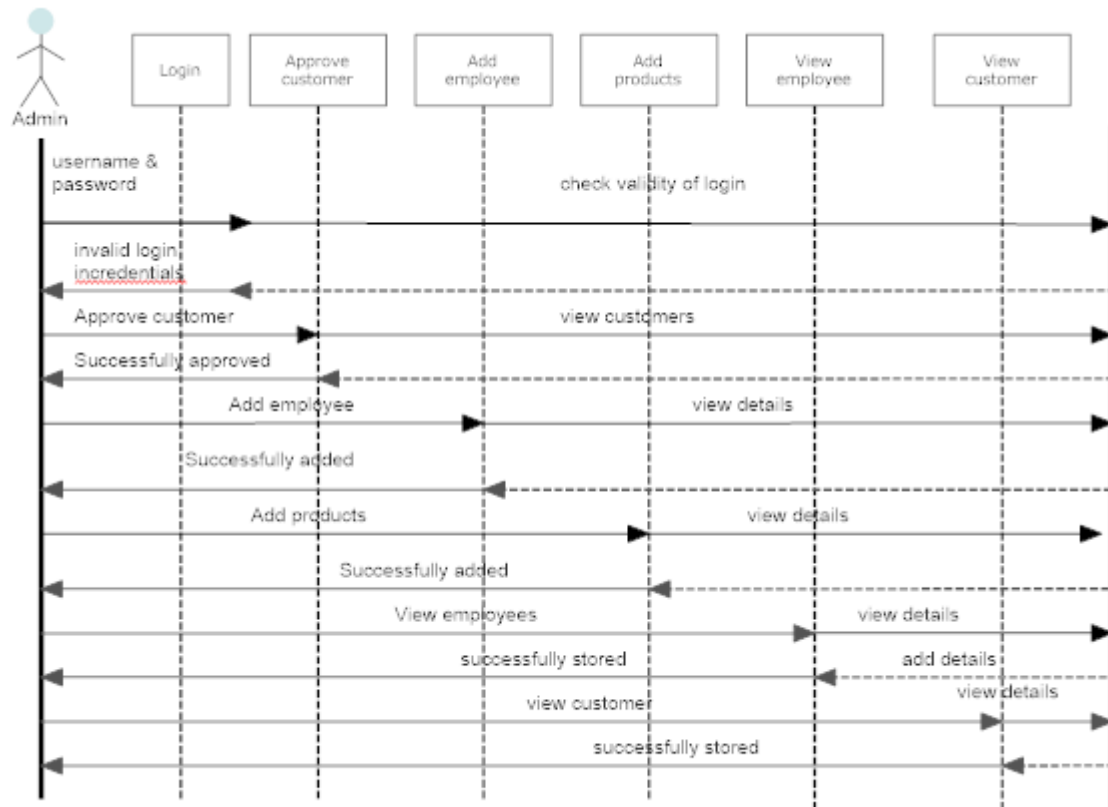


Figure III.1: Sequence diagram for Admin

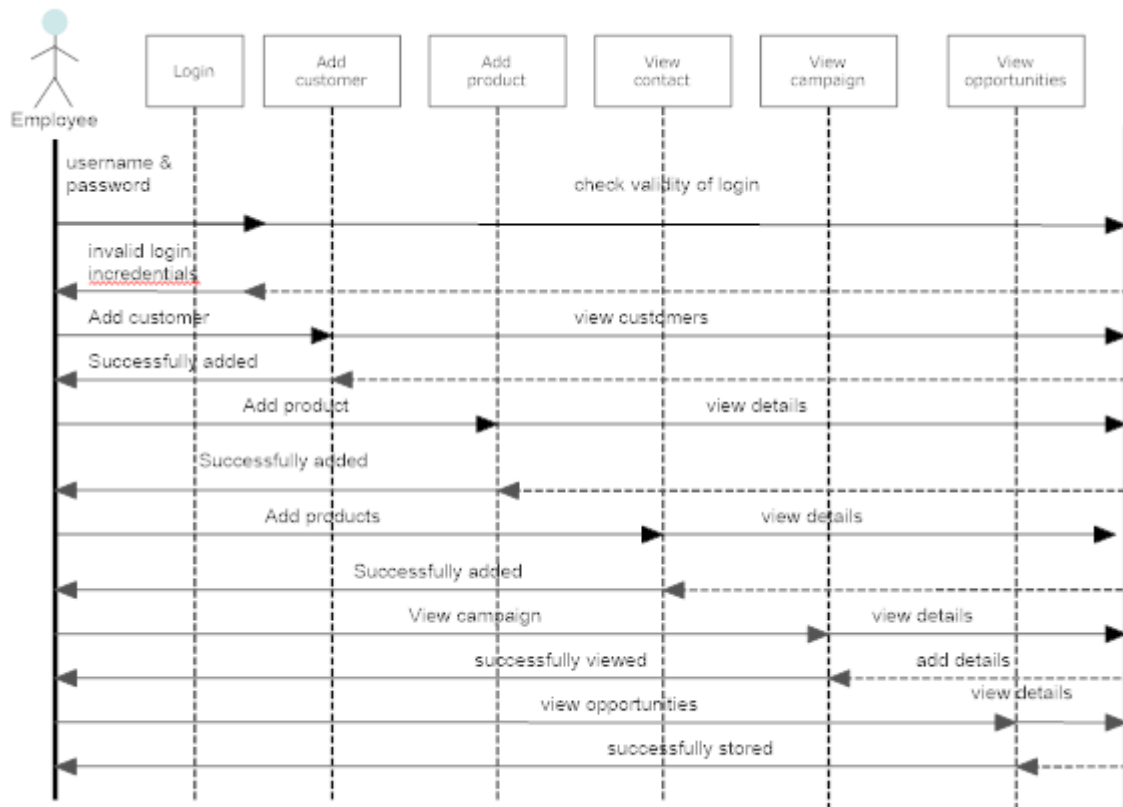


Figure III.2: Sequence diagram for Employee

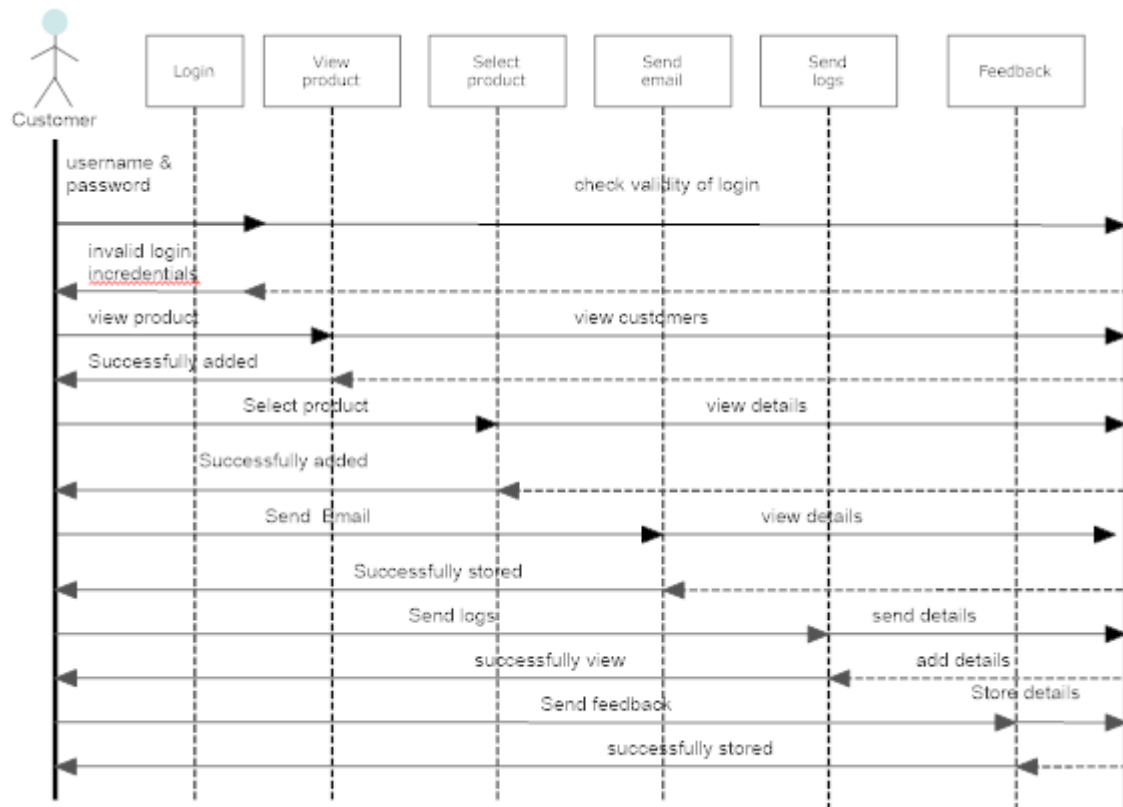


Figure III.3: Sequence diagram for Customer

### III.3.3 Activity Diagram

The basic purposes of activity diagrams are similar to other four diagrams. It captures the dynamic behaviour of the system. Other four diagrams are used to show the message flow from one object to another but activity diagram is used to show message flow from one activity to another.

Activity is a particular operation of the system. Activity diagrams are not only used for visualizing the dynamic nature of a system, but they are also used to construct the executable system by using forward and reverse engineering techniques. The only missing thing in the activity diagram is the message part.

It does not show any message flow from one activity to another. Activity diagram is sometimes considered as the flowchart. Although the diagrams look like a flowchart, they are not. It shows different flows such as parallel, branched, concurrent, and single.

Activity diagrams are mainly used as a flowchart that consists of activities performed by the system. Activity diagrams are not exactly flowcharts as they have some additional capabilities. These additional capabilities include branching, parallel flow, swimlane, etc.

Before drawing an activity diagram, we must have a clear understanding about the elements used in activity diagram. The main element of an activity diagram is the activity itself. An activity is a function performed by the system. After identifying the activities, we need to understand how they are associated with constraints and conditions.

Before drawing an activity diagram, we should identify the following elements –

- Activities
- Association
- Conditions
- Constraints

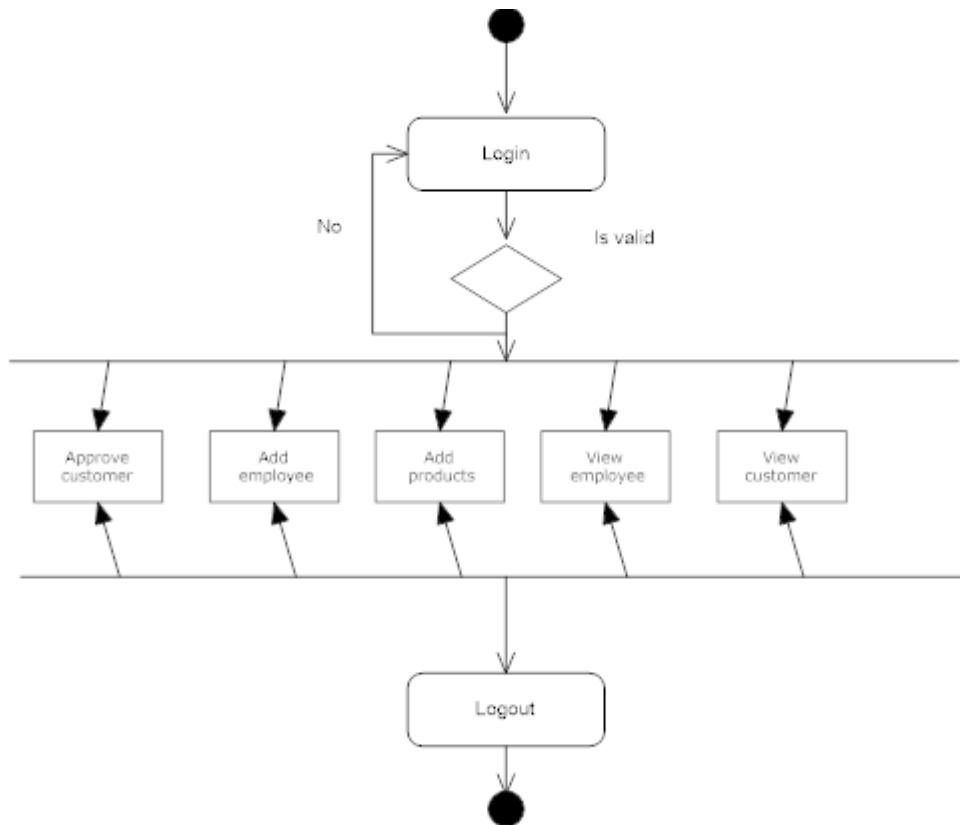


Figure III.4: Activity diagram for Admin

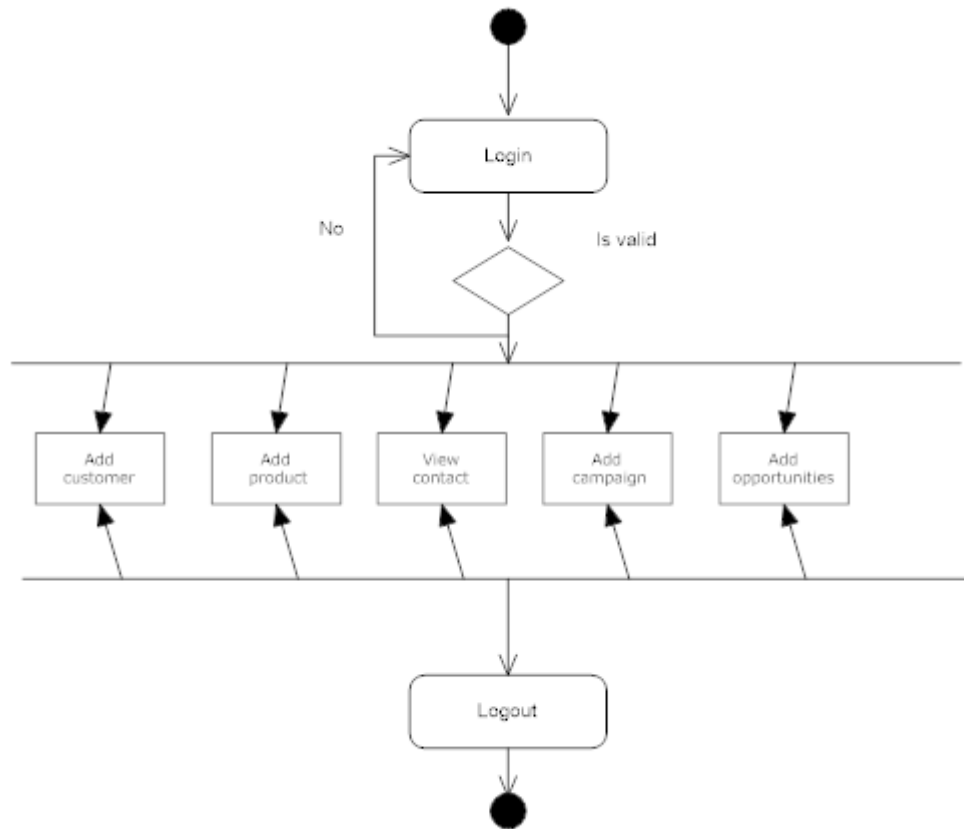


Figure III.5: Activity diagram for Employee

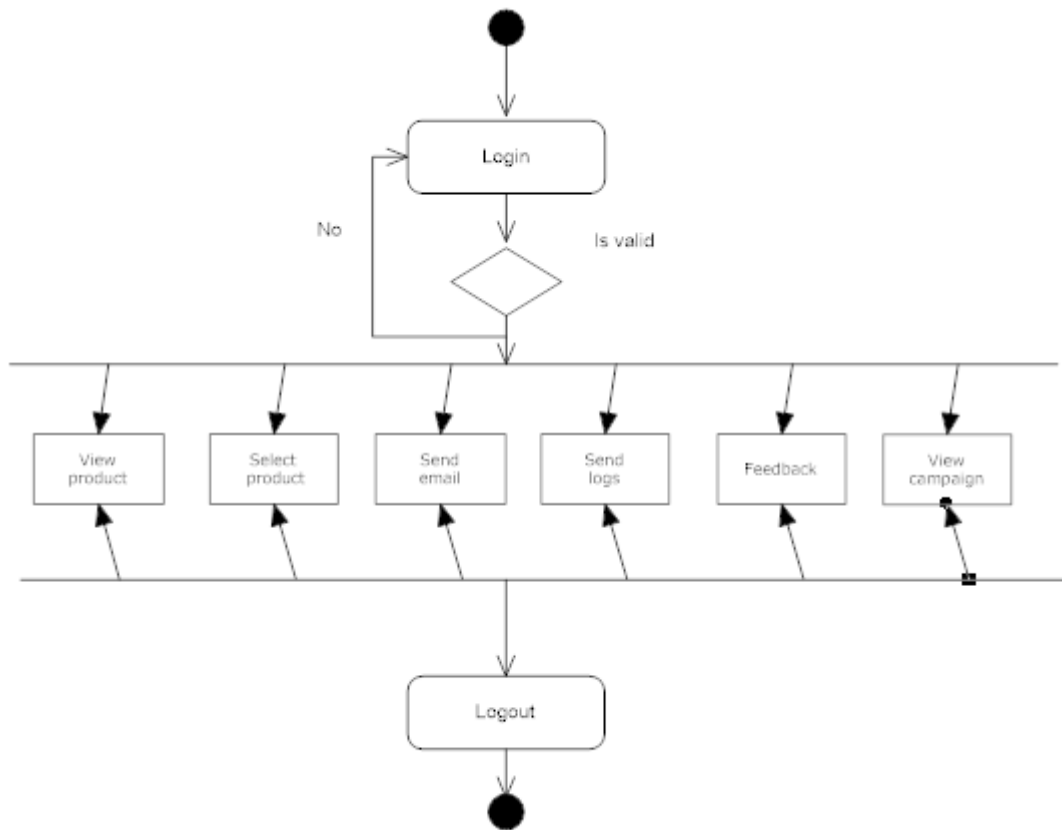


Figure III.6: Activity diagram for Customer

### III.4 SYSTEM DESIGN

The most creative and challenging phase of the system life cycle is the system design. The term design describes a final system and the process by which it is developed. It refers to the technical specification that will be applied in implementing the candidate system. In system design, we move from the logical to the physical aspects of the life cycle.

The first step is to determine how the output is to be produced and in what format. Then input data and master files have to be designed as the next step and finally the impact of the candidate system on the user and organization are documented and evaluated by the



management. After identifying the problem and the limitation of the existing system, a detailed design of the proposed system is conducted.

Free flow personnel interview and reference to previous records prepared manually were the only methods taken to collect necessary information. At present, all organizations are on the path of computerization process.

Design is the phase that indicates the final system. It is the solution, the translation of requirements into ways of meeting them. In this phase the following elements were designed namely, data flow, data stores, processes, procedures was formulated in a manner that meet the project requirements. After logical design physical construction of the system is done.

The database tables, input screens, output screens, output reports are designed. After analysing the various functions involved in the system the database, labels as dictionaries designed. Care is taken for the field name to be in self-explanatory form. Unnecessary fields are avoiding so as not affecting the storage system.

Care must be taken to design the input screen in the most user-friendly way so as to help even the novice users to make entries approximately in the right place. This is being accomplished by the use of giving online help messages, which are brief and cleanly prompts users for appropriate action.

Design is the only way that we can accurately translate a customer's requirements into a finished software product or system. Without design, risk of building an unstable system exist one that will fail when small changes are made, one that will be difficult to test.

All input screens in the system are user friendly and are designed in such a way that even a layman can operate. The sizes of all screens are standardized.

Reports generated in this software give the finer accepts of the required information, which helps in taking vital decision.

The importance of the software design can be stated with a single word quality. Design is a place where quality is fostered in software development. Design is the only way where requirements are actually translated into a finished software product or system.

**Mainly this project consists of 3 Modules:**

- **Admin**
- **Employee**
- **Customer**

### **Admin Module**

Administrator is the main actor in this system. He has the entire control of the system which includes viewing the properties uploaded by the property owners for rent and also for selling. He can also see the report regarding the booking of property for site visit. He also have an report of registered owners and the registered users.

### **Admin Login**

- Login
- Approve Customer
- Add Employee
- Add Product
- View Employees
- View Customers

## **Employee Login**

- Login
- Add Customer
- Add Product
- View Contact
- Add Campaign
- Add Opportunities
- View Feedback

## **Customer**

- Login
- View Products
- Select Products
- Send Email
- Send Logs
- Feedback

### **III.4.1 Input Design**

Input design is the process of converting a user oriented description of the inputs to a computer based business system into a programmer oriented specification. The design decision for handling input specify how data are accepted for computer processing. Input design is a part of overall design that needs careful attention. The collection of input data is considered to be the most expensive part of the system design. Since the inputs have to be planned in such a way so as to get the relevant information, extreme care is taken to obtain the pertinent information. If the data going into the system is incorrect then the processing and outputs will magnify these errors. The goal of designing input data is to make data entry as easy, logical and free from errors as possible. The following are the objectives of input design:

- To produce a cost effective method of input.
- To ensure validation

Effort has been made to ensure that input data remains accurate from the stage at which it is recorded and documented to the stage at which it is accepted by the computer. Validation procedures are also present to detect errors in data input, which is beyond control procedures. Validation procedures are designed to check each record, data item or field against certain criteria.

In my proposed system Image Compression, data has to be accurate and complete. If not, error messages are displayed to the user and he is unable to proceed to the next stage of action unless he corrects his data. Duplicate entries are not allowed. The data validation, a procedure of the proposed system, provides program checks for the completeness, consistency, reasonableness and sequence of the system.

Maximum care has been taken to ensure that user types in only minimum data into the system, as all he/she will have to do is to move and click the mouse or strike a key to select the desired data at the desired position.

The screens are designed in such a way that the user can find the needed like options, actions etc. with ease of use. The needed columns, where interaction is needed, like labels, buttons are also simple. The related data columns are clubbed together as groups, so that the user can understands the related data easily.

The input design is the link between the information system and the user. It comprises developing specifications and procedures for data preparation and those steps that are necessary to put input data into a usable form for processing data entry. The design of inputs focuses on controlling the amount of inputs required, controlling errors, avoiding delay, avoiding extra steps and keeping the process simple.

### III.4.2 Data Flow Diagram

Data flow diagram is the graphical representation of the system. It is a network that uses special symbols to describe the flow of data and process that transforms data throughout the system.

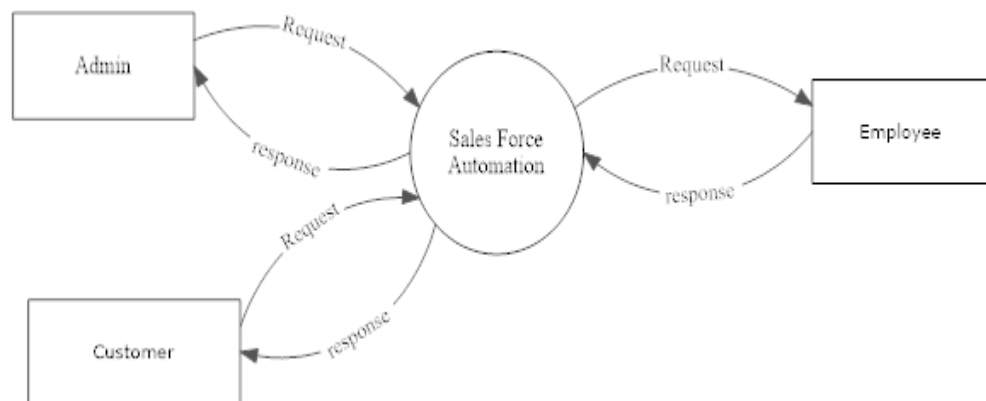


Figure III.7: Level 0 DFD

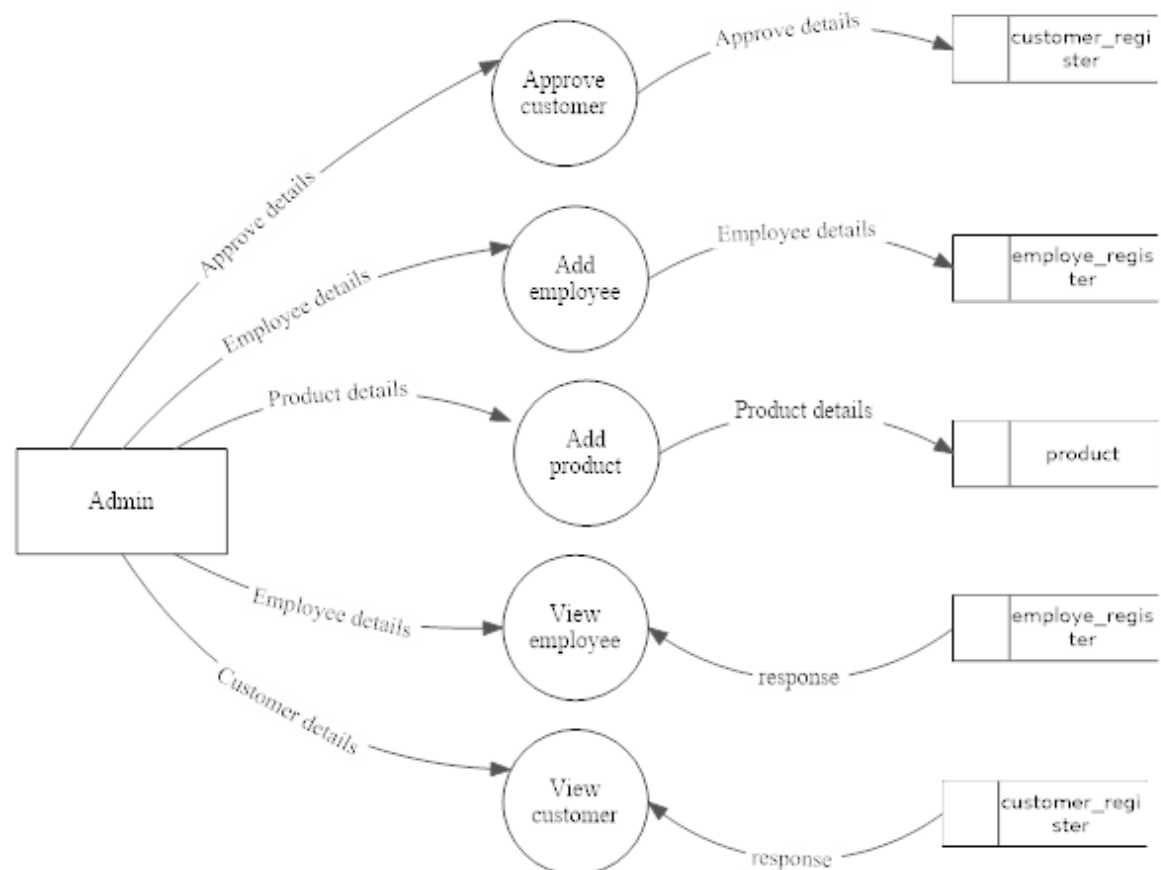


Figure III.8: Level 1 DFD for Admin

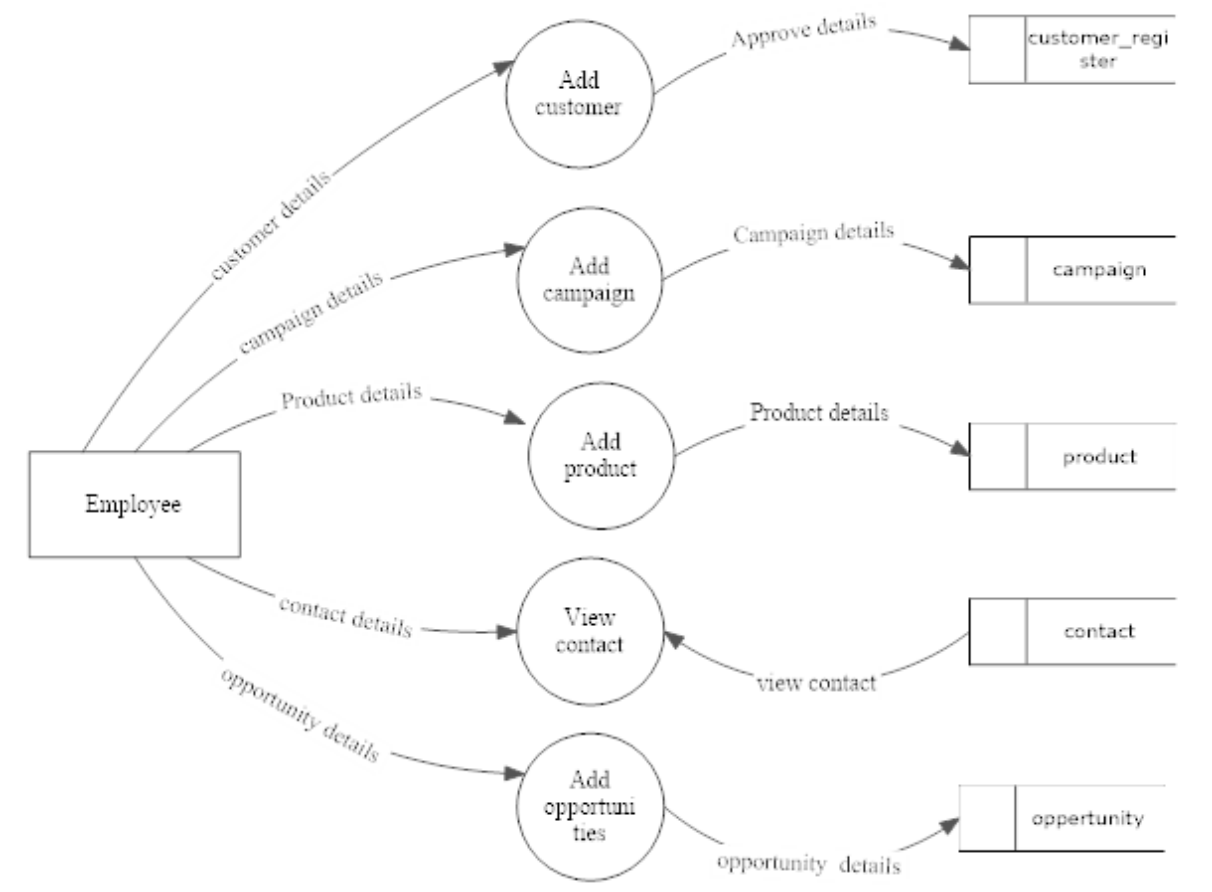


Figure III.9: Level 1 DFD for Employee

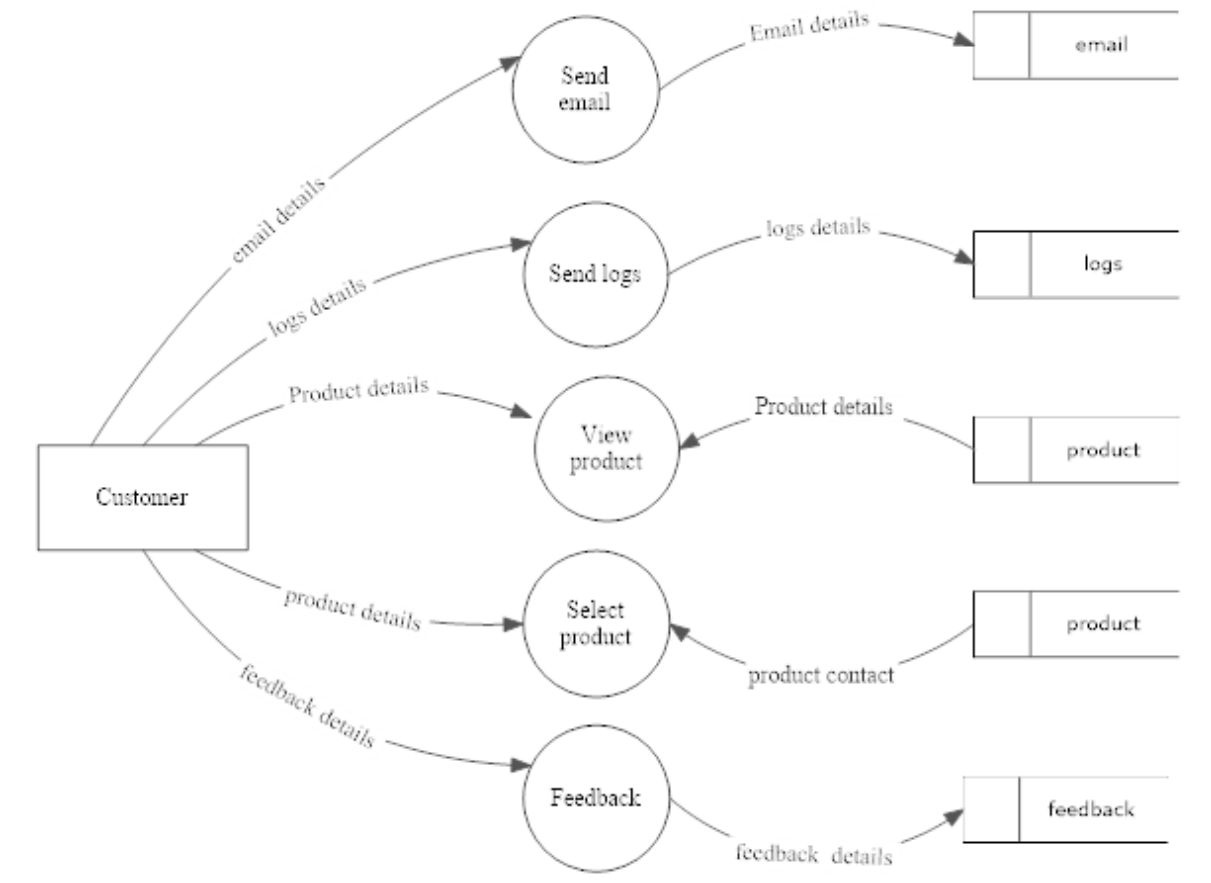


Figure III.10: Level 1 DFD for Customer



### **III.4.3 Output Design**

The output design phase of the system design is concerned with the conveyance of information to the end users in user friendly manner. The output design should be efficient, intelligible so that the system relationship with the end user is improved and thereby enhancing the process of decision making. The output design is an ongoing activity almost from the beginning of the project, efficient and well defined output design improves the relation of the system and the user. The primary considerations in the design of the output are the requirement of the information and the objective of the end user. There are various types of outputs required by most of the systems, but outputs of Image Compression are purely interactive outputs which involve the user in communicating with the computer.

The system output may be of any of the following

- A report
- A document
- A message

The output design specification is made in such a way that it is unambiguous and comprehensive. The approach to output design is very dependent on the type of output and nature of data. Special attention has to be made to data editing. The choice of appropriate output medium is also an important task. The output designed must be specified and documented, data items have to be accurately defined and arranged for clarity. The layout of the output will be normally specified on a layout chart. The final design layout must be approved by the user, communicated in detailed to the programmer. The user's requirements are quite different from that of the programmer. Before preparing a specification for the programmer, it is prudent to ensure that the design is acceptable to the user.

### III.4.4 Database Design

#### TABLES

##### III.1 CUSTOMER TABLE

FIELD NAME	DATATYPE	DESCRIPTION
Id	Int	Id of customer
Name	Varchar	Name of customer
Address	Varchar	Address
Gender	Varchar	Gender
Mobile no	Int	Mobile no
Email	Varchar	Email
Gst	Int	Gst details
Subject	Varchar	Subject

Primary key: id

##### III.2 EMPLOYEE TABLE

FIELD NAME	DATATYPE	DESCRIPTION
Emp_id	Int	Id for Employee
Name	Varchar	Employee name
Phone	Int	Phone number
Address	Varchar	Address
Email	Varchar	Email
Username	Varchar	Username
Password	Varchar	Password
Ifsc	Int	Ifsc code
Bank	Varchar	Bank
Accno	Int	Account number

Foreign key: emp\_id

-  
-

### III.3 CONTACT TABLE

FIELD NAME	DATATYPE	DESCRIPTION
Name	Varchar	Name of the customer
Department	Varchar	Department
Email	Varchar	Email
Account name	Varchar	Account name
Street	Varchar	Street name
City	Varchar	City name
State	Varchar	State name
Postal code	Int	Postal code
Country	Varchar	Country
Description	Varchar	Description

Primary key: name

### III.4 EMAIL TABLE

FIELD NAME	DATATYPE	DESCRIPTION
From	Varchar	From email
To	Varchar	To email
Subject	Varchar	Subject
Body	Varchar	Body

Primary key: from

-  
-

-  
-  
-

### III.5 OPPORTUNITY TABLE

<b>FIELDNAME</b>	<b>DATATYPE</b>	<b>DESCRIPTION</b>
Oid	Int	Id for opportunity
Name	Varchar	Name of opportunity
Account name	Varchar	Account name
Expectedclosed_date	Date	Expected closed date
Status	Varchar	Status of opportunity
Tags	Varchar	Tags
Lead Source	Varchar	Customer source
Campaign	Varchar	Campaign
Description -	Varchar	Description of opportunity
Assignedto	Varchar	Assigned data

Primary key: oid

### III.6 CAMPAIGN TABLE

<b>FIELD NAME</b>	<b>DATATYPE</b>	<b>DESCRIPTION</b>
Name -	Varchar	Name of campaign
Date -	Int	Date of campaign
Assigned To	Varchar	Assigned to
Status	Varchar	Status of campaign
Budget	Int	Budget
Exp.revenue	Int	Expected revenue
End date	Int	End date
Type	Varchar	Type of campaign
Exp.cost	Int	Expected cost
Actual cost	Int	Actual cost
Objective	Varchar	Objective
Description	Varchar	Description

Primary key: objective

### III.7 LOG TABLE

<b>FIELDNAME</b>	<b>DATATYPE</b>	<b>DESCRIPTION</b>
Title	Varchar	Title
Body	Varchar	Body

Primary key: title

### III.8 FEEDBACK TABLE

<b>FIELD NAME</b>	<b>DATATYPE</b>	<b>DESCRIPTION</b>
Fid	Integer	Id of Each Feedback
From	Varchar	Name of customer
Content	Varchar	feedback

Primary key: fid

### III.9 EVENT TABLE

<b>FIELDNAME</b>	<b>DATATYPE</b>	<b>DESCRIPTION</b>
Eventsubject	Varchar	Event subject
Location	Varchar	Location
Start time	Int	Start time
End time	Int	End time
Agenda	Varchar	Agenda

Primary key: eventsubject

## **III.5 TOOLS AND PLATFORMS**

### **III.5.1 Python**

Python is an interpreted high level programming language for general purpose programming. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales. In July 2018, Van Rossum stepped down as the leader in the language community after 30 years.

Python features a dynamic type system and automatic memory management. It supports multiple programming paradigms, including object oriented, imperative, functional and procedural, and has a large and comprehensive standard library.

Python interpreters are available for many operating systems. CPython, the reference implementation of Python, is open source software and has a community based development model, as do nearly all of Python's other implementations. Python and CPython are managed by the non profit Python Software Foundation.

#### **Python Environment:**

A Python environment is a child/offshoot of a parent python distribution which allows you to use the packages in the parent distribution as well as to install packages that are only visible to the child distribution.

#### **Python Language:**

Python is a powerful high level, object oriented programming language created by Guido van Rossum. It has simple easy to use syntax, making it the perfect language for someone trying to learn computer programming for the first time.

Python is a general purpose language. It has wide range of applications from Web development (like: Django and Bottle), scientific and mathematical computing (Orange, SymPy, NumPy) to desktop graphical user Interfaces (Pygame, Panda3D).

The syntax of the language is clean and length of the code is relatively short. It's fun to work in Python because it allows you to think about the problem rather than focusing on the syntax.

### **Python Runtime Environment:**

The runtime environment used to execute the code. It is made up of the Python language and Python interpreter. It is portable and it is platform neutral.

### **Python tools:**

It is used by the developers to create Python code. They include Python compiler, Python interpreter, classes, libraries etc.

### **Python Application:**

Applications are programs written in Python to carry out certain tasks on standalone local computer. Python source code is automatically compiled into Python byte code by the CPython interpreter. Compiled code is usually stored in PYC (or PYO) files, and is regenerated when the source is updated, or when otherwise necessary.

To distribute a program to people who already have Python installed, you can ship either the PY files or the PYC files. In recent versions, you can also create a ZIP archive containing PY or PYC files, and use a small “bootstrap script” to add that ZIP archive to the path.

## **III.5.2 Django Framework**

Django is a high level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid for support.

Django helps you write software that is:

## **Complete**

Django follows the "Batteries included" philosophy and provides almost everything developers might want to do "out of the box". Because everything you need is part of the one "product", it all works seamlessly together, follows consistent design principles, and has extensive and up to date documentation.

## **Versatile**

Django can be (and has been) used to build almost any type of website — from content management systems and wikis, through to social networks and news sites. It can work with any client side framework, and can deliver content in almost any format (including HTML, RSS feeds, JSON, XML, etc). The site you are currently reading is based on Django!

Internally, while it provides choices for almost any functionality you might want (e.g. several popular databases, templating engines, etc.), it can also be extended to use other components if needed.

## **Secure**

Django helps developers avoid many common security mistakes by providing a framework that has been engineered to "do the right things" to protect the website automatically. For example, Django provides a secure way to manage user accounts and passwords, avoiding common mistakes like putting session information in cookies where it is vulnerable (instead cookies just contain a key, and the actual data is stored in the database) or directly storing passwords rather than a password hash.

A password hash is a fixed length value created by sending the password through a cryptographic hash function. Django can check if an entered password is correct by running it through the hash function and comparing the output to the stored hash value. However due to the "one way" nature of the function, even if a stored hash value is compromised it is hard for an attacker to work out the original password.

Django enables protection against many vulnerabilities by default, including SQL injection, cross-site scripting, crosssite request forgery and clickjacking (see Website security for more details of such attacks).

## **Scalable**

Django uses a component based “shared-nothing” architecture (each part of the architecture is independent of the others, and can hence be replaced or changed if needed). Having a clear separation



between the different parts means that it can scale for increased traffic by adding hardware at any level: caching servers, database servers, or application servers. Some of the busiest sites have successfully scaled Django to meet their demands (e.g. Instagram and Disqus, to name just two).

## **Maintainable**

Django code is written using design principles and patterns that encourage the creation of maintainable and reusable code. In particular, it makes use of the Don't Repeat Yourself (DRY) principle so there is no unnecessary duplication, reducing the amount of code. Django also promotes the grouping of related functionality into reusable "applications" and, at a lower level, groups related code into modules (along the lines of the Model View Controller (MVC) pattern).

## **Portable**

Django is written in Python, which runs on many platforms. That means that you are not tied to any particular server platform, and can run your applications on many flavours of Linux, Windows, and Mac OS X. Furthermore, Django is well supported by many web hosting providers, who often provide specific infrastructure and documentation for hosting Django sites.

### **III.5.3 Python - Spacy**

Spacy is a relatively new package for “Industrial strength NLP in Python” developed by Matt Honnibal at Explosion AI. It is designed with the applied data scientist in mind, meaning it does not weigh the user down with decisions over what esoteric algorithms to use for common tasks and it's fast. Incredibly fast (it's implemented in Cython). If you are familiar with the Python data science stack, spacy is your numpy for NLP – it's reasonably low level, but very intuitive and performant.

Spacy provides a one stop shop for tasks commonly used in any NLP project, including:

- Tokenisation
- Lemmatisation
- Part-of-speech tagging
- Entity recognition
- Dependency parsing
- Sentence recognition
- Word-to-vector transformations
- Many convenience methods for cleaning and normalizing text

### **III.5.4 Django – Crispy – Forms**

Django-crispy-forms is a Django application that lets you easily build, customize and reuse forms using your favorite CSS framework, without writing template code and without having to take care of annoying details. Django-crispy-forms implements a class called FormHelper that defines the form rendering behavior. Helpers give you a way to control form attributes and its layout, doing this in a programatic way using Python. This way you write as little HTML as possible, and all your logic stays in the forms and views files.

### **III.5.5 Python – xhtml2pdf**

xhtml2pdf is a HTML/XHTML/CSS to PDF converter written in Python and based on Reportlab Toolkit, pyPDF, TechGame Networks CSS Library and HTML5lib. The primary focus is not on generating perfect printable webpages but to use HTML and CSS as commonly known tools to generate PDF files within Applications. For example generating documentations (like this one), generating invoices or other office documents etc.xhtml2pdf enables users to generate PDF documents from HTML content easily and with automated flow control such as pagination and keeping text together. The Python module can be used in any Python environment, including Django.

xhtml2pdf is a html2pdf converter using the ReportLab Toolkit, the HTML5lib and pyPdf. It supports HTML 5 and CSS 2.1 (and some of CSS 3). It is completely written in pure Python so it is platform independent.The main benefit of this tool that a user with Web skills like HTML and CSS is able to generate PDF templates very quickly without learning new technologies.xhtml2pdf was previously developed as "pisa".

### **III.5.6 Pycharm IDE 3.4**

JetBrains has developed PyCharm as a cross-platform IDE for Python. In addition to supporting versions 2.x and 3.x of Python, PyCharm is also compatible with Windows, Linux, and macOS. At the same time, the tools and features provided by PyCharm help programmers to write a variety of software applications in Python quickly and efficiently. The developers can even customize the PyCharm UI according to their specific needs and preferences. Also, they can extend the IDE by choosing from over 50 plugins to meet complex project requirements.

## **Important Features and Tools Provided by PyCharm**

### **Code Editor**

The intelligent code editor provided by PyCharm enables programmers to write high quality Python code. The editor enables programmers to read code easily through colour schemes, insert indents on new lines automatically, pick the appropriate coding style, and avail context-aware code completion suggestions. At the same time, the programmers can also use the editor to expand a code block to an expression or logical block, avail code snippets, format the code base, identify errors and misspellings, detect duplicate code, and auto generate code. Also, the editor makes it easier for developers to analyze the code and identify the errors while writing code.

### **Code Navigation**

The smart code navigation options provided by PyCharm help programmers to edit and improve code without putting extra time and effort. The IDE makes it easier for programmers to go to a class, file and symbols, along with the go to declarations invoked from a reference. The user can even find an item in the source code, code snippet, UI element, or user action almost immediately. They can further locate usage of various symbols, and set bookmarks in the code. At the same time, the developers can even take advantage of the code navigation feature to scrutinize the code thoroughly in the lens mode.

### **Refactoring**

PyCharm makes it easier for developers to implement both local and global changes quickly and efficiently. The developers can even take advantage of the refactoring options provided by the IDE while writing plain Python code and working with Python frameworks. They can avail the rename and move refactoring for files, classes, functions, methods, properties, parameters, and local/global variables. Likewise, they can improve code quality by extracting variables, fields, constants, and parameters. Also, PyCharm allows programmers to break up longer classes and methods through extract method.

### **Support for Popular Web Technologies**

PyCharm makes it easier for programmers to write various web applications in Python supporting widely used web technologies like HTML, CSS, JavaScript, TypeScript and CoffeeScript. The web developers can use the live editing preview option provided by the IDE to view a single web page simultaneously in the editor and browser. At the same time, the live edit feature provided by the IDE

enables programmers to see the changes made to the code instantaneously on a web browser. PyCharm further allows developers to avail a JavaScript debugger as well as CoffeeScript and TypeScript editors. It even simplifies isomorphic web application development by supporting both AngularJS and NodeJS.

### **Support for Popular Python Web Frameworks**

In addition to supporting commonly used web technologies, PyCharm also provides first class support for a robust Python web framework like Django. The developers can use the IDE to avail code completion suggestions for Django tags, filters, parameters, and template variables. Also, they can gather additional information about tags and filters by referring to the quick documentation. The Python IDE even helps web developers to debug Django templates, format the code, verify the code, and manage .py consoles. At the same time, PyCharm also supports widely used Python web frameworks like Pyramid and Web2Py. It provides code completion and navigation options specific to Pyramid. Likewise, it allows web developers to avail code completion and navigation options while working with Web2Py.

### **Support for Python Scientific Libraries**

PyCharm further helps programmers to use Python more efficiently in big data and data science projects. It supports some of the widely used scientific libraries for Python—NumPy, Anaconda and Matplotlib. The developers can work efficiently with these scientific libraries by availing the interactive graphs, deep code insight, and array viewers provided by the IDE. They can even run the REPL Python console provided by PyCharm to avail robust features like on the fly syntax check and code inspection. At the same time, the programmers can also integrate the IDE seamlessly with IPython Notebook to create innovative solutions without putting extra time and effort.

### **Database Tools**

In addition to supporting various Python libraries and frameworks, PyCharm allows developers to work with a number of relational databases including Oracle, SQL Server, MySQL and PostgreSQL. The developers can further use the IDE to run queries, edit SQL code, browse data, alter table data, and alter/analyze schemas. PyCharm further supports SQLAlchemy library and inject SQL code into code written in various programming languages. The professional edition of the IDE further makes it easier for developers to handle large volumes of data efficiently through data grids.

## **Visual Debugger**

The visual debugger provided by the IDE helps programmers to debug Python, JavaScript, and Django code. The developers can use the inline debugger to see live debugging data directly on the editor. Likewise, they can debug multiple Python processes simultaneously and step through the code bypassing libraries. PyCharm further creates reusable and customizable configuration for each test script or debugger execution. The users even have option to facilitate remote debugging by integrating the visual debugger with remote interpreters.

## **Built-in Terminal**

PyCharm comes with local terminals for Windows, Linux, and macOS. The built-in terminal enables programmers to continue coding and testing without leaving the IDE. Also, the programmers can use the IDE to run Python files and configure custom Python environments according to precise project requirements. At the same time, they can run interactive Python or Django console directly in the IDE. The console provides useful features like code completion, automatic braces matching, and dynamic syntax change. The programmers even have option to integrate the console with both local and remote interpreters.

## **Support for Major Version Control Systems**

PyCharm allows developers to work with widely used version control systems like Git, Mercurial, Perforce and SVN. It even performs complex tasks like adding, removing, and deleting files automatically. The developers even have option to avail a number of features provided by the IDE regardless of their choice of version control system—grouping individual changes into multiple change lists, setting aside the changes to be restored, monitor changes made to the code repository by various users, and check the changes made to the code before being integrated into the local copy.

## **Software Testing**

Like other IDEs, PyCharm also comes with features and tools to simplify Python application testing. It allows developers to perform unit testing through popular Python testing frameworks like Nose, Attest and Doctests. The testers even have option to run individual or multiple test files and test classes. They can further integrate the IDE with Coverage.py to measure code coverage while testing the applications. While testing multi-threaded applications, the testers can use the thread concurrency visualization option provided by the IDE to control the application fully and efficiently.

## **CHAPTER IV**

### **SYSTEM TESTING**

#### **IV.1 TESTING METHODOLOGIES AND STRATEGIES**

Software testing is an integral part of to ensure software quality, some software organizations are reluctant to include testing in their software cycle, because they are afraid of the high cost associated with the software testing .There are several factors that attribute the cost of software testing. Creating and maintaining large number of test cases is a time consuming process. Furthermore, it requires skilled and experienced testers to develop great quality test cases.

Even with the wide availability of automation tools for testing, the degree of automation mostly remains at the automated test script level and generally significant amount of human intervention is required in testing. In addition data collected, as testing is conducted provides a good indication of software quality as a whole. The debugging process is the most unpredictable part of testing process. Testing begins at the module level and work towards the integration of entire computer based system. No testing is completed without verification and validation part.

The goal of verification and validation activities are to access and improve the quality of work products generated during the development and modification of the software. Testing plays a vital role in determining the reliability and efficiency of the software and hence is very important stage in software development. Tests are to be conducted on the software to evaluate its performance under a number of conditions. Ideally, it should do so at the level of each module and also when all of them are integrated to form the completed system.

In the project "OEMS" the testing has been successfully handled with the modules. The test data was given to each and every module in all respect and got the desired output. Each module that has been tested is found working properly.

### **IV.1.1 Unit Testing**

Here we test each module individually and integrated the overall system. Unit testing focuses verification efforts even in the smallest unit of software design in each module. This is known as "module testing". The modules of the "OEMS" are tested separately. This testing is carried out in the programming style itself. In this testing each module is focused to work satisfactorily as regard to expected output from the module. There are some validation checks for the fields. Unit testing gives stress on the modules of "OEMS" independently of one another, to find errors. Different modules are tested against the specifications produced during the design of the modules. Unit testing is done to test the working of individual modules with test servers. Program unit is usually small enough that the programmer who developed it can test it in a great detail. Unit testing focuses first on that the modules to locate errors. These error are verified and corrected and so that the unit perfectly fits to the project.

### **IV.1.2 Integration Testing**

Data can be lost across an interface, one module can have an adverse effect on the other sub-functions, when combined they may not perform the desired functions. Integrated testing is the systematic testing to uncover the errors within the interface. This testing is done with simple data and the developed system has run successfully with this simple data. The need for integrated system is to find the overall system performance. The Modules of this project are connected and tested.

After splitting the programs into units, the units were tested together to see the defects between each module and function. It is testing to one or more modules or functions together with the intent of finding interface defects between the modules or functions. Testing completed at as part of unit or functional testing, integration testing can involve putting together of groups of modules and functions with the goal of completing and verifying meets the system requirements.

### **IV.1.3 system Testing**

System testing focuses on testing the system as a whole. System Testing is a crucial step in Quality Management Process. In the Software Development Life Cycle, System Testing is the first level where the System is tested as a whole. The System is tested to verify whether it meets the functional and technical requirements. The application/System is tested in an environment that closely resembles the production environment where the application will be finally deployed.

The prerequisites for System Testing are:-

- All the components should have been successfully Unit Tested.
  - All the components should have been successfully integrated.
  - Testing should be completed in an environment closely resembling the production environment.
- When necessary iterations of System Testing are done in multiple environments.

#### IV.1.4 User Acceptance Testing

The system was tested by a small client community to see if the program met the requirements defined the analysis stage. It was found to be satisfactory. In this phase, the system is fully tested by the client community against the requirements defined in the analysis and design stages, corrections are made as required, and the production system is built. User acceptance of the system is key factor for success of the system.

#### TEST CASE

Test Step	Expected Result	Actual Result	Status
Click on the Login button without entering user name or password	Messages like "Please enter User Name" and "Please Enter Password" should appear.	Messages "Please enter User Name" and "Please Enter Password" appear.	Pass
Enter a non-existing user name password and click on the Login button	Message like "Invalid User Name" should appear	A message "Invalid User Name" appears	Pass
Enter a valid user name but wrong password and click on the Login button	Message like "Wrong Password" should appear	A message "Wrong Password" appears	pass
Enter a valid user name and password and click on the Login button	The page should be navigated to the home page	The page is navigated to the home page	pass

#### Test case for login page



Test Step	Expected Result	Actual Result	Status
Enter all fields and click Register button	The page should navigated to the Login page	The page is navigated to the login page	Pass
Enter all fields, but some fields are invalid	Message like "Invalid entry"	A message "Invalid Entry" appears	Pass
Click on Register button without filling all fields that are required	Messages like "Please fill all required fields" should appear.	A message "Please fill all required fields" appears	Pass

#### Test case for registration page

Test Step	Expected Result	Actual Result	Status
Enter all fields with valid entries & click SUBMIT button	Message like "Successfully Added" & The page should refresh	A message "Successful!!" appears and page is refreshed	Pass
Enter fields with invalid entries	Message like "Invalid entries" should appear	A message "Invalid Entry" appears	Pass
No fields are filled but click SUBMIT button	Message like "Fill all the fields" should appear	A message "Fill all required fields" appears	Pass

#### Test case for contact page

Test Step	Expected Result	Actual Result	Status
Enter all fields with valid entries & click ADD button	Message like "Successfully Loaded" & The page should refresh	A message "Successful!!" appears and page is refreshed	Pass
Enter fields with invalid entries	Message like "Invalid entries" should appear	A message "Invalid Entry" appears	Pass
No fields are filled but click ADD button	Message like "Fill all the fields" should appear	A message "Fill all required fields" appears	pass

#### Test case for opportunity page

## **CHAPTER V**

### **SYSTEM IMPLEMENTATION**

The implementation is one phase of software development. Implementation is that stage in the project where theoretical design is turned into working system. Implementation involves placing the complete and tested software system into actual work environment. Implementation is concerned with translating design specification with source code. The primary goal of implementation is to write the source code to its specification that can be achieved by making the source code clear and straight forward as possible. Implementation means the process of converting a new or revised system design into operational one. The three types of implementation are:-implementation of a computerized system to replace a manual system, implementation of a new system to replace existing one and implementation of a modified system to replace an existing one.

The implementation is the final stage and it is an important phase. It involves the individual programming; system testing, user training, and the operational running of developed proposed system that constitute the application subsystem. The implementation phase of the software development is concerned with translating design specification in the source code. The user tests the developed system and the changes are according to the needs. Before implementation, several tests have been conducted to ensure no errors encountered during the operation. The implementation phase ends with an evaluation of the system after placing it into operation of time. The validity and proper functionality of all the modules of the developed application is assured during the process of implementation. Implementation is the process of assuring that the information system is operational and then allowing user to take over its operation for use and evaluation. Implementation is the stage in the project where the theoretical design is turned into a working system. The implementation phase constructs, installs and operated the new system. The most crucial stage in achieving a new successful system is that it works effectively and efficiently.

## **CHAPTER VI**

### **CONCLUSION**

This project is an initial proposal to show that this kind of information system is a real benefit to agricultural based country. This system can be used in future by manipulating backup servers in each research Institute for efficient on line service.

This system is web-based application system with several features. All the suggestions forwarded in the software proposal have successfully been completed and the final threshold of the application has been crossed. The system has been designed in such a way that it can be modified with very little effort when such a need arises in the future.

This system is a web-based application that works on any available platform. The system is found to be work efficiently and effectively. New features can be added with slight modification of the software, which make it easy to expand the scope of the system. When we compare the proposed system with existing system, we found that the proposed system is more reliable, flexible and secure in comparison with existing system. Also, the system is capable for handling the problems. It also reduces the cost and saves the time.

## REFERENCES

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2. <https://docs.djangoproject.com/en/2.2/>
3. <https://django-crispy-forms.readthedocs.io/en/latest/>
4. <https://spacy.io/api/doc>
5. <https://xhtml2pdf.readthedocs.io/en/latest/>
6. <https://www.w3schools.com/>
7. <https://getbootstrap.com/docs/4.0/getting-started/introduction/>
8. <https://simpleisbetterthancomplex.com/>
9. <https://stackoverflow.com/>
10. <https://codereview.stackexchange.com/questions/tagged/python>

# APPENDIX A

## APPENDICES

### A.1 SCREEN SHOTS INPUT FORM, OUTPUT FORMS

#### A.1 SCREEN SHOTS



Figure A.1: Home Page

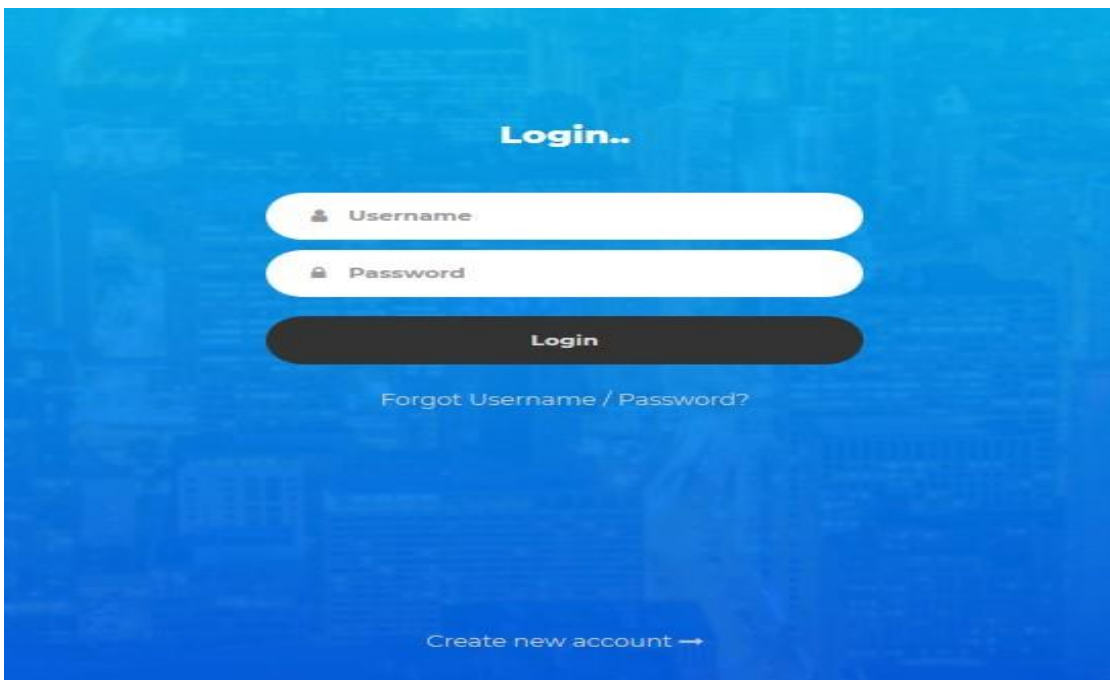


Figure A.2: Login Page

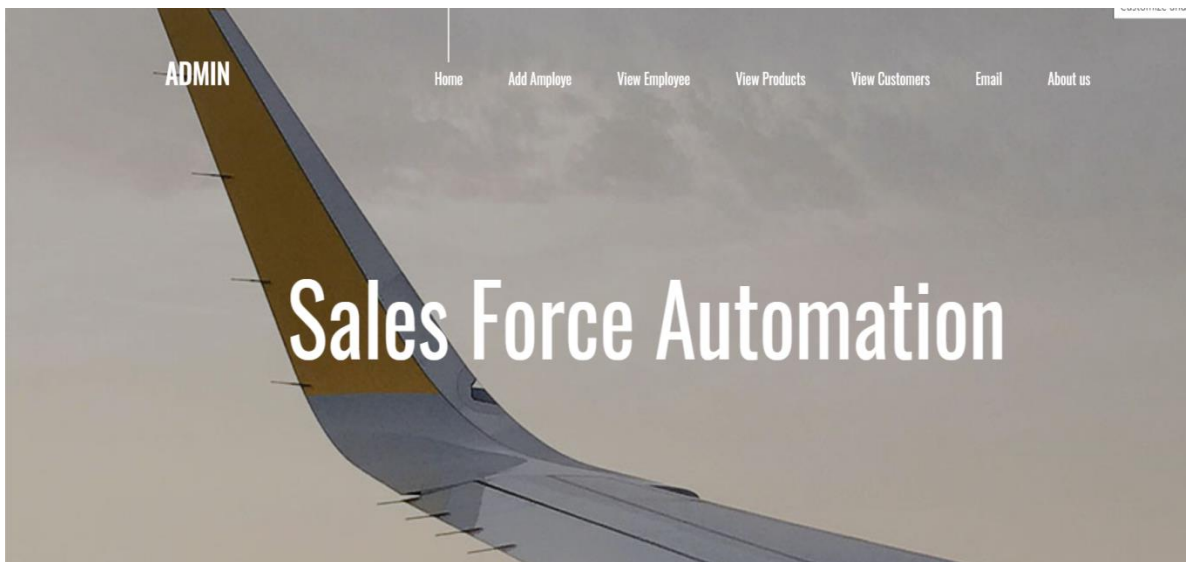


Figure A.3: Admin Home Page

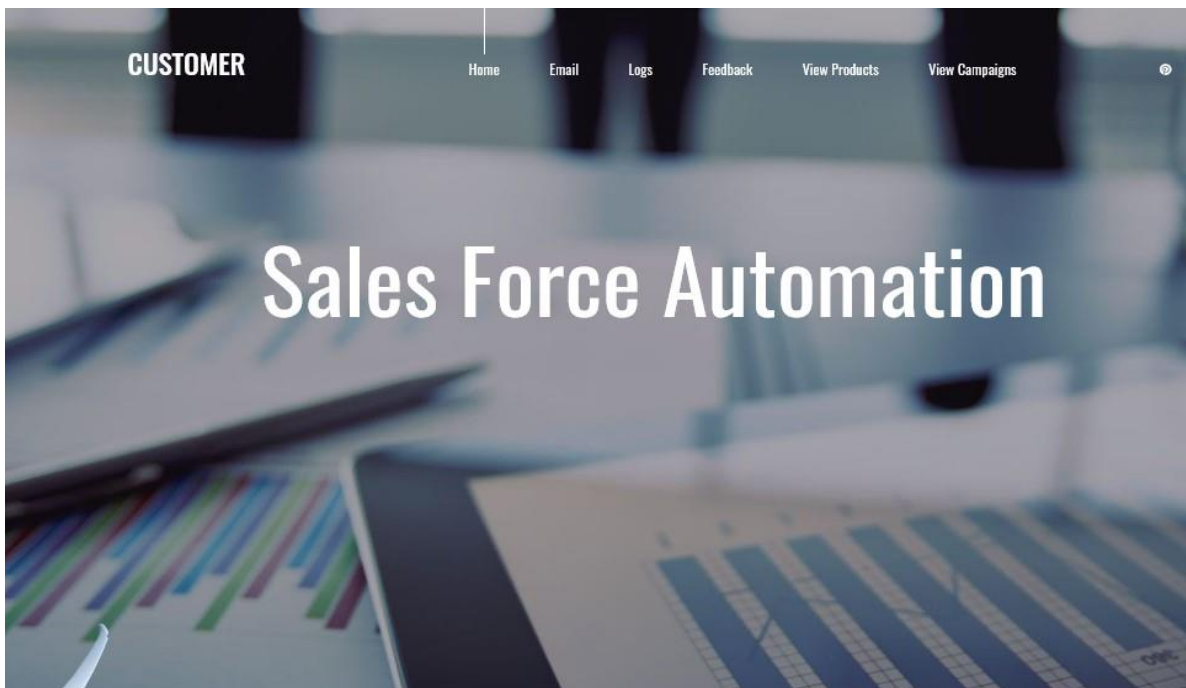
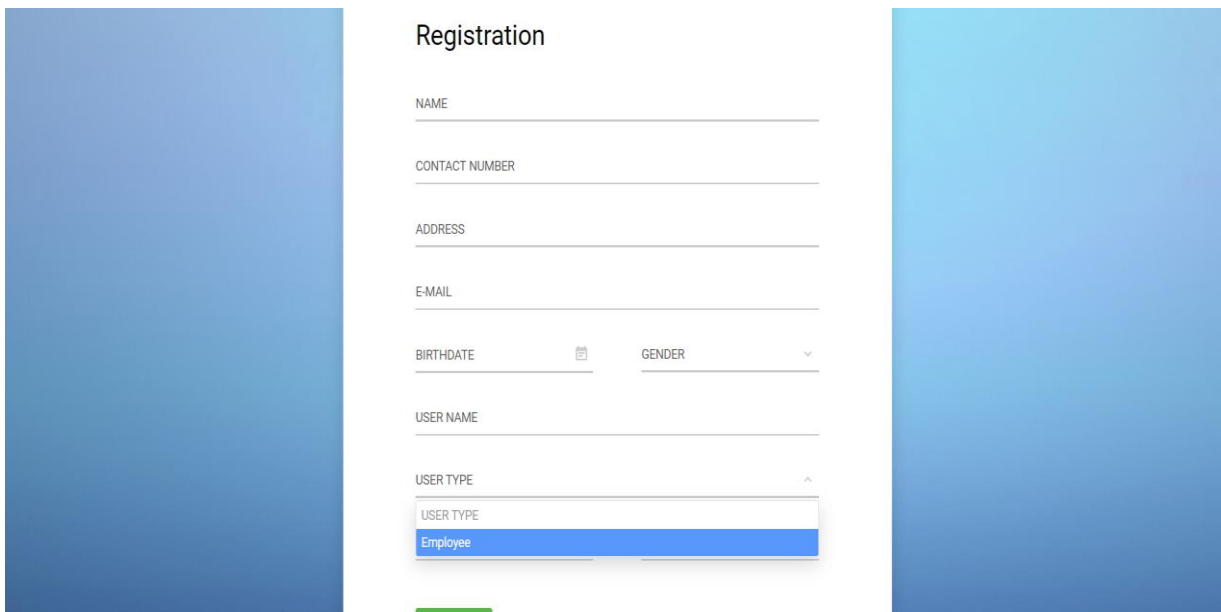


Figure A.4: Customer Home Page



The registration form is titled "Registration" and is centered on a white background. It is flanked by two vertical blue gradient bars. The form contains several input fields: "NAME", "CONTACT NUMBER", "ADDRESS", "E-MAIL", "BIRTHDATE" (with a calendar icon), "GENDER" (with a dropdown arrow), "USER NAME", and "USER TYPE" (with an upward arrow). The "USER TYPE" dropdown is open, showing "USER TYPE" and "Employee" as options. A green progress bar is located at the bottom of the form.


Registration


NAME

CONTACT NUMBER


ADDRESS

E-MAIL

BIRTHDATE 

GENDER 

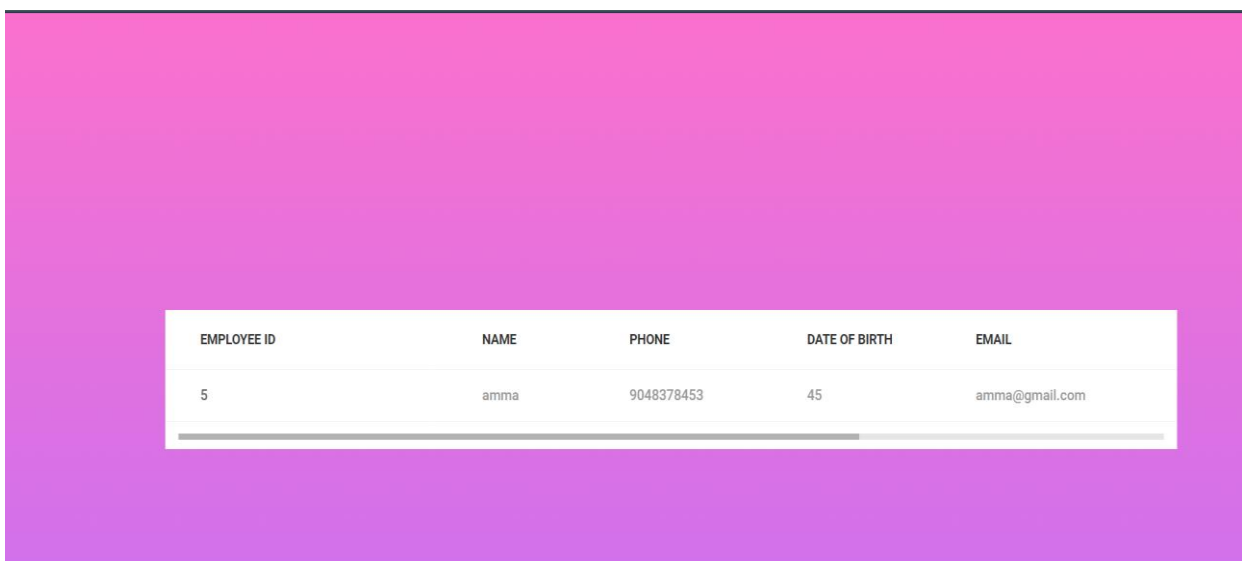
USER NAME

USER TYPE 

USER TYPE

Employee

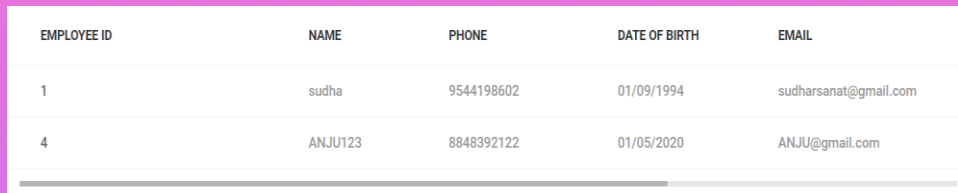
Figure A.5: Admin Add Employee



The table is displayed on a pink-to-purple gradient background. It has five columns: "EMPLOYEE ID", "NAME", "PHONE", "DATE OF BIRTH", and "EMAIL". The first row of data shows an employee with ID 5, name amma, phone 9048378453, date of birth 45, and email amma@gmail.com.

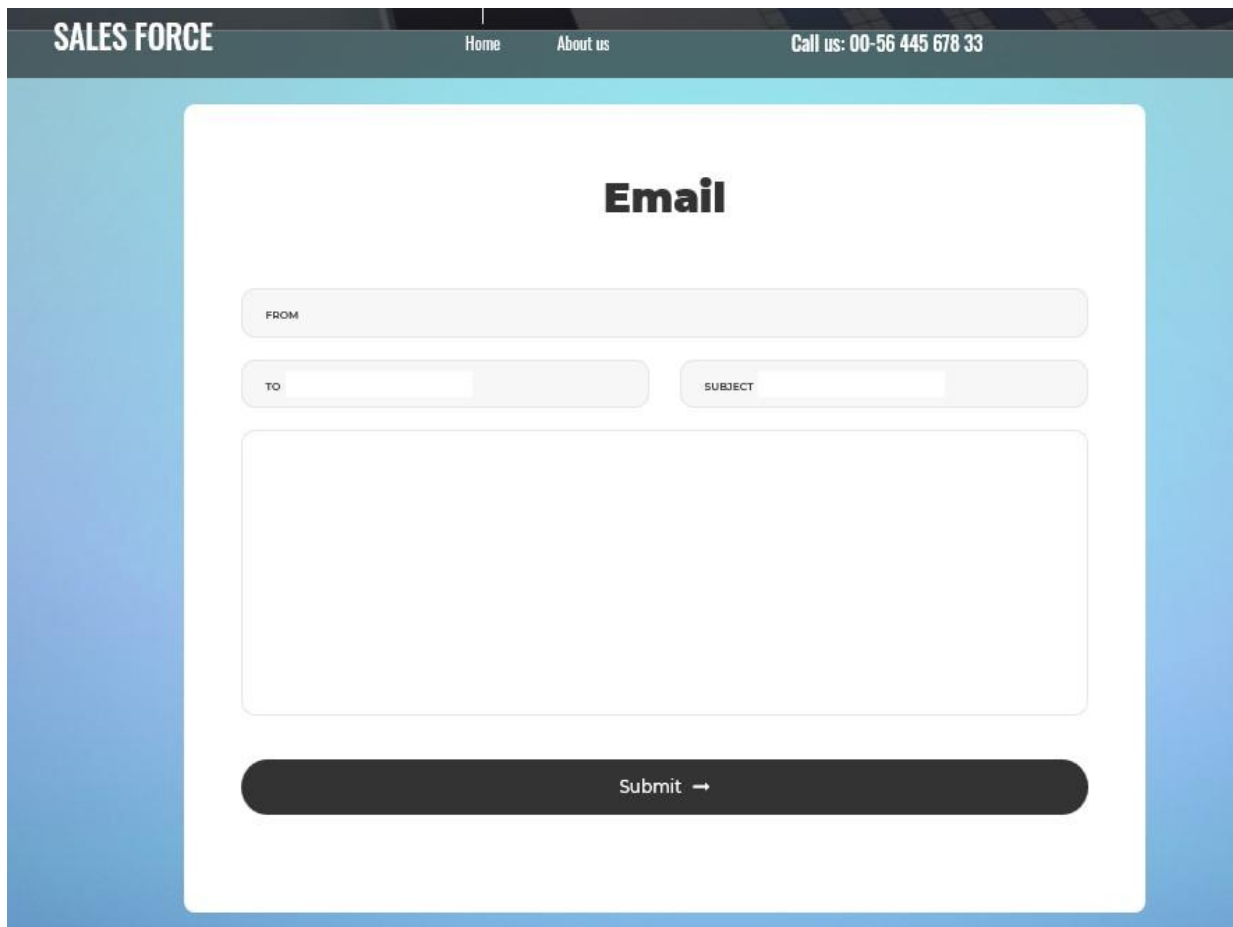
EMPLOYEE ID	NAME	PHONE	DATE OF BIRTH	EMAIL
5	amma	9048378453	45	amma@gmail.com

Figure A.6: Admin View Employee

A screenshot of a web application showing a table with customer information. The table has five columns: EMPLOYEE ID, NAME, PHONE, DATE OF BIRTH, and EMAIL. There are two rows of data. The first row shows an employee ID of 1, name sudha, phone 9544198602, date of birth 01/09/1994, and email sudharsanat@gmail.com. The second row shows an employee ID of 4, name ANJU123, phone 8848392122, date of birth 01/05/2020, and email ANJU@gmail.com. The table is set against a pink-to-purple gradient background.

EMPLOYEE ID	NAME	PHONE	DATE OF BIRTH	EMAIL
1	sudha	9544198602	01/09/1994	sudharsanat@gmail.com
4	ANJU123	8848392122	01/05/2020	ANJU@gmail.com

Figure A.7: Admin View Customer

A screenshot of a web application's email form. The page has a dark blue header with 'SALES FORCE' on the left, 'Home' and 'About us' in the center, and 'Call us: 00-56 445 678 33' on the right. The main content area has a light blue background. In the center, there's a white box titled 'Email'. Inside this box, there are three input fields: 'FROM' (a single-line text input), 'TO' (a single-line text input), and 'SUBJECT' (a single-line text input). Below these is a large, empty text area for the email body. At the bottom of the white box is a dark blue button with the text 'Submit' and a right-pointing arrow.

**SALES FORCE**      Home      About us      Call us: 00-56 445 678 33

## Email

FROM

TO       SUBJECT

Submit →

Figure A.8: Email Page



SALES FORCE

HomeAbout us

Call us: 00-56 445 678 33

®fTWBe

# Log a Note

TITLE

Enter TITLE

Note

Submit →

Figure A.9 Logs Page

SALES FORCE

HomeAbout us

Call us: 00-56 445 678 33

®fTWBe

# Feedback

FROM

TO

Message:

Submit →

Figure A.10: Feedback Page

### Add Contact

Enter name

Enter Email

Enter Contact Number

Enter Age

Enter City

Enter Description

Enter Pin Code

Figure A.11: Employee Add Contact

**OPPORTUNITIES**  
See your opportunities !

**NAME \***

**LEAD SOURCE \***

**ACCOUNT NAME \***

**CAMPAIN \***

**EXPECTED CLOSED DATE \***

**DESCRIPTION \***

**TAGS \***

**STATUS \***

**ASSIGED TO \***

Figure A.12: Opportunity Page

## A.2 SAMPLE CODE

### views.py in employee app

```
from django.http import HttpResponseRedirect

from django.shortcuts import render, redirect

from django.contrib.auth.models import User,auth

from .models import shopping

from .forms import ContactForm, EventForm, EmailForm, LogForm, OppertunityForm, additemsform


def home(request):

    return render(request, "index.html")


def register(request):

    return render(request, "register.html")


def login(request):

    if request.method=='POST':

        name=request.POST['username']

        password=request.POST['pass']

        user=auth.authenticate(username=name,password=password)

        if user is not None:

            auth.login(request,user)

            return redirect('/')

        else:

            return render(request, "login.html")
```

```

else:

    return render(request, "login.html")

def about(request):

    return render(request, 'about.html')

def contact(request):

    return render(request, 'contact.html')

def addcontact(request):

    form=ContactForm()

    return render(request, 'addcontact.html', {'form':form})

def contactsave(request):

    form =ContactForm()

    if request.method == 'POST':

        form =ContactForm(request.POST)

        if form.is_valid():

            form.save()

            return home(request)

        else:

            HttpResponseRedirect("invalid data")

    else:

        return render(request, "elements.html")

def event(request):

    form=EventForm()

    return render(request, 'event.html', {'form':form})

def eventsave(request):

    if request.method == 'POST':

        form =EventForm(request.POST)

```

```

    if form.is_valid():

        form.save()

        return home(request)

    else:

        HttpResponseRedirect("invalid data")

    return render(request, "elements.html")

def email(request):

    form = EmailForm()

    return render(request, 'email.html', {'form': form})

def emailsave(request):

    if request.method == 'POST':

        form = EmailForm(request.POST)

        if form.is_valid():

            form.save()

            return home(request)

        else:

            HttpResponseRedirect("invalid data")

    return render(request, 'elements.html')

def log(request):

    form = LogForm()

    return render(request, 'log.html', {'form': form})

def logsave(request):

    if request.method == 'POST':

        form = LogForm(request.POST)

        if form.is_valid():

            form.save()

            return home(request)

```

```

else:

    HttpResponseRedirect("invalid data")

return render(request,'elements.html')

def additems(request):

    form = additemsform

    return render(request, 'additems.html', {'form': form})

def oppertunity(request):

    form=OppertunityForm()

    return render(request,'oppertunity.html',{'form':form})

def oppertunitysave(request):

    if request.method=='POST':

        form=OppertunityForm(request.POST)

        if form.is_valid():

            form.save()

            return home(request)

        else:

            HttpResponseRedirect("invalid data")

    return render(request,'elements.html')

def customerhome(request):

    items = shoping.objects.all()

    return render(request, 'shopinghome.html', {'items': items})

def itemadd(request):

    if request.method=='POST':

        form=additemsform(request.POST)

        if form.is_valid():

            form.save()

            return customerhome(request)

```

```
return render(request, 'index.html')
```