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COMPUTERIZATION OF RAILWAY STATION (RESERVATION AND PARCEL SYSTEM OF MALAKWAL RAILWAY STATION)



BY

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IN THE NAME OF ALLAH THE MOST MERCIFUL AND BENEFICIENT.

DEDICATED

TO

OUR PARENTS
AND
ALL FAMILY
MEMBERS



ALLAH SAYS IN HOLY QURAN

OH! PROPHET (P.B.U.H) says!

If oceans are converted into ink to Write the

Qualities of my creator, then the whole oceans would by

Consumed in writing before his qualities come to an end.

And even if we produce the like of ink, would also be insufficient.

(Al-kahf)

PROJECT BRIEF

PROJECT TITLE

: Computerization of Railway Station

(RESERVATION AND PARCEL SYSTEM OF MALAKWAL

RAILWAYSTATION)

DEPARTMENT

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8

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SOFTWARE USED

: Oracle 8i/ Developer 6i.

ENVIRONMENT USED

: Windows 2000 NT.

SYSTEM USED

: Intel 1.7 MHz

Hard disk 40 Gb

Ram 256 Mb

COMPUTER CENTER

QUAID I AZAM UNIVERSITY

ISLAMABAD

FINAL APPROVAL

This is to certify that we have read this project report submitted by SWHAHZAD AFSAR & NAEEM UMAR and found it of sufficent standard to warrant its acceptance by the Quaid I Azam University Islamabad ,for the **post graduate diploma in computer science**.

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ABSTRACT

In the process of Islamic renaissance, it is essential to make full use of the modern technology. Keeping this in view, the decision of QUAID-I-AZAM University to computerized the Reservation and parcel system of Malakwal railway station was a big step ahead.

The main objective was to develop a prompt and efficient computer Based system, which id capable of replacing the present

System.

This system will maintain complete records of Reservation & parcel departments. The information will retrieve from the database in the form of queries and reports. The infromation stored in database will be manipulated with the help of various form layout designed for the system. The developed system will possess all the capabilities of relational database system.

ACKNOWLEDGEMENT

The whole praise of almighty ALLAH, creator of this universe Who made us the super creature blessed us with knowledge and able us to accomplish this work.

We would like to express our deepest appreciation and heartiest gratitude to our supervisor Mr.Munawar Hussain Tiwana for his guidance and great help during all the phases of this project.

We feel great depth of obligation for our loving parents, to all our family members whom prayers have been invaluable constant source of light and inspiration that consequently enabled us to be what we are today. many thanks to all our friends specially Hameedullah, AbidHussain, Haji Irshad Ali and M Ashraf for excellent cooperation and nice companionship during our stay at university in general and during project in particular.

Shahzad Afsar Naeem Umar

DECLARATION

We declare thuis software, neither as a whole nor as part has been copied from any other source. It is further declared that we have completed our final project of post graduate diploma in computer sciences successfully as a result of my struggle and research. No portion of this whole work is presented in this report has been submitted in support of any application for any other degree or qualification of this or any other university or institute of learning. If any part of the project and write up is proved to be copied out or there is any duplication of code then we will be responsible for cocequences.

> SHAHZAD AFSAR. HAFIZ NAEEM UMAR.

Signature Signature

PREFACE

Media and information technology are of out most importance in the present era. The remarkable advancement And discoveries in the computer technologies have contribute A lot towards the progress of these two in the past few decade. This project is concerned with the computerization of reservation and parcel system of Malakwal Rail-way station. It consists of 5 chapters and 6 appendices.

Chapter 1: Describes the inrtodution of Pakistan Railway and

Malakwal Railway station.

Chapter 2: Describes the existing system, its working and drawbacks.

Chapter 3: Describes the proposed system and its objectives.

Chapter 4: Describes the designing phase including input/output along with their working and database design with the constraints placed on the fields.

 $Chapter \ 5 \ : \ {\it Contains} \ \ the \ tables \ details.$

Apendices: Includes ERD, different forms and reports.

TABLE OF CONTENTS

(CHAPTER NO 1 INTRODUCTION	1
1.1	About the Pakistan Railway	2
	History of Pakistan Railway	2
	1.2.1 Before partition	2 3 4
	1.2.2 After partition	4
1.3		4
	1.3.1 Passenger Traffic	4
	1.3.2 Freight Rates	
	1.3.3 Pakistan Locomotive factory, Risalpur	4 5
1.4	Introductin to Malakwal railway station	7
1.5	General information about Malakwal railway station	8
	1.5.1 Branch lines of Malakwal railway station	8
	1.5.2 Different section of railway station	8
1.6	More about Malakwal railway station	8
	1.6.1 Total Revenue	9
	1.6.2 Total expenditures	9 .
C	CHAPTER NO 2 EXISTING SYSTEM	10
2.1	Introduction	11
2.2	Existing system	11
	2.2.1 Benefits of existing system	12
	2.2.2 Limitations of existing system	12
2.3	Why to choose database	13
CI	HAPTER NO 3 PROPOSED SYSTEM	14
3.1	Introduction	15
3.2	Features of proposed system	15
3.3		
3.4		
3.5	Features of developer 6i	17

CI	HAPTER NO 4 SYSTEM DESIGN	19
4.1	Review of database design	20
	4.1.2 Data	20
	4.1.3 Information	20
	4.1.4 Data processing	20
4.2	What is database	20
4.3	Characteristics of database mangement system	21
4.4	Relational database management system	22
4.5	Oracle 8i and developer 6i	22
	4.5.1 Oracle SQL Plus	22
	4.5.2 Oracle Forms	23
	4.5.3 Oracle Reports	23
	4.5.4 Oracle Graphs	23
4.6	System development	24
	4.6.1 Editors	24
	4.6.2 Forms	25
	4.6.3 Canvas	26
	4.6.4 Block	26.
	4.6.5 Base table	27
	4.6.6 Field	27
	4.6.7 Master detail relationship	27
	4.6.8 Triggers	28
4.7	System design	28
	4.7.1 Logical database design	28
	4.7.2 Physical database design	32
	Table Design	32
CHAF	PTER NO 5 TABLES	33
APPE	ENDIX 1	46
APPE	ENDIX 2	48
APPE	ENDIX 3	54
APPI	ENDIX 4	62
APPI	ENDIX 5	69

CHAPTER NO 1 INTRODUCTION

INTRODUCTION TO PAKISTAN RAILWAY

1.1 ABOUT THE PAKISTAN RAILWAY:

Pakistan Railway forms the life line of the country by catering to its needs for large scale movement of freight as well as passenger traffic. It not only contributes to its economic growth but also promotes national integration.

Pakistan Railway endeavors to run the trains strictly in accordance to time table and maintain high standard of punctuality. PR reviews its time table twice in a year, summer time table is introduced w.e.f 15, April and winter 15, October.

The progressive freight train sport organization operated by professional

Management and competent staff committed to provide reliable, competitive and
economical service of recognized standards to its customers.:

1.2 HISTORY OF PAKISTAN RAILWAY:

Pakistan Railways provides an important mode of Transportation in the farthest corners of the country and brings them closer for Business, sight seeing, pilgrimage and education. It has been a great integrating force and forms the life line of the country by catering to its needs for large scale movement of people and freight.

1.2.1BEFORE PARTITION:

The possibility of Karachi as a sea port was first noticed in the mid of 19th century and Sir Henry Edward Frere who was appointed Commissioner of Sind after its annexation with Bombay in 1847 sought permission from Lord Dalhousie to begin survey of sea port. He also initiated the survey for Railway line in 1858. It was proposed that a railway line from Karachi City to Kotri, steam navigation up the Indus /Chenab upto Multan and from there an other railway to Lahore and beyond be constructed.

It was on 13th May,1861 that first railway line was opened for public traffic between Karachi City and Kotri, the distance of 105 miles. The line between Karachi City and Keamari was opened on 16.6.1989.By 1897 the line from Keamari to Kotri was doubled.

The railway line from Peshawar to Karachi closely follows Alexander's line of march through the Hindu Kush to the sea. Different sections on existing main line from Peshawar to Lahore and Multan and branch lines were constructed in the last quarter of 19th century and early years of 20th century.

The 4 sections i.e.Scinde railways, Indian Flotilla company Punjab railway and Delhi railways working in a single company were later on amalgamated into Scinde, Punjab & Delhi railways company and was purchased by the Secretary of State for India in 1885 and in January, 1886 it was named North Western State Railways which was later on renamed as North Western Railways.

1.2.2: AFTER PARTITION:

At the time of partition, North Western Railway's 1847 route mile was transferred to India leaving route miles 5048 to Pakistan. In 1954 The railway line was extended to Mardan and Charsada section and in 1956 Jacababad-Kashmore 2'-6" line was converted into broad gauge. Kot Adu-Kashmore line was constructed between 1969 to 1973 providing an alternate route from Karachi to up country 1.3:GENERAL INFORMATION ABOUT PAKISTAN RAILWAY:

1.3.1: PASSENGER TRAFFIC:

Passenger earnings comprise 50% of the Railways total revenue. During 1999-2000 this amounted to Rs. 4.8 billion. Pakistan Railways carry 65 million passengers annually and daily operates 228 Mail, Express and Passenger Trains. Daily Passengers carried 1,78,000. Pakistan Railways also operate special trains during occasions like congregations of the Dawat-e-Islami and theTableeghi Ijtima.

1.3.2:FREIGHT RATES:

The Freight Business Unit with 12000 personnel, operates over 200 Freight

Stations on the Railway Network. The Unit serves two major ports of Karachi and
Bin Qasim as well as all the four provinces of the country and generates revenue
from the movement of Agricultural, Industrial and imported products, Petroleum
Oil & Lubricants (POL), Wheat, Coal, fertilizer, Rock Phosphate, Cement, Container
traffic and Sugar. About 39% of the revenue is generated from the transportation

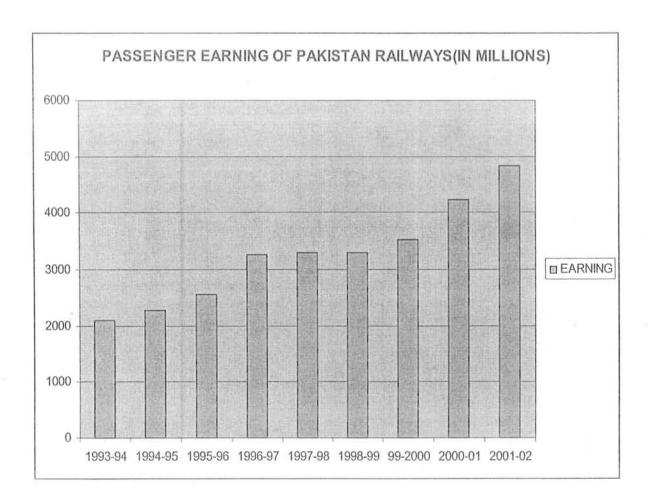
of POL products, 19% from Imported Wheat, Fertilizer and Rock Phosphate. the remaining 42% is earned from domestic traffic.

The Freight Business unit offers services to meet customers requirements, reduce costs through efficiency, innovation and modernization. All possible efforts are made to increase revenues and pass on the benefits to the customers. The Freight Business Unit is headed by an Additional General Manager

The Freight Rates structure is based on market trends particularly of the road transport which is Railways main competitor. The freight rates are no longer rigid but flexible, depending on the lead, peak off peak season, and quantum offered.

1.3.3 PAKISTAN LOCOMOTIVE FACTORY, RISALPUR:

Pakistan Locomotive Factory at Risalpur is a public spread on area of 251 acres of land, was put into service in 1993 with the collaboration of Government of Japan at a total cost of Rs.2284.00 million including a foreign exchange component of Rs.1496.00 million. The rated out part of the factory 2 Diesel Electric Locomotives per month on single shift basis which can be doubled by introducing 2nd shift working. The factory is equipped with the state of the art equipment which can be employed in building of D.E.Locomotives of a horse power and Electric Locomotives with minor adjustments.



" RAILWAY KI BAHALI

QOAM KI KHUSHALI"

The above diagram shows the increase in passenger earning. In 1993-94 it was about 2100 million rupees but now (2001-02) it is nearly 5000 million rupees. Which shows the great progress of Pakistan Railway.

1.4:INTRODUCTION TO MALAKWAL RAILWAY STATION:

District MANDI BAHAUD DIN is situated in cental Punjab.MALAKWAL is the famous and well populated tehsil of MANDI BAHAUD DIN. Its population is half million. It is situated among big cities of PAKISTN like Gujrat , Jehlam and Sargodha. To fulfill the transportation requirements of malikwal's people it was realized that there is a need of railway station.

Malakwal railway station was established in 1913 before the creation of Pakistan. It is one of the biggest railway stations of Pakistan. It is situated on the main Railway line (Peshawar to Karachi). It has 4 Plateforms. It has all facilities that any railway station of Pakistan can have. For example resturant, well furnished waiting rooms etc.

Another important thing of Malikwal railway station is that it has its railway work Shop. This workshop provides all repair and maintinace facilities. It not only fulfills the requirements of Malakwal railway station but also other big stations like Sargodha and Lalamusa.

Malakwal railway station also have its own police center which provides security



1.5: General information about Malakwal railway station:

Malakwal railway station is on main railway line between peshawer and karachi.

1.5.1: Branch lines of Malakwal railway station:

- 1 : Malakwal to Bhaira.
- 2 : Malakwal to Khushab.
- 3: Malakwal to Ghareebwal.

Its branch lines are as under.

- 4: Malakwal to Khewra.
- 5 : Malakwal to Pind Daden Khan.

1.5.2: Different sections of railway station:

- 1: Reception.
- 2 :Security section.
- 3 :Reservation department.
- 4 :Parcel department.
- 5 : Administration department.

1.6: More about Malakwal railway station:

1.6.1 Total revenue:

The monthly income of Malakwal station is 1.8 million rupees. So the daily income is 60000 rupees. Distribution of daily income through parcels and passengers is as under.

Income through passengers: 54000 rupees.

Income through parcels: 6000 rupees.

1.6.2 Total expenditures:

Total expenditures including employees pay, general manitinance etc are about 1.2 million rupees.

So Malakwal railway station is earning 0.6 million rupees profit monthly.

CHAPTER NO 2 EXISTING SYSTEM

EXISTING SYSTEM

2.1 INTRODUCTION:

TO study an existing system, it is necessary to see its working and Observe its

Functionality through every angle. Point out its weakness and notice more Improvements can be made finally develop an efficient and well designed system.

An errorless or efficient system can be made and designed with a thouroughly

study. Incomplete and incorrect study of existing system can lead to design a

wrong and incomplete model of new system. So complete and careful observation is necessary to develop a new model . Hence detailed study of working of exixting system, drawback, constraints and limitations of Existing

system is one of the most important task of analyst's work.

2.2 EXISTING SYSTEM:

The existing system of reservation and parcel system of Malakwal

railway station is not computerized. The existing system is operated by clerical

staff manually. The records are avalible on huge registers and files.

if a pssenger comes for reservation he has to buy a ticket from one place and

reserve seat from another place which is time consuming.

Similarly in parcel booking system there are a lot of difficulties.

2.2.1 BENEFITS OF EXISTING SYSTEM:

- 1 :In this system all the records are kept in files and registers which is easily accessable to everyone at any time.
- 2 :This system includes a lot of employee in this way it help to decrease unemployment.

2.2.2 LIMITATIONS OF THE EXISTING SYSTEM

This system creates much complexity for the passengers as well as clerical

staff.

- → The system is time consuming.A lot of time of passengers and staff is wasted.
- → The data is stored in papers which increases the size of record.
- It is difficult to handle this type of record.
- → Staff has to perform calculations and statistics themselves which requires a lot

of time and skills.

The existing has possibilities of mistakes. The computerization can remove

many mistakes by the staff.

- $ilde{lacktriangeright}$ The existing system is very slow and not attractive in presentation .
- Parcel receiving system is not so safe many parcels are received by wrong persons.
- ◆There is a possibility of foriged tickets.

2.3 WHY TO CHOOSE DATABASE:

Keeping in mind the above problems the database is the only solution

For keeping and maintaining such a large amount of record database provides

12

Many facilities . It not only manages such a huge amount of record but provides

facilities for calculations and statistics which saves the time of database developer.

Database can handle a large amount of records on single and simple pages so the

The time of a user is also saved.

Database helps in making different reports on different events . so it is an Interesting feature for the user.

CHAPTER NO 3 PROPOSED SYSTEM

PROPOSED SYSTEM

3.1 INTRODUCTION:

A DBMS(Database Management System) is basically a computerize Record keeping system .It is a computerized system whoes over all Purpose is to maintain the information and to make that information Avalible on demand.

A relational database is a database that is provided by its user as a Collection of time-varying, normalized relations of assorted degrees

The software that manages the relatioal database is known as relational Database management system (RDBMS).

3.2 FEATURES OF THE PROPOSED SYSTEM:

For a successful system it is most important that it fulfills the user's Requirements , mostly projects fail bacause of the unreasonable Expectations attached to them therefore the users expectations must Be clearly defined . the main goal of this project is to desingn and implement copmlete computerized system that fulfills all rquirements Of the computer inventory control system.

For the system to be developed the folloowing are the proposed features.

- → Be more efficient than existing system .
- Fast and easy access to the required information.

- Easy to use.
- Ensure security and protection of data.
- → Prvide on line message help.
- → Be a system having data integrity and consistency.

3.3 OBJECTIVES OF PROPOSED SYSTEM:

It is important to establish some objectives that proposed system

Should meet .The proposed Railway station database system has
an edge over the present system in context of the following aspects.

(i): EFICIENCY:

The proposed system will be error free . outputs should be satisfactory It would be done by some validation checks at all the data entry Fields.

(ii): FLEXIBILITY:

The new proposed system will be much more flexible in creation and and calculations of records.

(iii):TIME SAVING:

The new system will be time saving for the user. A related information Page will contain all of the records. So the user can find easily desired Information vary easily. It will save his precious time.

(iv):USER FRIENDLY:

Proposed system is user friendly . it would provide on line sources

To the user . it would be manue driven and will give proper messages

Data entry and modification processes would be in user friendly

Environment.

3.4 SOFTWARE SELECTION:

Software selection is very important and it depends Upon the problem you are going to solve . different languages and Packages provide different features that handle strongly in their own way . after a lot of consideration DEVELOPER 6i was selected for the proposed system.

3.5 FEATURES OF DEVELOPER 6i:

Important features of developer 6i are given as

(i):SECURITY AND CONTROL:

DEVELOPER 6i allows the controlled access to the Database. It protect data from unauthorized access By providing passwords and system failures.

(ii):INTEGRITY AND CONSISTENCY:

In consistency between two entities that tend to Represent the some effect is an example of lack of Integrity.DEVELOPER 6i provides this by ensuring the data in database is inconsistent.

(iii):COMPATIBILITY:

DEVELOPER 6i is compatible with industry and commercial Standards including most operating systems. Application Deverloped on 6i can be used virtually on any window NTSystem with little or no modification.

(iv):CONNECTIVITY:

DEVELOPER 6i allows the database connectivity with ASP (active server pages) which helps in launching the database on the web.

(v):HIGHLY AVAILABLE:

At some sites , DEVELOPER 6i works hours per day with no Down time to limit database throughout.

(vi):CLIENT SERVER ENVIRONMENT:

To take full advantages of given computer system on networks, DEVELOPER 6i allows processing to split the database server and client applications.

CHAPTER NO 4 SYSTEM DESIGN

4.1: REVIEW OF DATABASE DESIGN:

Basic knowledge of computers technical terminology is very essential for understanding the concepts of computerized database. Description about some important computer terminology used in project while designing database for Railway Station is as under:

Difference Between Data And Information:

4.1.2:DATA:

Element or unit of knowledge that may be regarded as raw facts, not necessarily Meaningful. Most often data consists of numbers ,such as given values of inputs for the problem to be solved. Data must be discrete ,consists of numeric ,character,alphanumeric and some special symbols.

4.1.3:INFORMATION:

Information is meaningful data that is relavant, accurate and update and can be used to take actions or making descions .Raw data is transformed into information by data processing.data processing not only includes numerical calculations but also other general opreations.

4.1.4:DATA PROCESSING:

Data processing consists of gathering raw data as input, evaluting and placing it in some order , sorting the in some logical sequence

placing it in some proper perspective so that some useful information is produced.

4.2: WHAT IS DATABASE?

It is a coherent collection of data with some inherent meaning, designed, built with data for a specific purpose. a database stores the

data that is useful for us. This is data is entirely a part of whole data availble in

words around us. To be able to be successful in designing and maintaining database we have to do the following

- → Identify which part of the world's data is of interest to us.
- → Identify which specific objects in that part of world's data are of interest to us.
- → Identify a relationship between the objects.

Hence the object and their attributesand relationship between themthat are of

interest to us are stored in databasethat is designed, built and populated with

data for a specific purpose.

4.3: CHARACTERISTICS OF DATABASE MANAGEMENT SYSTEM:

- It represents complex relationship between the data.
- → Keeps a tight control of data redaundancy.
- → Enforces users defined rules to ensure the integrity of table data.
- → Has a centralized data dictionary for the storage of information pertaining

to data and its manipulation.

- Ensures that data can be shared across applications.
- → Enforces data access authorization.
- Has automatic, intelligent backup and recovery procedures for data.
- → Has difficult interfaces via which users can manipulata data.

4.4: Relational Database Management System:

A relational datbase is a

database

that is provided by it's user, as a collection of time_varying, normalized relations of

assorted degrees. The software that manages the relational database is known as

relational database management system (RDBMS).

4.5:ORACLE 8i & DEVELOPER 6i:

After considering a number of relational

database

Management systems availble thes days, DEVELOPER 6i was selected the product

From ORACLE corporation that makes it easy to build database applications it

Handles most of the issues elegntly and well using the features of oracle 8i.

DEVELOPER 6i provides a number of sophesticated tools for the development of

Applicatins. Some of these tools are given as

4.5.1:ORACLE SOL* PLUS:

Oracle SQL * PLUS is an interace through which SQL

Commands may be entered and executed. We can use SQL*PLUS programe

In conjuction with SQL database language and its procedural language extension

As PL/SQL. The SQL database language allows us to store and retrive data in

ORALE SQL*PLUS.SQL AND PL/SQL aommand languages are powerful enough to

serve the needs of users with some database experiecnce. Yet straight forward

enough for new Users who are just learning to work with ORACLE.

4.5.2:ORACLE * FORMS:

The form component of DEVELOPER 6i is the environmental component in which you develop, not surprisingly form modules. It also

development frameworkfor deveoping manue and PL/SQL library modules.

These forms provides fast and easy data entery updation, deletion and queries

to an ORACLE database.

provides

4.5.3:ORACLE * REPORTS:

The report component of ORACLE DEVELOPER 6i is used to

create different reports in a variety of styles. The report designer also includes

library and data objects. It can be used to produce report derived from a single

ORACLE table with column headings, columns of database information system

and totals as desired.

4.5.4: ORACLE * GRAPHS:

The graph component of DEVELOPER 6i is used to create

To create type of graphs (pie chart, bar chart) based on one or more tables of

database. Numbers of utilities are also avalible which also allow easy manipulation

of data structures along with the data stored in these structures. For example

DEVELOPER 6i provides import /export utilities with the help of which it is poissible

to move structures along with the data contained in these fields, from one to another.

4.6:SYSTEM DEVELOPMENT:

Each system comprised of one or more components relation

To one specific branch of system, a description of system components are given

Below

4.6.1:EDITORS:

Developer 6i provides editors that are

- Layout editor.
- → PL/SQL editor.
- → Object navigator.

(i):LAYOUT EDITOR:

It is used for creating, formatting and arranging interfaces items

And boilerplate graphics. It provides us a complete set of drawing and editing tools it provide quick access to frequently used commands.

(ii):PL/SQL EDITOR:

It is used to write triggers, program units, procedures etc.

(iii): OBJECT NAVIGATOR:

It is used to display editors .It provides work area for creating and modifying form objects.

4.6.2:FORMS:

A form application represents data in an on line format consisting of a

Series of fields lay out in one or more windows. These also provide a good way of

Executing and changing that information. You can type data into form fields or .

Or change that is in them, depending upon what the form designer let you does.

There is a particular kind of form called master/detail form that provides the Form into a master record and sveral detailed records.

Once a form is designed data entry operators need not to know the SQL Commands.

4.6.3:CANVAS:

A canvas is the "surface" onwhich you paint objects like text items, push Buttons, check boxes, image items etc.the window is the "frame" or "border" which forms a "view port" for the usre .The user may not see all the canvas at

one time only as much as the window on the canvas allows him to this view is

some time reffered to as the canvas view.

4.6.4:BLOCK:

A block is a logical collection of base tables and nonbase table items. Base table items are normally considered as columns names of some database table.

Whereas non base items may be

Display total, average, summary information calculated from values in

base table items and database tables.

- Accept input from operators that is required by application but that is not stored in the database.
- Display "look up values" that is, database values derived from a table other than the base table of the block.
- Buttons and charts are also nonbase table.

In general non base table items are known as control items and may reference some

Nonbase table block usually name it CONTROL block.

4.6.4:BASE TABLE:

A database table, which is associated to a block, is called a base

Table for a block this block contains all or some of fields defined in that particular

base table.

4.6.5:FIELD:

A block item is the primary building unit of the form .Represents the

columns and data entry areas and describe how the data should be displayed and

validated and how an operator should interact with with the data while it is entered at the most basic level , fields serves as container for data with in a form

A field is owned by or associated with a block .each block normally owns one or

more fields.

4.6.6: MASTER DETAIL RELATIONSHIP:

A form may contain more than one block.

These forms may have independent status or they may have master detail Relationship .A Block is called master block if in master, there exists one or multiple records in detail blocks. There is primary to foreign key relationship between these blocks.

4.6.7:TRIGGER:

A Trigger is a block of PL/SQL code you have written to customize your

Application. You use triggers to responde run time events with appropriate processing triggers are sets of sets of processing commands. triggers can be imposed at field Level, block level and form level.

4.7:SYSTEM DESIGN:

The system design phase can be classified in to two catagories

- Logical database design.
- Physical database design.

4.7.1:LOGICAL DATABASE DESIGN:

This phase simplifies the approach to design

large

relatrional database by reducing the number of data dependencies that need to

be analyzed.Logical database design consists of

- → OUTPUT Design.
- → INPUT Design.

(a):OUTPUT DESIGN:

The output design constitutes an important part of the system.

The output may be either in soft form (displayed on screen) or in hard form (print

out) .The output design of the proposed system consists of the following

- Query: normally screen oriented.
- → Report: normally print out.
- Graphic display: narmally printed out for descion purpose.

(i): QUERIES:

Some of the most important queries are mentioned here.

- → Train wise information of all sent goods.
- → Resesvation wise information of passengers in a specific month.
- → The most profitable rout.
- → Maximum ticket selling emplyee.
- → The rout with minimum passengers.
- → Cancelation wise information of all passengers.

(ii):REPORTS:

- → Timetable of all trains of every month.
- → Reservation reports of all trains.
- Reservation report of an employee.
- Report of sent goods on a specific goods train.
- Report of passengers who canceled their reservations.
- → Fare report of all routs.

(b): INPUT DESIGN:

Input gesign in the main source of interaction between the user of the system and DEVELOPER. The out come of the system is based upon this design.

More efficient and accurate would be the output design.

(c): CODE DESIGN:

A code is a small combination of character used to represent a large

Item and is used whenever there is a high chance of entering incorrect information.

Following are the advantages of introducing codes in the system

- Codes save computer storage as compared to actual data.
- Low chances of spelling errors.
- Speeds up entring process.

(d): FORM DESIGNING:

Input screens for the system are designed so as to handle

Exceptional cases, checks for possible errors are provided and resulting int an

Error free output. The general characteristics of the input screens are:

(i): PASSWORDS:

The password system would be implemented for the security purpose Whenever a user logs in such users are called registered users.

(ii): VALIDATION CKECKS:

These checks are imposed are different hierachical levels.

For instance at item level , block level , form level which do not allow the user to

Move ahead untill a valid data is entered.

(iii): DUPLICATE CODES:

The possibility of entering a duplicate code has been totally

Eliminated.

(iv): LIST OF VALUES:

LOVs are provided for various items , on line help ,this help is

Provided for a better understanding of system and for ease of the user.

(v): ERROR MASSEGES AND ALERTS:

These are handeled in all the forms and as soon

as the user commits the mistake , an error message or an alert is displayed on

the screen.

(vi): DATA TYPE CHECKS:

These checks are taken care of by Oracle itself and in case of

Type mistake error messages are shown on the message line at the bottom of

the Screen.

(vii): MODIFICATION AND DELETION:

These stratagies are defined in such a way that

under certain cicumstances no modifications or deletions are allowed.

4.7.2: PHYSICAL DATABASE DESIGN:

A Database is the physical design matured

from

the logical design. It is based upon the relationship among the data rather than

the convenience of the storage structure. A remarable feature of the database

is that , the data is organised in a systematic way. Such that a tabular format

depending upon the strucure defined for it. The systematic organization of data

applided in a computer bade system makes a database distinct form of record

keeping.

while designing the database, the facts such as data sharing , data integration

consistency and data standardization have been taken care of .

TABLE DESIGN:

The system contains the following 18 tables. Table names, their Description and their specifications are given as

CHAPTER NO 5 TABLES

Table Name: STAFF.

Description: This table holds the record of staff types.

Primary key: Staff_id.

Specifications:

Field name Description

Data type

Constraints

Staff_id

Staff type

Number

Not null

Detail

Staff detail

Character

Table Name: Designation.

Description: This table holds the record of staff designations.

Primary key: Desg_id.

Foreign key: Staff_id.

Field na	me l	Description	Data type	Constraints
Desg_id	Ī	Designation id	Number	Not null
Staff_id	5	Staff type	Number	References
Detail	I	Designation detail	Character	

Table Name: Employee:

Description: This table holds the record of employee of reservation and parcel system.

Primary key: emp_no.

Foreign key: desg_no.

Field name	Description	Data type	Constraints
SRNO	serial number	Number	
Emp_no	employee number	Number	Not null
Desg_no	Designation number	Number	References
Name	Name	character	
F_name	Father name	character	
NIC_No	ID card number	character	
Age	Age	number	
Sex	Sex	character	
Address	address	character	
BPS	basic pay scale	number	
Joining_date	Date of joining	Date	



Table Name: Train_type.

Description: This table holds the record of all types of trains.

Primary key: Tr_type.

Specifications:

Field name Description Data type Constraints

Tr_type Train type · Number Not null

Detail Train detail Character

Table Name: Train.

Description: This table holds the record of all trains including time

tabble and rout.

Primary key: Tr_No.

Foreign key: Tr_type.

Field name	Description	Data type	Constraints
SrN	Serail number	Number	
Tr_no	train number	number	Not null
Tr-type	Train type	number	references
Name	Train name	character	
Total_capacity	Total capacity of train	character	

Field name	Description	Data type	Constraints
Coming_from	Train coming from	character	
Going_to	Train going to	character	
Arrival_time	Arrival time	character	
Dep_time	departure tim	character	

Table Name: TICKET.

Description: This table holds the record of all local tickets.

Primary key: TICKET_No.

Foreign key: Tr_no.

Field name	Description	Data type	Constraints
SrNo	Serial number	Number	
Ticket_No	Ticket number	number	Not null
Tr_No	Train number	number	references
From	City from	character	
То	City to	character	
Class	Class type	character	
Tk_type	ticket type	character	
Fare	Fare amount	number	
T_date	ticket date	date	

Table Name: Passenger_type.

Description: This table holds the record of all type of passengers.

Primary key: Psg_type.

Specifications:

Field name

Description

Data type

Constraints

Psg_type

Passenger type

Number

Not null

Detail

Passenger detail

Character

Table Name: Class_id.

Description: This table holds the record of classes of compartments.

Primary key: Class_id.

Specifications:

Field name

Description

Data type

Constraints

Class_id

class type

Number

Not null

Detail

Class detail

Character

Table Name: Reservation_type.

Description: This table holds the record of all reservation types.

Primary key: Res_type.

Specifications:

Field nameDescriptionData typeConstraintsRes_typeReservation typeNumberNot nullDetailResevation detailCharacter

Table Name: Fare.

Description: This table holds the record of fares of all routs.

Foreign key: Class_No.

Field name	Description	Data type	Constraints
SrNo	Serial number	Number	Not null
Class_no	Class number	Number	references
From I	city from	Character	
То	City to	Character	
Amount	fare amount	number	

Table Name: Reservation.

Description: This table holds the record of all reservations.

Primary key: Res_No.

Foreign key: Res_type.

Foreign key: Tr_No.

Foreign key: Psg_type.

Foreign key: Class_No.

Foreign key: Emp_no.

Field name	Description	Data type	Constraints
SRNo	Serial number	Number	
Res_no	Reservation number	Number	References
Res-Type	Reservation number	Number	References
Psg_No	Passenger number	Number	References
Tr_no	Train number	Number	References
Class_No	Class number	Number	References
NAME	name	Character	
S_from	Station from	Character	
S_To	Station to	Character	
S_B	Seat or Berth	Character	

Field name	Description	Data type	Constraints
Coach_no	Coach Number	Number	
Res_date	Reservation date	Date	
Dep_date	Departure date	Date	
Dep_time	Departure time	Charactar	
Emp_No	Employee number	Number	References
Totala_fare	Total payable fare	Number	
Concession	Concession	Number	
Fare_paid	Total paid fare	Number	

Table Name: Cancelation.

Description: This table holds the record of all cancled reservations.

Primary key: Sr_No.

Foreign key: Res_No.

Foreign key: Emp_No.

Foreign key: Res_No.

Field name	Description	Data type	Constraints
Sr_No	Serial number	Number	Not null
Res_No	Reservation Number	Number	References
Emp_No	Employee Number	Number	References
Can_date	canelation date	Date	
Deduction	Deduction	Number	
Amt_back	Refunded amount	Number	

Table Name: Goods_type.

Description: This table holds the record of all goods type which can

be sent from railway station.

Primary key: Goods_type.

Specifications:

Field name	Description	Data type	Constraints
Goods_type	goods type	Number	Not null
Detail	goods detail	Character	

Table Name: Goods.

Description: This table holds the record of Goods detail.

Primary key: Good_id.

Foreign key: Goods_Type.

Field name	Description	Data type	Constraints
Good_id	Good Id	Number	Not null
Goods_type	Goods detail	Number	References
Good_name	Good name	Character	
No_of_item	Number of items	Character	
Weight	Weight of items	Character	

Table Name: Sender.

Description: This table holds the record of Goods senders.

Primary key: Sender_id.

Specifications:

Field name	Description	Data type	Constraints
Sender_id	Sender_Id	Number	Not null
Name	Sender namel	Character	
F_name	Father name	Character	
Ph_no	Phone number	Number	
Address	Address	Character	

Table Name: Consignee.

Description: This table holds the record of Goods receiving person.

Primary key: Consignee_id

Field name	Description	Data type	Constraints
Consignee_id	Consignee_Id	Number	Not null
Name	Consignee namel	Character	
F_name	Father name	Character	
Ph_no	Phone number	Number	
Address	Address	Character	

Table Name: Forwarding.

Description: This table holds the record of all forward parcel.

Primary key: Booking_no.

Foreign Key: Good_id.

Foreign Key: Emp_no.

Foreign Key:Tr_no.

Foreign Key: Sender_id.

Foreign Key:Consignee_id.

Field name	Description	Data type	Constraints
Booking_no	Booking number	Number	Not null
Good_id	Good id	Number	References
Emp_no	Employee number	Number	References
Tr_no	Train number	Number	References
Sender_id	Sender id	Number	References
S_from	Station from	Character	
S_to	Station to	Character	
Dep_data	Departure date	Date	
Dep_time	Departure time	Character	
Compartment_no	Compartment_no	Number	
Total_fare	Total paid fare	Number	
Consignee_id	Consignee id	Number	References
Bk_date	Booking date	Date	

Table Name: Receiving.

Description: This table holds the record of all receiving parcel.

Primary key: Rec_no.

Foreign Key: Booking_no.

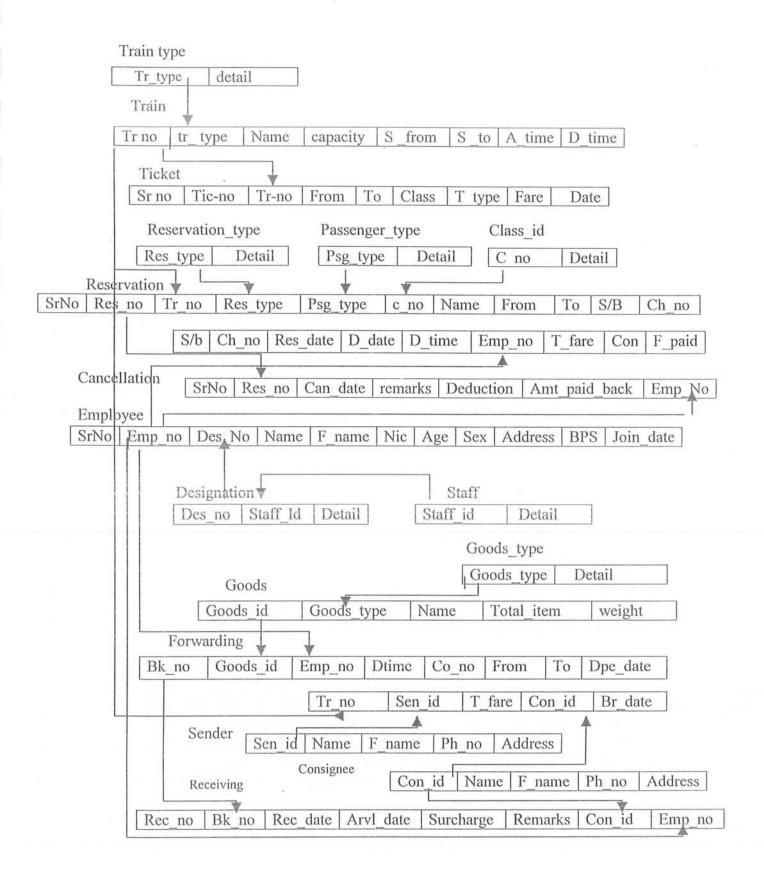
Foreign Key: Emp_no.

Foreign Key: Consignee_id.

Field name	Description	Data type	Constraints
Rec_no	Receiving number	Number	Not null
Booking_no	Booking number	Number	References
Emp_no	Employee number	Number	References
Consignee_id	Consignee id	Number	References
Arrival_date	Date of arrival	Date	
Receiving_date	Date of receiving	Date	
Extra_dues	Extrs dues	Number	
Remarks	Remarks	Character	

APPENDIX 1

ENTITY RELATIONSHIP DIAGRAM



APPENDIX 2 ONE WAY FORMS

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PASSENGER TICKET FORM

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Dep_Time	Compartment_No	
Total_Fare	Consignee_Id	1
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	Remarks 1	
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PARCEL RECEIVING FORM

APPENDIX 3 TWO WAY FORMS

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GOODS INFORMATION



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TRAIN, TIME TABLE AND ROUT INFORMATION FORM

APPENDIX 4 THREE,FOUR AND FIVE WAY FORMS

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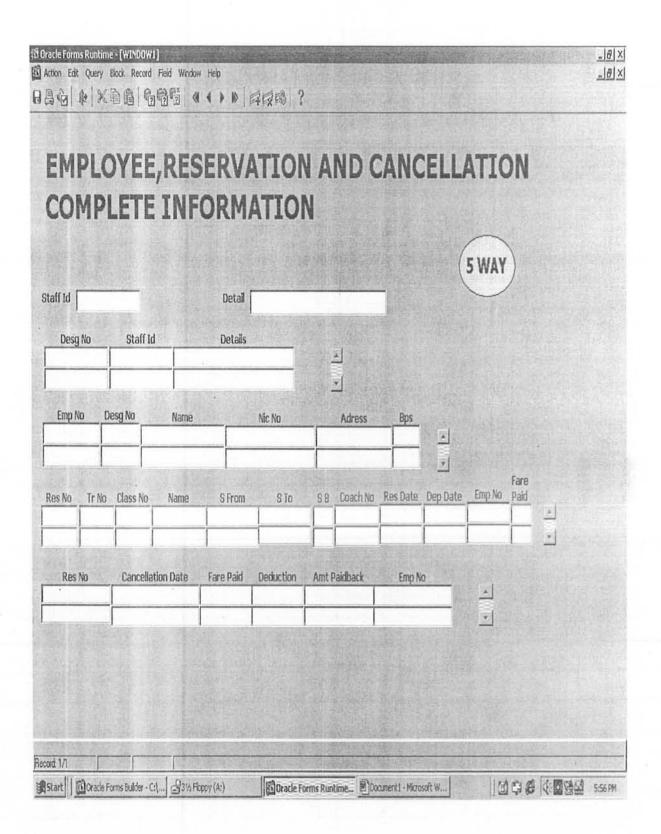
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FOUR WAY EMPLYEE WISE FORWARDING FORM



EMPLOYEE RESERVATION CANCELLATION INFORMATION FORM

APPENDIX 5 ORACLE REPORTS

