Development Of Airline Management Software By Using RAD Model: A Case Study

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Abstract: This case study on Airline Management System is the automation of registration process of airline system. The system is able to provide much information like passenger's information, criminal's, list of all passengers etc. The system also allows us to add records when a passenger reserves a ticket. For data storage and retrieval, we use the file-handling facility of programming Language. It enables us to add any number of records in our database. But for intrinsic nature of file handling, the retrieval process is slow when we search a particular record in the database, because record is searched sequentially. This case study focuses on the development of an Airline Management System (AMS) using the Rapid Application Development (RAD) model. The RAD model emphasizes iterative development, prototyping, and user feedback to quickly deliver a functional system. The case study outlines the project's objectives, Proposed System, RAD model implementation, and the resulting benefits for the airline company.

Keywords – Airline, RAD, Management

I. INTRODUCTION

Before making this case study, we assumed that an airline which had recently started its operation found it very difficult to handle their customers .It was due to their great customer service and efficient handling of daily operations that they customer base started growing and in a day, they started to handle lot of customer requests. The problem is that in manual airline record keeping system excessive staff employment is required, extremely time consuming process is involved, inconveniences to both customers as well as to the manager .Slowly & slowly the count of such customers started to grow very rapidly and the airline employees had to devote their maximum time in handling such customers .Slowly, an airline started losing its important or gold customers due to poor response times by the employees and they even started losing those customers whose requests could not be fulfilled. After this, the management decided to install a system that can effectively & efficiently service the request of such customers and can the corresponding work of its employees who were overburdened with such tasks. This action was a step towards serving important or fresh customers with a minimum possible and improve the response times & efficiency of an airline employees. Objective of this software is to simplify the employee record using computers.

II. Requirements of the system:

- Electronically handling of flight's record to enhance the accuracy, flexibility, reliability and to remove the human's error.
- An airline provides air transport services for passengers, generally with a recognized Operating System.
- To provide accurate information about the addition, deletion and modified moves of the passenger.
- To provide, efficient, accurate, reliable, fast, and robust structure that can handle any number of passenger's transactions.

III. Proposed system:

The proposed system is computer based, user friendly, and easy to maintain. It makes safely storing of records easy and for a very long period of time. It would significantly improve the quality of work in the airport. The time spent in processing the above Mentioned queries would significantly reduce. The proposed system provides free, easy and efficient management of the day-to-day activities of the passengers in airline so that the manual work can be reduced and even minute details can be accessed easily.
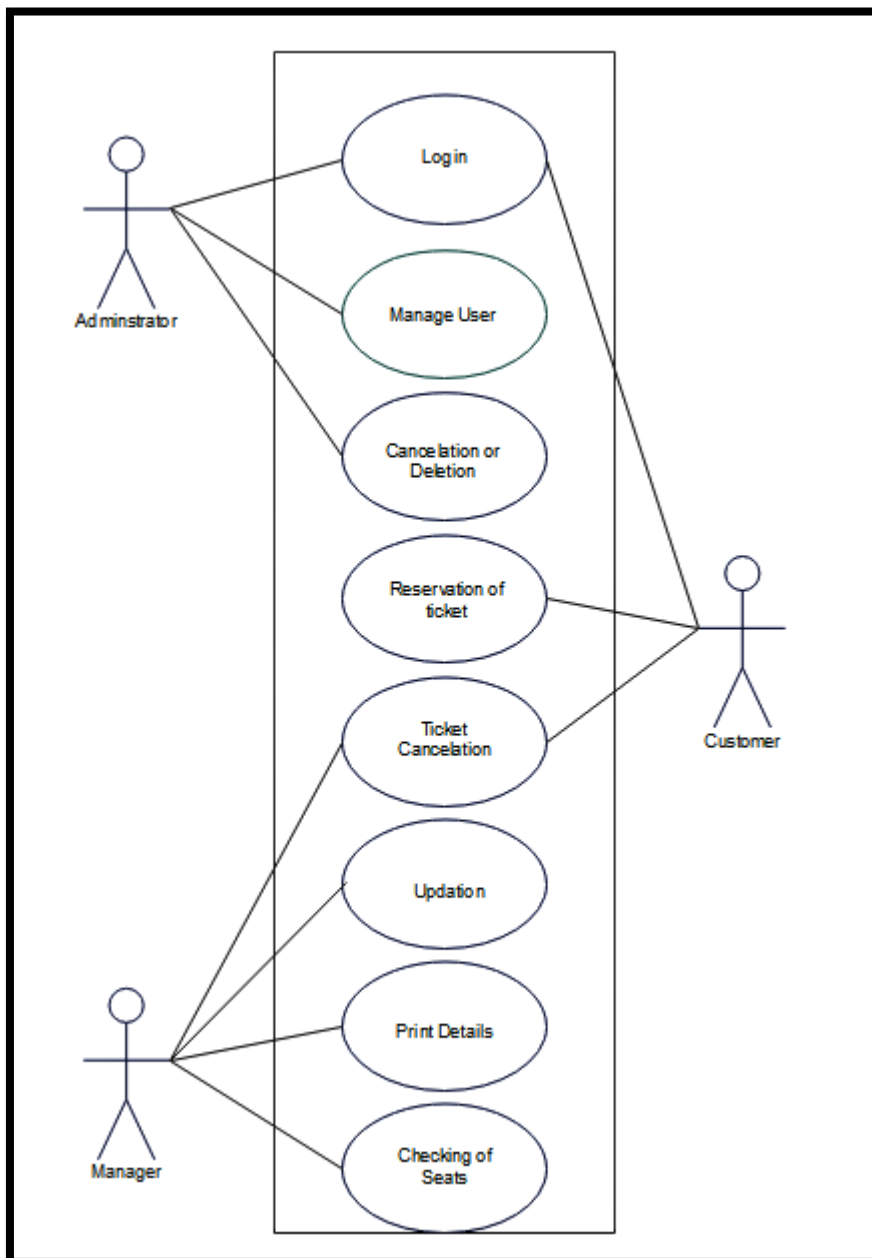
USE CASE DIAGRAM:

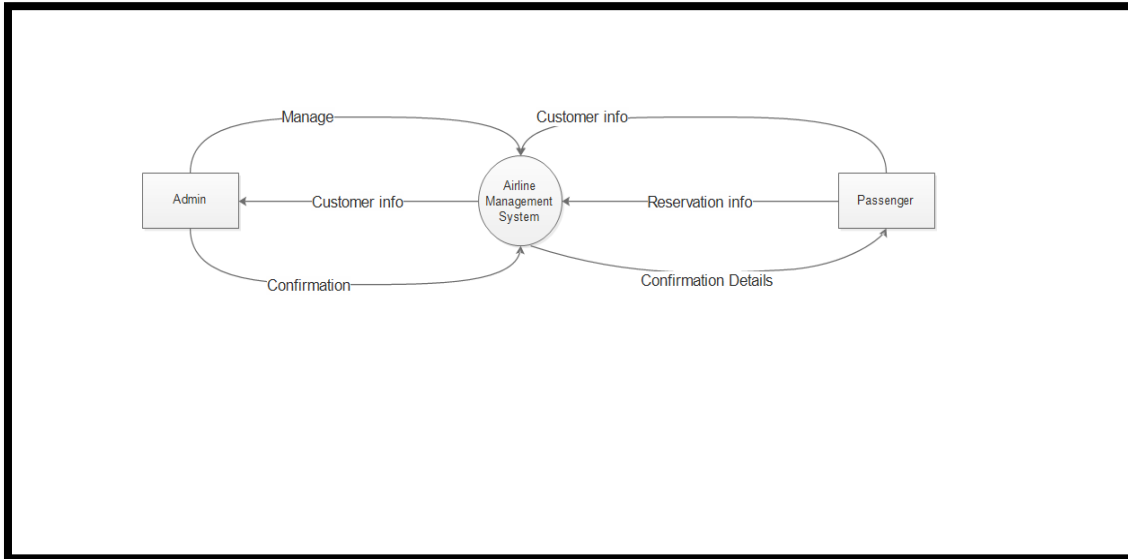Fig1. Use Case Diagram of Airline Managemengt System

- **0 LEVEL DFD:**

Fig2. Data Flow Diagram Level 0 of Airline Managemengt System
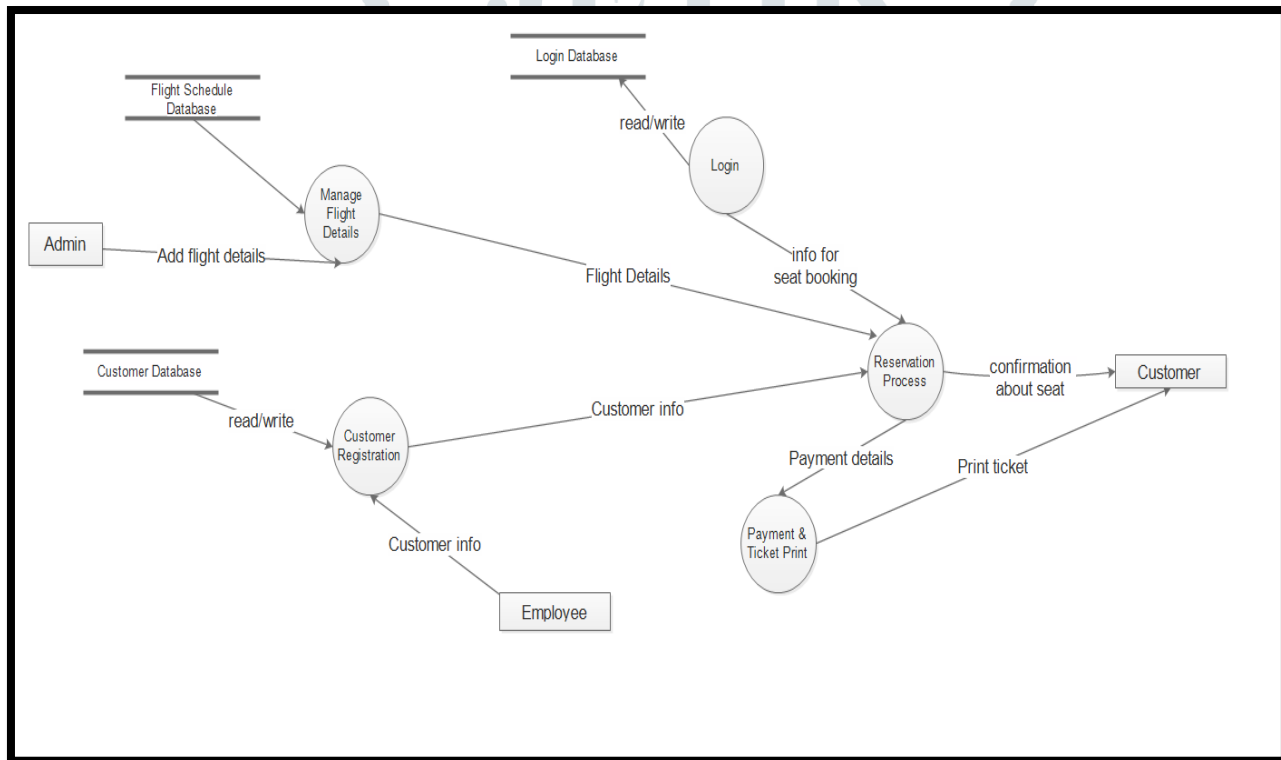
- **1 LEVEL DFD:**

Fig3. Data Flow Diagram Level 1 of Airline Managemengt System
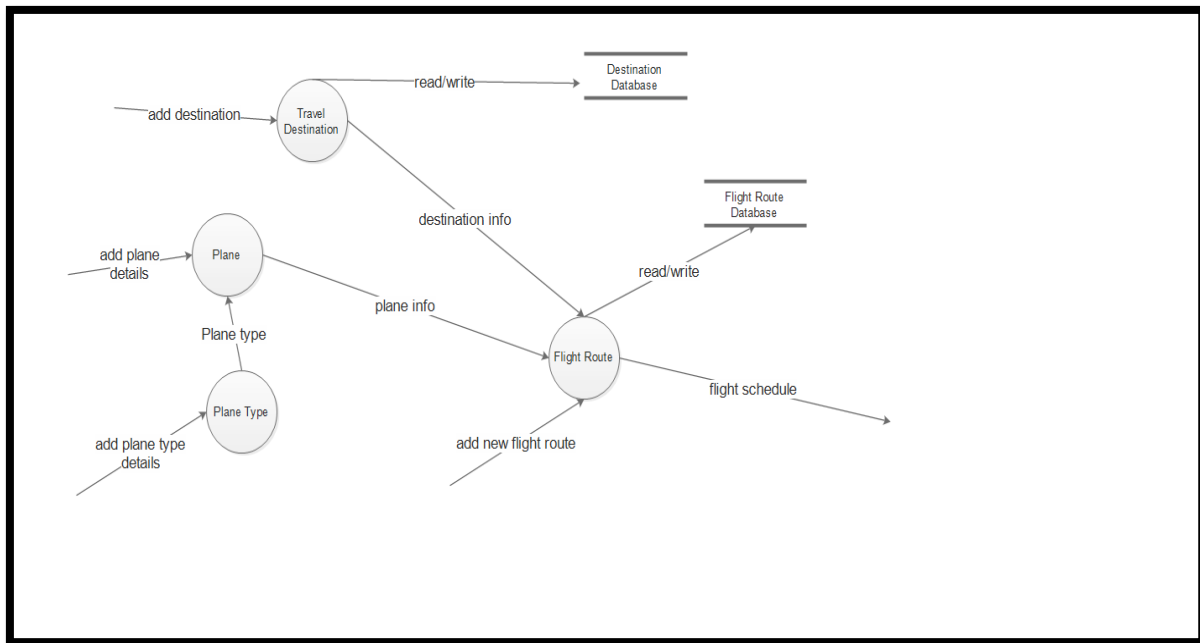
- **2 LEVEL DFD:**

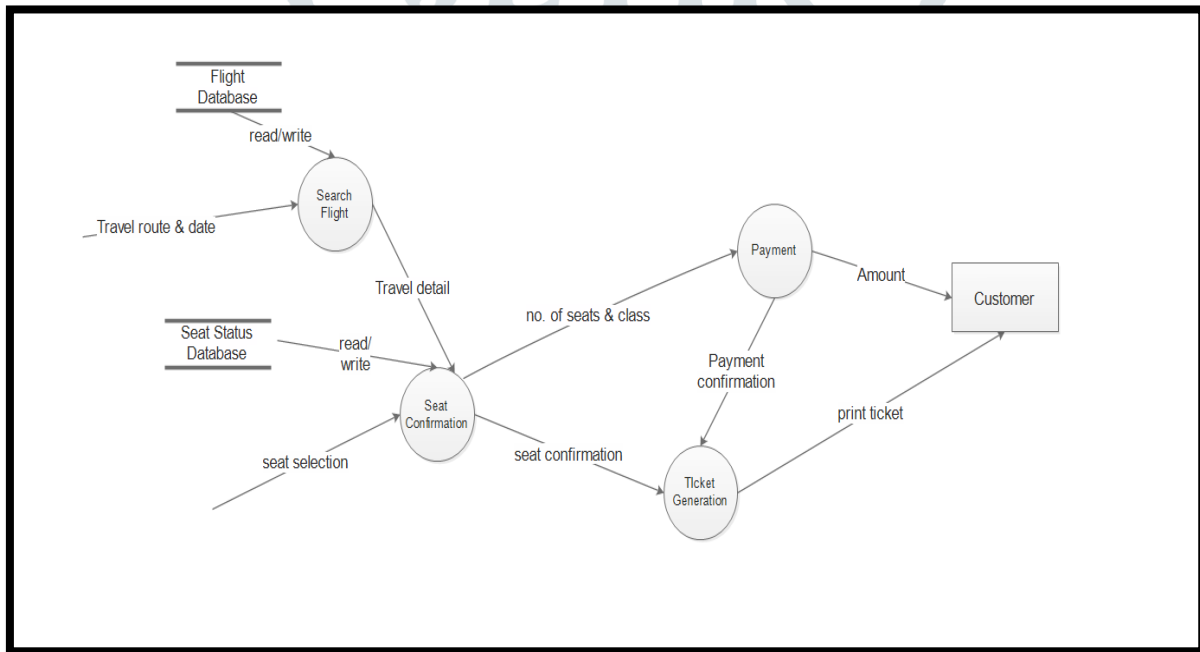**Fig4. Data Flow Diagram Level 2.1 of Airline Managemengt System**

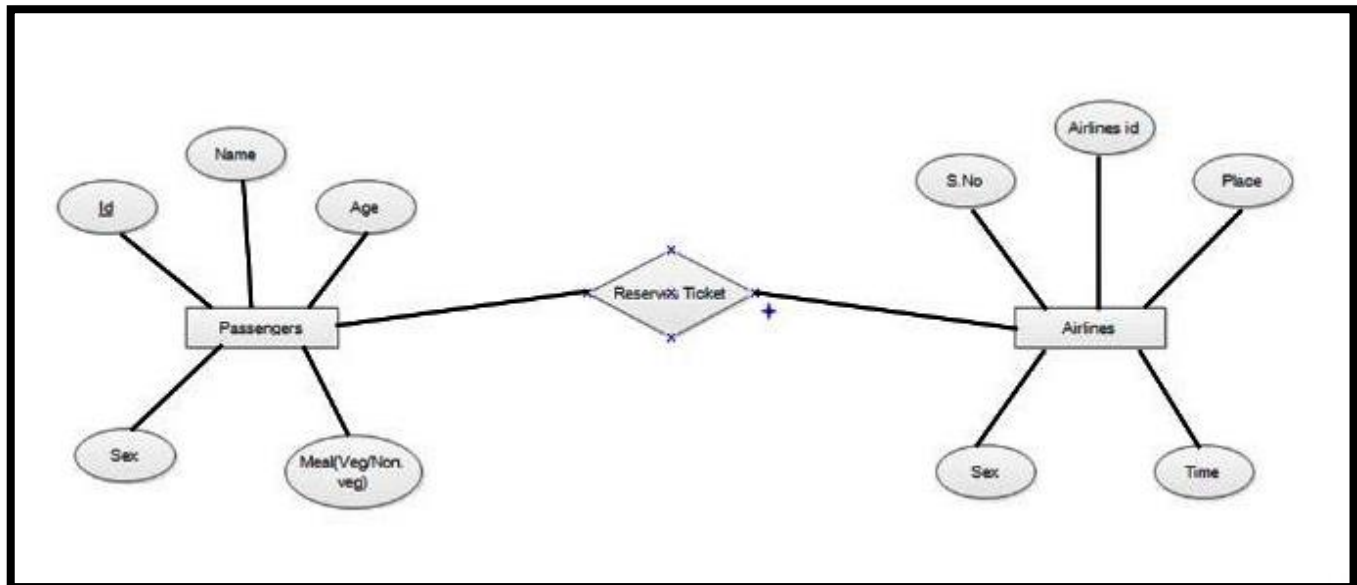**Fig5. Data Flow Diagram Level 2.2 of Airline Managemengt System**

ER DIAGRAM:

Fig6. ER Diagram of Airline Managemengt System

IV. OPERATIONS:

System analysis: The system analysis phase is considered to be one of the most important phases in the system development life cycle. It is immensely important that the software developer make through study of the existing system. Thorough study of the system is made and need i.e. features that are critical to system success and users wants (i.e. features that would be good but not essential) are brought out. The study will enable the developer to know the intricacies of the existing system.

In this system we have used Rapid Application Development (RAD) model. RAD is an incremental software development process model that emphasizes an extremely short development cycle.

The following phases are encompassed -

Business modelling: All the information about the business functioning of the Airways department is collected, how the data and information is flow from one end to another end using the following questions: What information drives the department process? What information is generated? Who generates it? Where does the information go? Who process it?

Data modelling: The information collected in Business modelling phase is refined into a set of data objects that are needed to support the project. The attributes of each object are identified and the relationships between these objects defined.

Process modelling: Processing descriptions and functions like adding, modifying, deleting records, printing reports, providing information, file handling etc. are created.

Application generation: The fourth generation techniques are used to generate application, like reusing the predefined functions or creating reusable components.

Testing: Most of the functions are already tested, as they are predefined functions.

Systems analysis researchers apply mathematical methodology to the analysis of the systems involved trying to form a detailed overall picture.

The development of a computer-based information system often comprises the use of a systems analyst. When a computer-based information system is developed, systems using computer (hardware/software), what the system would be used for etc. analysis would constitute the following steps: The development of a feasibility study, involving determining whether a system is economically, socially, technologically and organizationally feasible. Conducting fact-finding measures, designed to ascertain the requirements of the system's end-users. These typically span interviews, questionnaires, or visual observations of work on the existing system. Gauging how the end-users would operate the system. It refers to the process of examining a business situation with the intent of improving it through better procedures and methods. Systems development can generally be thought of as having two major components: Systems Analysis and Systems Design. Systems design is the process of planning a new system or replace or complement an existing system. But before this planning can be done, we must thoroughly understand the existing system and determine how computers can best be used to make its operation more effective. Systems analysis, then, is the process of gathering and interpreting facts, diagnosing problems and using the information to recommend improvement to the system. In brief, we can say that analysis specifies what the system should do. Design states how to accomplish the objective.

Analysis is a detailed study of the various operations performed by a system and their relationships within and outside of the system. A key question is: What must be done to solve the problem? One aspect of analysis is defining the boundaries of the system and determining whether or not a candidate system should consider other related systems. During analysis, data are collected on the available files, decision points and transactions handled by the present system. There are some logical system models and tools that ere used in analysis. Data flow diagrams, interviews, on-site observations, and questionnaires are examples. The interview is a commonly used tool in analysis. It requires special skills and sensitivity to the subjects being interview. Bias in data collection and interpretation can be a problem. Training, experience, and common sense are required for collection of the information needed to do the analysis. Once analysis is completed, the analyst has a firm understanding what is to be done. The next step is to decide how the problem might solve. Thus, in systems design, we move from the logical to the physical aspects of the life cycle. The decision to acquire computer hardware or software must be handled in the same way as any other business decision. The variety of sizes and types of computing resources available puts a burden on the analyst who must select suitable hardware, software or services and advise the top management accordingly. Today, selecting a system is a serious and time-consuming business. The time spent on the selection process is a function of the applications and whether the system is a basic micro- computer or a mainframe. In either

case, planning system selection and acquiring experienced help where necessary pay off in the long run. There are various important factors, which should be considered prior to system selection.
They are:

- Define system capabilities that make sense for the business.
- Specify the magnitude of the problem, i.e., clarify whether selection entails a few peripherals or a major decision concerning the mainframe.
- Assess the competence of the in-house staff.
- Hardware and software should be considered as a package.
- Develop a time frame for the selection process.
- Provide user indoctrination.

This is crucial, especially for first-time users. Selling the system to the user staff, provide adequate training and creating an environment conductive to implementation are prerequisites for system acquisition. The selection process should be viewed as a project and a project team should be formed with the help of management. The selection process consists of several steps, which are discussed below:

Requirements analysis: The first step in selection understands the user's requirement within the framework of the organization's objectives and the environment in which the system is being installed.

System specifications: System specifications must be clearly defined. These specifications must reflect the actual applications to be handled by the system and include system objectives, flowcharts, input-output requirements, file structure and cost.

Request for proposal: After the requirement analysis and system specifications have been defined, a request for proposal is prepared and sent to selected vendors for bidding.

Evaluation and validation: The evaluation phase ranks various vendor proposals and determines the one best suited to the user's requirements. It looks into items such as price, availability and technical support. System validation ensures that the vendor can, in fact, match his/her claims, especially system performance.

Vendor selection: This step determines the vendor with the best combination of reputation, reliability, service record, training, delivery time, lease/finance terms. The selected vendors are invited to give a presentation of their system. The system chosen goes through contract negotiations before implementation.

Working of the project-

- User can view record about flight by selecting option 1 from the main menu.
- User can reserve the seat for view the flight. by selecting option 2.
- User can also cancel the reserved ticket for flight by selecting option 3.
- Admin can collect total amount by selecting option 4(CUSTOMER).

V. CONCLUSION & FUTURE SCOPE

We can hereby conclude that: The system effectively automated the functions involved in the processes being handled manually before. The cost & benefit analysis shows that the system was quite successful in saving costs for the bank & generate equivalently huge benefits. The system is secure & scalable. The system design has been done keeping user-friendliness and efficiency in mind. Scope of this project is to replace the manual work of movie shop mgmt. system with the new advanced computerized system. User does not need much training to use this software, as this software is very user friendly and easy to use. It replaces all the paper work also. In this software we can store thousands of records. It replaces all the calculation works also as it automatically calculates and print the bill. Some main advantages are: Customer numbers are generated automatically by system itself. If any invalid entry done by the users which is nature of human being but checks by the machine so this software gives the error message to the users to indicate about the invalid entry. While transfer of any customer such as incoming customer, it will update both the file and incoming customer so that if we want to know number of incoming customer, it will be very easily for us.

VI. REFRENCE

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