1. **INTRODUCTION**

* 1. **PROJECT OVERVIEW**

Travelling will be one of the craze that most of the people will be having in this world. Some people will have travelling as a hobby. People travel from place to place through different means of transport which includes , , flight, cars, and motor-cycles and so on. If it is your own private vehicles then there is no problem of thAir Tickets that one needs to issue in order to travel to your intended destination. But if you’re travelling through the , , flight then there arises this concept of tickets that one needs to travel from place to place. The onlinAir Ticket booking system will help in managing thAir Tickets in a well organized manner.

OnlinAir Ticket Booking System is thAir Ticket booking system which has all types of ticket booking in one website. Unless like in the previous stage people as to walk into travel agency company to buy thAir Tickets and also to check the timings. This problem is overcome introducing OnlinAir Ticket Booking System.  This project will provide an option to customers to book thAir Tickets online and to check the confirmation online. Using this system customer can book flight tickets.

The features that can be included in the onlinAir Ticket booking system are as follows:

**Customers database management**: The information of the customers like the personal details, name of the transport mode booked, destination and many more other details.

**Database of the Flights**: The information related to the flight in which the customer travels must be stored in the database.

**Discounts provided**: The discounts must be provided to the customers who book thAir Tickets very frequently. It can attract the customers to have a journey that is enjoyable.

**Price**: The cost of thAir Ticket should be mentioned clearly.

**Source and destination**: The source and the destination of the particular mode of transport must be mentioned without any confusion.

**Online payment**: The payment of thAir Ticket can be made through the online or the offline mode.

**Seat availability**: The seats that are available in the particular in the mode of transport that one intends to go can also be mentioned in this application.

**2. SYSTEM ANALYSIS**

**2. SYSTEM ANALYSIS**

System Analysis refers to the process of examining a situation with the intention of improving it through better process and methods. System analysis is therefore, the process of gathering and interpreting facts, diagnosing problem and using the information to recommend information in system or in other words, it means a detailed explanation or description. Before computerizing a system under consideration, it has to be analyzed. We need to study how it functions currently, what are problems and what are requirements that proposed software should meet.

The main components of making software are:

• System and software requirements analysis

•Design and implementation of software

•Ensuring, verifying and maintaining software integrity

The “Air Ticket Booking System” is being proposed so as to develop a website that gandles the booking of airline in a single site, instead of visiting different sites for the same. This thus helps the customers or travelers to view the timing of the airline and will be able to book thAir Ticket accordingly.

**2.1 PROBLEM ANALYSIS**

The first steps in the initial investigation are directed towards clarifying the problems of the existing system. Based on the initial investigation about the existing system it is found that most of the activities such as booking tickets of flights, are not available in a single website. The user needs to visit different websites for booking the Air Tickets and also viewing the timing of transportation, which is found to be difficult.

The proposed system is thus overseeing all these issues so as to make the transactions and recording of other details such as bookings, airlines timings etc in a single website or application.

**2.1.1 EXISTING SYSTEM**

The existing system is based on the manual ticket counters present in the Airport. The passenger has to visit personally at Airport to enquire the schedule and to book a ticket. The travel agency provides the advance booking for the passengers and the travel agents has to depend on the Reservation officials for confirmation of the ticket that makes the procedure cumbersome for the passenger and the agency.

* **Inaccuracies:**
* **Modification:**
* **Inefficiency:**
* **Time and effort:**
* **All the searching are done in different locations:**

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**2.1.2 PROPOSED SYSTEM**

The Proposed System is completely and officially done as per the requirement to develop the application. The system includes the all required features for the implementation of software and also mentions the user interface and training to work in the software and its documentation.

The Proposed Project is the Online Air Ticket Booking System to reserve the seat in a flight for the Passengers and to enquire the ticket confirmation. The System will be the part of the Air travel agency and the travel company for showing its status and selling their tickets online. Previously the passenger had to go personally to book the ticket at the ticket counter of the travel company or the travel agency and to inquire the flight schedule.

The main advantages of the new system are:

* **Security:**
* **User Friendly:**
* **Speed and Accuracy:**
* **Efficiency and flexibility:**

## Automation:

**2.1.3 FEASIBILITY STUDY**

The “AIR TICKET BOOKING SYSTEM” is a software package which provides guidance for all thAir Ticket booking. This project will provide for computerization of a small enterprise whose main goal is to keep the details of timings, bookings etc and wants to change from manual enquiry process or booking process to a single click webapplication that handles all thAir Ticketing.

Feasibility study is test of system proposal according to its workability, impact on organization, ability to meet the needs, effective use of resources. During the study, the problem definition is crystallized and aspects of the problem to be included in this system are determined. The result of the feasibility study is a formal proposal. If the proposal is accepted, we continue with the project.

User needs a data-based system, which will remove all the mentioned problems that, the user is facing. The user wants a data-based system, which will reduce the bulk of paper work, provide ease of work, flexibility, fast record finding, modifying, adding, and removing.

We proposed our perception of the system, in accordance with the problems of existing system by making a full layout of the system on paper. We tallied the problems and needs by existing system and requirements. We were further updating in the layout in the basis of redefined the problems.

2.1.3.1 ECONOMICAL FEASIBILITY

The proposed system “AIR TICKET BOOKING SYSTEM” is economically feasible one. We do not want to keep lot of books for storing the data. By manipulating data using computer reduces cost. We do not want lot of employees; we simply want one to operate it, Administrator.

Economic analysis is most frequently used method for evaluating the effectiveness of a candidate system. More commonly known as cost/benefit analysis, the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with costs.

The only possible fixed costs involved with the system would be paying for people to write the code. It is possible that faculty would be willing to write the code for free, or students would be willing to work on it as a project. There are no variable costs associated with this system- since it operates on the servers, the department does not pay anything for each use of the system. The tangible benefits will mostly be in time savings for the current administrators, as well as a simplified process for activities. The intangible benefits would be increased system involvement among faculty members and decreased workload on the current administrators.

2.1.3.2 TECHNICAL FEASIBILITY

The project “AIR TICKET BOOKING SYSTEM” can be said to be technically feasible because there will be less number of errors actually no errors because the whole project will be divided into modules such as bookings, timings, users etc and so the errors if found, can be debugged very well and all the bugs can be removed.

Technical feasibility centres on the existing computer system and to what extend it can support the proposed system. It involves financial considerations to accommodate technical enhancements. If the budget is a serious const, then the project is judged not feasible. Here we need only a computer working in low speed to accomplish the task.

Since the system uses database to implement, it is technically practical for all operators. The system can be implemented on the servers that the department currently has access too. The system requires no special expertise to operate, although some expertise will be required to code it.

**2.1.3.3 BEHAVIORAL FEASIBILITY**

The proposed system “AIR TICKET BOOKING SYSTEM” can be easily accepted as it is very easy to understand and is very user-friendly. The operations and other features of the proposed system is designed in such a way that the user can easily find the datas, insert the datas etc. The organization will not be disturbed by the use of this system because, the users will be provided with prompts which will enable them to use this software very easily.

People are inherently resistant to change and computer has been known to facilitate changes. An estimate should be made of how strong the user is likely to move towards the development of computerized system. These are various levels of users in order to ensure proper authentication and authorization and security of sensitive data of the organization. Therefore it is understandable that the introduction of a candidate system requires special efforts to educate and the staff. The software that is being developed is user friendly and easy to learn. In this way, the developed software is truly efficient and can work on any circumstances, tradition, locales. Operational study strives on ensuring that the equilibrium of the organization and status quo in the organization neither are nor disturbed and changes are readily accepted by the users.

**2.2 REQUIREMENT SPECIFICATION**

In the required system all the operations and activities related to “AIR TICKET BOOKING SYSTEM” should be carried out efficiently. It should maintain a well-organized database for storing the resources that are provided by the “AIR TICKET BOOKING SYSTEM”. This helps us to eliminate the entering of invalid data. Most problems of manual system can be solved by this required system. The system should cover almost all the functional areas of the “AIR TICKET BOOKING SYSTEM” The “AIR TICKET BOOKING SYSTEM” should be a database system that can store the information regarding details, schedule details, details, airlines schedule details etc.

The“AIR TICKET BOOKING SYSTEM” is software package which provides guidance for all the “AIR TICKET BOOKING SYSTEM” This project will provide for computerization of small enterprise whose main goal is to keep track on their tourism details and wants to change from paper based data entry to computerized data entry.

A requirement definition is a statement, in a natural language plus diagrams, of what services the system is expected to provide and the consts under which it must operate. It is generated using Members-supplied information

The following represents the requirement definition of the system:

• The software must contain all the details about the footware.

• The software also provides administrator facility for adding new Staff and customer etc

•The administrator should have the rights for overall management.

**2.2.1 SOFTWARE REQUIREMENT AND SPECIFICATION**

An SRS is basically an organization’s understanding (in writing) of a customer or potential client’s system requirements and dependencies at a particular point in time (usually) prior to any actual design or development work. It’s a two way insurance policy that assures that both the client and the organization understand the others requirements from that perspective at a given point in time.

Software requirements for the“AIR TICKET BOOKING SYSTEM” software deals with the recording details of timings, bookings, schedules etc .All these details are needed tocomputerized. This should also minimize the duplication of entries made by the administrator.

A required specification is a structured document, which sets out the system services in detail. This document, also called a functional specification, which should be precise. It may serve as a contract between the system buyer and the software developer. The requirement specifications defines the basic specifications of the user for the new system.

The software required for developing the “AIR TICKET BOOKING SYSTEM” are Windows 7 as Os, PHP as front end for designing GUI, MySQL for data storage.

The SRS document itself states in precise and explicit language those functions and capabilities a software system must provide, as well as states any required consts by which the system must abide. The SRS also functions as a blueprint for completing a project with as little cost growth as possible. The SRS is often referred to as “parent” document because all subsequent project management documents, such as design specifications, statement of works, software architecture specifications, testing and validation plans, and documentation plans , are related to it.

It’s important to note that an SRS contains functional and non-functional requirements only; it doesn’t offer design suggestion, possible solutions to technology or iness issues, or any other information other than what the development team understands the customer system requirement to be.

A well designed, well written SRS accomplishes four major goals:

* It provides feedback to the customer. An SRS is the customer’s assurance that the development organization understands the issues or problems to be solved and the software behavior necessary to address problems. Therefore, the SRS should be written in natural language in an unambiguous manner that may also include charts, tables, data flow diagrams, and decision tables and so on.
* It decomposes the problem into component parts. The simple act of writing down software requirements in a well-designed format organizes information, places borders around the problem, solidifies ideas, and helps break down the problem into its component parts in an orderly fashion.
* It serves as an input to the design specification. As mentioned previously, the SRS serves as the parent document to subsequent documents, such as the software design specification and statement of work. Therefore, the SRS must contain sufficient detail in the functional system requirement so that a design solution can be devised.
* It serves as a product validation check. The SRS also serve as the parent document for testing and validation strategies that will be applied to the requirements for verification.

**2.3 HARDWARE AND SOFTWARE SELECTION AND JUSTIFICATION**

**HARDWARE SPECIFICATION**

The selection of hardware is very important in the existence and proper working of any software. When selecting hardware, the size and capacity requirements are also important. Below is some of the hardware that is required by the system

Processor : Single core processor of 2.0 GHz or more

RAM : 512 MB of RAM

Hard Disk Space : 300 MB free hard disk space

Input Devices : Mouse, Keyboard

Output Devices : Monitor, Printer

**SOFTWARE SELECTION AND JUSTIFICATION**

We require much different software to make the application which is in making to work efficiently. It is very important to select the appropriate software so that the software works properly.

Below are the software that are required to make the new system.

1. Windows XP or higher versions

2. MySQL

3. PHP

**WINDOWS 7**

**Windows 7** (codenamed **Vienna**, formerly **Blackcomb**) is a personal computer [operating system](https://en.wikipedia.org/wiki/Operating_system) developed by [Microsoft](https://en.wikipedia.org/wiki/Microsoft). It is a part of the [Windows NT](https://en.wikipedia.org/wiki/Windows_NT) family of operating systems. Windows 7 was [released to manufacturing](https://en.wikipedia.org/wiki/Software_release_life_cycle#Release_to_manufacturing_.28RTM.29) on July 22, 2009, and became generally available on October 22, 2009, less than three years after the release of its predecessor, [Windows Vista](https://en.wikipedia.org/wiki/Windows_Vista). Windows 7's [server](https://en.wikipedia.org/wiki/Server_(computing)) counterpart, [Windows Server 2008 R2](https://en.wikipedia.org/wiki/Windows_Server_2008_R2), was released at the same time.

Windows 7 was primarily intended to be an incremental upgrade to the operating system intending to address Windows Vista's poor critical reception while maintaining hardware and software compatibility. Windows 7 continued improvements on [Windows Aero](https://en.wikipedia.org/wiki/Windows_Aero) (the [user interface](https://en.wikipedia.org/wiki/User_interface) introduced in Windows Vista) with the addition of a redesigned [taskbar](https://en.wikipedia.org/wiki/Taskbar) that allows applications to be "pinned" to it, and new window management features. Other new features were added to the operating system, including libraries, the new file sharing system HomeGroup, and support for [multitouch](https://en.wikipedia.org/wiki/Multitouch) input. A new "Action Center" interface was also added to provide an overview of system security and maintenance information, and tweaks were made to the [User Account Control](https://en.wikipedia.org/wiki/User_Account_Control) system to make it less intrusive. Windows 7 also shipped with updated versions of several stock applications, including[Internet Explorer 8](https://en.wikipedia.org/wiki/Internet_Explorer_8), [Windows Media Player](https://en.wikipedia.org/wiki/Windows_Media_Player), and [Windows Media Center](https://en.wikipedia.org/wiki/Windows_Media_Center).

**PHP**

**The PHP Hypertext Preprocessor (PHP**) is a programming language that allows web developers to create dynamic content that interacts with databases. PHP is basically used for developing web based software applications. HP started out as a small open source project that evolved as more and more people found out how useful it was. Rasmus Lerdorf unleashed the first version of PHP way back in 1994.

* PHP is a recursive acronym for "PHP: Hypertext Preprocessor".
* PHP is a server side scripting language that is embedded in HTML. It is used to manage dynamic content, databases, session tracking, even build entire e-commerce sites.
* It is integrated with a number of popular databases, including MySQL, PostgreSQL, Oracle, Sybase, Informix, and Microsoft SQL Server.
* PHP is pleasingly zippy in its execution, especially when compiled as an Apache module on the Unix side. The MySQL server, once started, executes even very complex queries with huge result sets in record-setting time.
* PHP supports a large number of major protocols such as POP3, IMAP, and LDAP. PHP4 added support for Java and distributed object architectures (COM and CORBA), making n-tier development a possibility for the first time.
* PHP is forgiving: PHP language tries to be as forgiving as possible.
* PHP Syntax is C-Like.

**Common uses of PHP**

* PHP performs system functions, i.e. from files on a system it can create, open, read, write, and close them.
* PHP can handle forms, i.e. gather data from files, save data to a file, through email you can send data, return data to the user.
* You add, delete, and modify elements within your database through PHP.
* Access cookies variables and set cookies.
* Using PHP, you can restrict users to access some pages of your website.
* It can encrypt data.

**Characteristics of PHP**

Five important characteristics make PHP's practical nature possible −

* Simplicity
* Efficiency
* Security
* Flexibility
* Familiarity
* All of the PHP present in the Web page is processed and stripped from the page; the only thing returned to the client from the Web server is pure HTML output.
* All PHP code must be included inside one of the three special markup tags ATE are recognized by the PHP Parser.

.**MY SQL**

MySQL was created by a Swedish company, [MySQL AB](https://en.wikipedia.org/wiki/MySQL_AB), founded by [David Axmark](https://en.wikipedia.org/wiki/David_Axmark), Allan Larsson and [Michael "Monty" Widenius](https://en.wikipedia.org/wiki/Michael_(Monty)_Widenius). Original development of MySQL by Widenius and Axmark began in 1994.[[27]](https://en.wikipedia.org/wiki/MySQL#cite_note-27) The first version of MySQL appeared on 23 May 1995. It was initially created for personal usage from [mSQL](https://en.wikipedia.org/wiki/MSQL) based on the low-level language [ISAM](https://en.wikipedia.org/wiki/ISAM), which the creators considered too slow and inflexible. They created a new [SQL](https://en.wikipedia.org/wiki/Structured_Query_Language) interface, while keeping the same [API](https://en.wikipedia.org/wiki/Application_programming_interface) as mSQL. By keeping the API consistent with the mSQL system, many developers were able to use MySQL instead of the (proprietarily licensed) mSQL antecedent.[[*citation needed*](https://en.wikipedia.org/wiki/Wikipedia:Citation_needed)][[*dubious*](https://en.wikipedia.org/wiki/Wikipedia:Accuracy_dispute#Disputed_statement)*–*[*discuss*](https://en.wikipedia.org/wiki/Talk:MySQL#History_section)]

MySQL can be built and installed manually from source code, but it is more commonly installed from a binary package unless special customizations are required. On most [Linux distributions](https://en.wikipedia.org/wiki/Linux_distribution), the [package management system](https://en.wikipedia.org/wiki/Package_management_system) can download and install MySQL with minimal effort, though further configuration is often required to adjust security and optimization settings.

Though MySQL began as a low-end alternative to more powerful proprietary databases, it has gradually evolved to support higher-scale needs as well. It is still most commonly used in small to medium scale single-server deployments, either as a component in a [LAMP](https://en.wikipedia.org/wiki/LAMP_(software_bundle))-based web application or as a standalone database server. Much of MySQL's appeal originates in its relative simplicity and ease of use, which is enabled by an ecosystem of open source tools such as [phpMyAdmin](https://en.wikipedia.org/wiki/PhpMyAdmin). In the medium range, MySQL can be scaled by deploying it on more powerful hardware, such as a multi-processor server with gigabytes of memory.

There are, however, limits to how far performance can scale on a single server ('scaling up'), so on larger scales, multi-server MySQL ('scaling out') deployments are required to provide improved performance and reliability. A typical high-end configuration can include a powerful master database which handles data write operations and is [replicated](https://en.wikipedia.org/wiki/Database_replication) to multiple slaves that handle all read operations.[[82]](https://en.wikipedia.org/wiki/MySQL#cite_note-85) The master server continually pushes binlog events to connected slaves so in the event of failure a slave can be promoted to become the new master, minimizing downtime. Further improvements in performance can be achieved by caching the results from database queries in memory using [memcached](https://en.wikipedia.org/wiki/Memcached), or breaking down a database into smaller chunks called [shards](https://en.wikipedia.org/wiki/Shard_(database_architecture)) which can be spread across a number of distributed server clusters.

**2.4 USE CASE DIAGRAM**

**2.5 DATA FLOW DIAGRAM**

A DFD also known as ‘bubble chart’ has the purpose of clarifying system requirements and identifying major transformations. It shows the flow of data through a system. It is a graphical tool because it presents a picture. The DFD may be partitioned into levels that represent increasing information flow and functional detail. Four simple notations are used to complete a DFD. These notations are given below:-

**DATA FLOW**

The data flow is used to describe the movement of information from one part of the system to another part. Flows represent data in motion. It is a pipe line through which information flows. Data flow is represented by an arrow.

**PROCESS**

A circle or bubble represents a process that transforms incoming data to outgoing data. Process shows a part of the system that transforms inputs to outputs.

**EXTERNAL ENTITY**

A square defines a source or destination of system data. External entities represent any entity that supplies or receive information from the system but is not a part of the system.

**DATA STORE**

The data store represents a logical file. A logical file can represent either a data store symbol which can represent either a data structure or a physical file on disk. The data store is used to collect data at rest or a temporary repository of data. It is represented by open rectangle.

**ER DIAGRAM**

**3. SYSTEM DESIGN**

**3. SYSTEM DESIGN**

The “E-TICKET BOOKING SYSTEM” is being developed to record the details of tickets, seat, flight details etc. System design is the process of defining the architecture, components, modules, interfaces and data for a system to satisfy specified requirements. It is a solution to a “how to” approach compared to system analysis which is a “what is” orientation. It translates the system requirements into ways of making them operational.

The system is being designed in such a way that all the operations handled in the airline reservation is easily maintained and can be used by any travel agencies to automate the system. Presently the records are not computerized and require more manpower.

After analyzing the existing system in detail and identified the problem areas and alternative solutions have been studied the next step is design the system that is selected after the analysis conducted during the study phase. The design phase focuses on the detailed implementation of the system recommended in the feasibility study. The proposed system overcomes the existing system problems.

We go through the different design strategies to design the system we are talking about. In the input design we decide which type of input screens are going to be used for the system in making. In the output design we decide the output screens and the tables that will be used to give the output and in the database design we decide what all tables will be required and what all fields will be there in those tables.

**3.1 STRUCTURED DESIGN METHODOLOGIES**

Design methodology refers to the development of a system or method for a unique situation. Design methodology stresses the use of brainstorming to encourage innovative ideas and collaborative thinking to work through each proposed idea and arrive at the best solution. Meeting the needs and requirements of the end user is the most critical concern. To employ design methodology various analyses and testing have been done so as to meet the desired user needs. Every input that the user input is being tested in this software. That means the validity of each data is being checked and if found invalid necessary warning and prompting messages are displayed. The output forms are also tested in detail to see whether the desired output is met or not. Also the output forms are made more clear and meaningful for the user to understand.

**3.2 USER INTERFACE DESIGN**

User interface design is one of the major functions in developing a system. It is a good understanding of the user needs very clearly. Because the user is the person who has to interact with system being developed. So that it should seek the needs of the user before developing it. The system is designed in a very user friendly manner that makes the user with little knowledge of computer and of the organization can work very easily with the system.

The input forms that are used to enter the data are made more clear and easy to understand. Every time the user enters data the system is designed to check the validity of the data and if found as invalid meaningful prompting and warning messages are displayed. This makes the user comfortable to interact with the system.

Also when a user login to the system it checks the username and password entered to see whether it is valid user or not. It ensures security of the system and database. The data storage and data processing are made more efficient so that accurate results are being displayed on the output forms. And also the retrieval of specific records as demanded by the user is made very faster that saves the user time.

Main Input Forms are as Follows:-

**Login:** This form is used to enter the details of login. The details include username and password

**Timings:** This stores the timing details of, flight, and

**Schedules:** This records the details of flight schedule.

**Bookings:** The users can book tickets for flight.

**3.3 OUTPUT DESIGN**

Output design is used to provide outputs to the users of the system. Computer output is the most important direct source of information to the user. Efficient intelligible output design improves the system relationships with the user and help in decision making major form of the output is the hardcopy from the printer and the screen reports. The output devices to consider depend on factors such as compatibility of the devices with the system, expected print quality and number of copies needed.

Here, in this case, I make use of forms which contains the tables to show the outputs of the processed data. The output design has been done so that the results of processing should be communicated to the user. Effective output design will improve the clarity and performance of outputs. Output is the main reason for developing the system and the basis on which they will evaluate the usefulness of the application. Output design phase of the system is concerned with the Convergence of information to the end user in a friendly manner. The output design should be efficient, intelligible so that system relationship with the end user is improved and thereby enhancing the process of decision making

The major output forms are as follows:

**Timings:** This display the timing of the airlines

**Schedules:** This displays the details of scheduled and, which might have changed due to some reason etc.

**Booking:** The user can view their bookings and cancel if required on certain conditions.

**3.4 DATABASE DESIGN**

A database is a collection of interrelated data stored within minimum redundancy to serve many users quickly and efficiently. It is a process of designing the database file, which is the key source of the information in the system. The objective of database is to design is to provide storage and it contributes to the overall efficiency of the system. The file should properly design and planned for collection, accumulation, editing and retrieving the required information.

**TABLE DESIGN**

**3.4.1 DATA & INTEGRITY CONSTS**

The primary objective of a database design are fast response time to inquiries ,more information at low cost, control of redundancy, clarity and ease of use, accuracy and integrity of the system, fast recovery and availability of powerful end-user languages. The theme behind a database is to handle information as an integrated whole thus the main objective is to make information as access easy, quick, inexpensive and flexible for the users. In this project, we mainly concentrated into relational databases.

Relational database stores data in tables, which is turn, are composed of rows also known as records, columns also known as fields. The fields in the relational model are:-

**Primary Key**

The key which is uniquely identify records. They also notify the not null consts.

**Foreign Key**

The key which reference the primary key, is the data inserted in the primary key column of the table.

**Normalization**

After the conceptual level, the next level of process of database design to organize the database structure into a good shape called Normalization. The normalization simplifies the entries, removing redundancies from the system data and finally builds a data structure, which is both flexible and adaptable to the system. The different normal forms obtained during the database design are given below:

In the database design, we create a database with different tables that is used to store the data. We normalize the data in the table. **Database normalization** is the process of organizing the fields and tables in a relational database to minimize redundancy and dependency. Normalization usually involves dividing large tables into smaller (and less redundant) tables and defining relationships between them. The objective is to isolate data so that additions, deletions, and modifications of a field can be made in just one table and then propagated through the rest of the database via the defined relationships.

In the project I have made used of the 3rd normal form, Third Normal Form (3NF) is a property of database tables. A relation is in third normal form if it is in Second Normal Form and there are no functional (transitive) dependencies between two (or more) non-primary key attributes. The overall objective in the development of database technology has been to treat data as an organizational resource and as an integrated whole. Database Management System allows data to be protected and organized separately from other resources. Database is an integrated collection of data. This is the difference between logical and physical data.

In my project, I have made use of tables which are stored in the database named ticket. The tables are used to store the values that are generated by the application. The main field names and the key consts of all the tables are shown above in detail.

**4. CODING**

**4.CODING**

**PROGRAM CODE PREPARATION**

When considered as a step in software engineering, coding is viewed as a natural consequence of design. However, programming language characteristics and coding style can profoundly affect software quality and maintainability. The coding step translates a detail design representation into a programming language realization. The translation process continues when a compiler accepts source code as input and produces machine-independent object code as output. The initial translation step in detail design to programming language is a primary concern in the software engineering context. Improper interpretation of a detail design specification can lead to erroneous source code. Style is an important attribute of source code and can determine the intelligibility of a program. The elements of a style include internal documentation, methods for data declaration, procedures for statement construction, and I/O coding and declaration. In all cases, simplicity and clarity are key characteristics. An offshoot of coding style is the execution time and/or memory efficiency that is achieved. Coding is the phase in which we actually write programs using a programming language. In the coding phase, design must be translated into a machine readable form. If design is performed in a detailed manner, coding can be accomplished mechanistically. It was the only recognized development phase in early or unsystematic development processes, but it is just one of several phases in a waterfall process. The output of this phase is an implemented and tested collection of modules.

In my project I have made use of the PHP to code the whole project and have made use of the MySQL to act as a database to store the results of the processed data which is the output of the project.

**5. IMPLEMENTATION OF SECURITY**

**5. IMPLEMENTATION OF SECURITY**

The software quality assurance is comprised of a variety of tasks associated with seven major activities.

* Application of technical methods
* Conduct of formal technical reviews.
* Software testing.
* Enforcement of standards.
* Record keeping and reporting.

The quality begins with a set of technical methods and tools that help the analyst to achieve high quality specification and the designer to develop high quality design. The next activity involves assessment for quality for the design that is created which is the formal technical review. Software testing combines a multi-step strategy with a series of test case design methods that help ensure effective error detection.

**5.1 DATA SECURITY**

The software maintains a well organized database for storing the details that are provided by the user. This helps us to eliminate the entering of invalid data. Data is not accessible to unauthorized users. The system analyst will provide the test data, specially designed to show that the system will operate successfully in all its aspects and produce expected results under expected conditions. Preparation of test data and the checking of results should be carried out in conjunction with the appropriate users and operational departments. Also the extent to which the system should be tested must be planned.

**5.2 USER AND ACCESS RIGHTS**

**Admin:** adds the details of, seats and view bookings, update status etc.

**Users:** Views the details of flight,schedule and fare add bookings etc.

**6. SYSTEM TESTING**

**6. SYSTEM TESTING**

Testing is a process of executing a program with intent of finding errors. In software development, errors can be injected at any stage of development. During testing, the program to be tested is executed with a set of test cases and the output of the program for the test cases is evaluated to determine if the program is performing as expected.

There are mainly two approaches of testing namely, functional testing and structural testing. Functional testing is based on the functionality of the program and not the structure of the program. The test cases are solely on the basis of specification or requirements of the program. This type of testing is also called as black box testing.

Structural testing is also called as white box testing or glass box testing. Here the internal structure of the program is tested. Test cases are designed by examining the logic of the program.

“AIR TICKET BOOKING SYSTEM” focuses on the functionality of the system and hence it mainly does the functional/black box testing. The test cases of this system are completely based on the specifications of the system.

The application was tested and found to be working as expected. There was no abnormal behaviour reported during the testing of the program. Testing is a method by which we try reducing the testing efforts and bringing out the maximum output. Testing helps us in knowing whether the logical assumptions that we have taken for the system are correct, and if they are correct we have obtained our goal. We test the system to know the errors, to check the validity of the information, to also group the modules with the aim that we meet the system requirements according to the system needs.

Testing is vital to the success of the system. System testing makes logical assumption that if all the parts of the system are correct, we have achieved the mission successfully. System testing is the stage of implementation that is aimed at assuring that the system works accurately and efficiently before the live operation commences.

Testing includes several levels of testing. They are:

* 1. Unit testing
  2. Integration testing
  3. System testing
  4. Acceptance testing

**6.1 UNIT TESTING**

Unit testing is the first level of testing. In this process the code produced during the coding phase is verified. The goal is to test the internal logic of the modules. This is also known as “module testing”. The modules are tested separately; this testing is carried out during programming stage itself. In this testing step each module such as airlines details, booking details is found to be working satisfactorily as regard to the expected output from the module.

**6.2 INTEGRATION TESTING**

Integration testing is performed to check the correctness of the interface between the modules. The goal is to see if the modules can be integrated properly. In this project all the modules are combined and then entire program is tested as whole, thus in the integration step, all the errors uncovered for the next testing steps

**6.3 USER ACCEPTANCE TESTING**

Acceptance testing is sometimes performed with realistic data of client to demonstrate that the software is working satisfactorily.

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**6.4 TEST CASE DESIGN**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function tested** | **Test condition** | **Expected result** | **Actual result** | **Status** |
| name | Entered non characters | Not allowed | Not allowed | Pass |
| Phone number | Entered more than 10 digits | Not allowed | Not allowed | Pass |
| admin login | Invalid username and password | Not allowed | Not allowed | Pass |
| e-mail | Entered Invalid e-mail | Not allowed | Not allowed | Pass |

**6.5 TEST REPORT AND DEBUGGING**

Testing means verifying correct behaviour. Testing can be done at all stages of module development: requirements analysis, interface design, algorithm design, implementation, and integration with other modules. In the following, attention will be directed at implementation testing. Implementation testing is not restricted to execution testing. An implementation can also be tested using correctness proofs, code tracing, and peer reviews, as described below.

Debugging is a cyclic activity involving execution testing and code correction. The testing that is done during debugging has a different aim than final module testing. Final module testing aims to demonstrate correctness, whereas testing during debugging is primarily aimed at locating errors. This difference has a significant effect on the choice of testing strategies.

* **Report error conditions immediately** - Much debugging time is spent zeroing in on the cause of errors. The earlier an error is detected, the easier it is to find the cause. If an incorrect module state is detected as soon as it arises then the cause can often be determined with minimal effort. If it is not detected until the symptoms appear in the client interface then may be difficult to narrow down the list of possible causes.
* **Maximize useful information and ease of interpretation** - It is obvious that maximizing useful information is desirable, and that it should be easy to interpret. Ease of interpretation is important in data structures. Some module errors cannot easily be detected by adding code checks because they depend on the entire structure. Thus it is important to be able to display the structure in a form that can be easily scanned for correctness.
* **Minimize useless and distracting information** - Too much information can be as much of a handicap as too little. If you have to work with a printout that shows entry and exit from every procedure in a module then you will find it very difficult to find the first place where something went wrong. Ideally, module execution state reports should be issued only when an error has occurred. As a general rule, debugging information that says "the problem is here" should be preferred in favor of reports that say "the problem is not here".
* **Avoid complex one-use testing code** - One reason why it is counterproductive to addmodule correctness checks for errors that involve the entire structure is that the code to do so can be quite complex. It is very discouraging to spend several hours debugging a problem, only to find that the error was in the debugging code, not the module under test. Complex testing code is only practical if the difficult parts of the code are reusable.

**7. SYSTEM IMPLEMENTATION AND MAINTENANCE**

**7. SYSTEM IMPLEMENTATION AND MAINTENANCE**

Implementation is an activity that is contained throughout the development phase. It is the process of bringing a developed system into operational use and turning it over to the user. The new system and its components are to be tested in a structured and planned manner. A successful system should be delivered and users should have the confidence that the system would work efficiently and effectively. The more complex the system being implemented the more involved will be the system analysis and design effort required for implementation. Implementation is the stage of the system when the theoretical design is turned into working system. The implementation involves careful planning investigation of the current system and its consts on implementing, design of methods to achieve the changeover, ing of user over procedure and evaluation change over method. There are three types of implementation:

**1**. Implementation of a computer system to replace a manual system. The problems involved are converting files, ing users, creating accurate files, and verifying printouts for integrity.

**2**. Implementation of a new computer system to replace an existing one. This is usually a difficult conversion. If not properly planned, there can be many problems. Some larger systems have taken as long as a year to convert.

**3**. Implementation of a modified application to replace an existing one using the same computer. This type of conversion is relatively easy to handle, provided there are no major changes in files.

**SYSTEM MAINTENANCE**

Maintenance corresponds to restoring something to original conditions, covering a wide range of activities including correcting codes and design errors and updating user support. Maintenance is performed most often to improve the existing software rather than to a crisis or risk failure. The system would fail if not properly maintained. The software maintenance is an important one in the software development because we have to spend more efforts for maintenance. Software maintenance is to improve the software quality according to the requirements. After a system is successfully implemented, it should be maintained in a proper manner. The need for system maintenance is to make the system adaptable to the changes in the system environment. There may be social, economical or technical changes, which affect system being implemented. Software product enhancements may involve providing new functional capabilities, improving user displays and mode of interaction, upgrading the performance characteristics of the system. So only through proper system maintenance procedures, the system can be adapted to cope with these changes. We may define maintenance by describing four activities that are undertaken to after a program is released for use. The first maintenance activity occurs because it is unreasonable to assume that software testing will uncover all latent errors in a large software system. During the use of any large program, errors will occur and be reported to the developer. The process that includes the diagnosis and correction of one or more errors is called corrective maintenance. The second activity that contributes to a definition of maintenance occurs because of the rapid change that is encountered in every aspects of computing. Therefore, adaptive maintenance – an activity that modifies software to properly interface with a changing environment is both necessary and common place. The third activity that may be applied to a definition of maintenance occurs when a software package is successful. As the software is used, recommendations for new capabilities, modifications to existing functions, and general enhancements are received from users. To satisfy requests in this category, perfective maintenance is performed. This activity accounts for the majority of all efforts expended on software maintenance.

The fourth maintenance activity occurs when software is changed to improve future maintainability or reliability, or to provide a better basis for future enhancements. Often called preventive maintenance, this activity is characterized by reverse engineering and re-engineering techniques.

**8. SCOPE OF PROJECT**

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The “AIR TICKET BOOKING SYSTEM” is a web application project, which is developed with an intention to make the records stored in the database easier.

The “AIR TICKET BOOKING SYSTEM” is a time-saving and efficient project. The Systemcan use it to efficiently store all the data in a secure database. It is less prone to errors as the program checks the data entered before saving it to database. If it finds any data to be unsatisfactory it shows a warning to the user to correct the error.

It is extremely simple to use and quite powerful at the same time. It takes the load off the staff or admin in the “AIR TICKET BOOKING SYSTEM” The system is very flexible and changes can be made without much difficulty. The future extension in the system can be made in such a way that addition of new modules can be done without much difficulty. The reconstruction of the system will increase the flexibility of the system.

**9. FUTURE ENHANCEMENT**

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Any system which has been in use for a number of years gradually decays and become less effective because of change in environment to which it has to be adapted. For the time being it is possible to overcome problems by amendments and minor modifications to acknowledge the need of fundamental changes.

“AIR TICKET BOOKING SYSTEM” satisfies the requirements of the management. The system is developed in a user friendly manner. It has one module for manipulating the database. The application can be enhanced in the future with the needs of the management. The database and the information can be updated to the latest coming versions. There are also possibilities for enhancing and further developing the project with the latest information and needs of the management, since the coding are in procedural block formats, altering the code is also made easy.

All the functions have been done carefully and successfully in the software, and if any development is necessary, in future it can be done without affecting the design by adding additional modules to the system. Some of the enhancements that can increase the value of this application are the following:

“AIR TICKET BOOKING SYSTEM” is a system which is a first step to change the “AIR TICKET BOOKING SYSTEM” of keeping the data of , , airlines timings and its schedules as well as the other important information. This system will help the users to manage the advertisement information and make sure that all the important data are able to be use in the future time

**10. CONCLUSION**

**10. CONCLUSION**

The project “AIR TICKET BOOKING SYSTEM” has been created with the intention of providing a user with application which will suffice all needs for the details and other updates. All the requirements specifications was followed as for as possible and few additional features were added that can make the application more user friendly and less complicated. The project was successfully completed within the time span allotted. All the modules are tested separately and put together to form the main system. Finally the system is tested with real data and it worked successfully. Thus the system has fulfilled the entire objective defined.

The project “AIR TICKET BOOKING SYSTEM” has been developed with the proper guidance. A fully fledged user manual for this system is provided to the user for future working and functional references. We hope the “AIR TICKET BOOKING SYSTEM” fulfils all the needs in possible manner. The system has been developed in an interactive manner; The system is flexible, user friendly and has its own full data security and all data recovery facility.

**The Major Advantages Are:**

* Easy retrieval of data available in database.
* Quick implementation of results.
* Very user friendly.
* Does not require large amount of memory.
* Very less manual work is needed.
* Very cost effective

**11. BIBLIOGRAPHY**

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