

## AKISIAN RAHWAYS SYSTEM

PAKISTAN RAILWAYS SYSTEM



## BY EJAZ AHMED CH MOHAMMAD ASGHAR SAEED

A Project report submitted to Quaid-e-Azam University as a partial fulfillment of the requirement for ......

"THE POST GRADUATE DIPLOMA IN

COMPUTER SCIENCE



# و كالله التحقيق التروي

شروع اللدكے پاك نام سے جوبرا مہربان اور نہایت رحم والا ہے

#### THE PROPHET SAID

"NAME YOUR SELVES WITH MY NAME (USE MY NAME) BUT DO NOT NAME YOURSELVES WITH MY KUNYA NAME (i.e ABDUL QASIM). AND WHOEVER SEES ME INA DREM THEN SURLY HE HAS SEEN ME FOR SATAN CAN NOT IMPERSONATE ME. AND WHOEVER TELLS A LIE AGAINST ME (INTENTIONALLY), THEN (SURLY) LET HIM OCCUPY HIS SEAT IN HELL-FIRE."

\*\*\*\*\*\*



THE SUBLINE LOVE OF OUR RESPECTED

PARENTS AND TEACHERS, WHO HAVE PUT

ALL THEIR EFFORTS TO MAKE US STAND

WHERE WE ARE TODAY & WHOSE HANDS

ALWAYS RAISED IN PRAYERS FOR

US

## ACKNOWLEDGEMENTS

All the praises and thanks for almighty ALLAH, the most Merciful, the most Beneficent, the Gracious and Compassionate, who born me in a Muslim community and blessed me with health, thoughts talented teachers, helping friends to complete this work.

We offer my sentiments to "HAZRAT MUHAMMAD( peace and Blessing of ALLAH be upon him) who is forever a model of guidance and knowledge for humanity.

With profound gratitude and deep sense of devotion, We wish to thank our worthy supervisor "DR.GHULAM MUHAMMAD" Director Computer Centre for his valuable suggestions, inspiring guidance, skillful supervision & constructive criticism in the completion of project.

Our gratitude will remain incomplete, if we don't mention contribution of our respected teacher "MR. ABDUAL SUBHAN & "MR.CH.MUHAMMAD YAQOOB ASSISTANT MECHANICAL ENGINEER PAKISTAN RAILWAYS) for their help and co-operation in a variety of ways in the completion of project.

Our success really the fruit of sincerest prayers of our parents, who always prayed for our success and for inspiring us to each higher goal in every sphere of life......

May ALLAH Almighty give them long and happy life "AAMEEN".

We also express our love and regards for other staff and lab. Members of the computer centre for their friendly co-operation during our studies.

Finally we apologies, if we have caused anger or offence to any body.

EJAZ AHMED CH.

MUHAMMAD ASGHAR SAEED.

#### **DECLARATION**

We declare that this software, neither as a whole nor as a 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/Information Technology successfully as a result of our own struggle and research. No portion of this whole work 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 the consequences.

Date: 25/09/2003

1. Ch. Naz Ahmed

2. Mohammad Asghar Saeed.



#### PROJECT TITLE

#### "PAKISTAN RAILWAYS SYSTEM"

#### **OBJECTIVE**

"To COMPUTERIZE PAKISTAN RAILWAYS SYSTEM Regarding to different services like:

- · Booking system.
- Driver's duty.
- · Passenger enquiry. "

SUPERVISED BY:

Dr. Ghulam Muhammad.

(Director Computer Centre)

STARTING DATE:

July 03, 2003.

**COMPLETION DATE:** 

September 20, 2003

LANGUAGE USED:

**MICROSOFT ACCESS 2000** 

SYSTEM USED:

PENTIUM-III

**OPERATING SYSTEM:** 

WINDOWS-98

### **FINAL APPROVAL**

This is certified that we have read the thesis submitted by:

- 1. EJAZ AHMED CH.
- 2. MUHAMMAD ASGHAR SAEED.

students of Computer Centre.

Our judgment this dissertation is of sufficient standards to warrant its acceptance by the QUAID-I-AZAM University for the award of "POST GRADUATE DIPLOMA" in Computer Science.

EXTERNAL EXAM	IINAR.
SUPERVISOR.	
	( Dr. Ghulam Muhammad.)
DIRECTOR.	
	(Dr. Ghulam Muhammad.)

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#### CHAPTER #1

#### **History of Pakistan Railways**

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 lifeline of the country by catering to its needs for large scale movement of people and freight.

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.

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

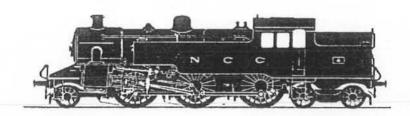
Jacababad-Kashmore 2'-6" line was converted into broad gauge. Kot Adu-

Kashmore line was constructed between 1969 to 1973 providing an alternate route from Karachi to up country.

\*\*\*\*\*\*\*\*

#### CHAPTER # 2

#### PAKISTAN RAILWAYS SYSTEM



We can divide this existing system into three categories.

- 1. P.B.U (PASSENGER BUSINESS UNIT)
- 2. F.B.U (FRADE BUSINESS UNIT)
- 3. INFRA BUSINESS UNIT

#### 2.1 P.B.U (PASSENGER BUSINESS UNIT)

This unit deals with:

- Passenger train
- Passenger booking system
- Mechanical wing

#### **PASSENGER TRAIN**

It is concerned with the all Passenger trains.

#### PASSENGER BOOKING SYSTEM

It is concerned with reservations of seats of passengers in different passenger trains and also concerned with the booking of luggage.

#### **MECHANICAL WING**

This wing is related with the Powers (Engines) and their mechanical operations.

#### 2.2 F.B.U (FRADE BUSINESS UNIT)

This unit deals with: goods train (usually for all trading transaction as transport from Karachi to Peshawar (round about all over the Pakistan).

#### 2.3 INFRA BUSINESS UNIT

This unit is further sub divided into two categories:

- 1. Engineering Cell. 2. Administrative Structure.
  - ENGINEERING CELL.

This cell is concerned with:



- 1. Maintainess of tracks.
- 2. Double & single operated tracks
- BUILDING
  - 1. Maintainess of buildings
- ADMINISTRATIVE STRUCTURE.

It can be understand by the help of following diagram:

Dakistan railway ministry

(Its a final authority for making laws and decisions regarding to railway aspects.)

#### General Manager (GM)

Higher Commanding officer over all Pakistan Railways

#### 3. <u>Divisional Superintendent (DS)</u>

Higher Commanding Officer at the district level.

There are seven Commanding divisions of Pakistan Railways on district levels through out all over Pakistan.

- Divisional Superintendent (DS)-Lahore.
- Divisional Superintendent (DS)-Multan.
- Divisional Superintendent (DS)-Rawalpindi.
- Divisional Superintendent (DS)-Peshawar.
- Divisional Superintendent (DS)-Quetta.
- Divisional Superintendent (DS)-Karachi.
- Divisional Superintendent (DS)-Sukhar.

Under the command of each D.S following officers do work:

- DME'S(DIVISIONAL MECHANICAL ENGG.
- DEN(DIVISIONAL CIVIL ENGG.)
- DTO'S(DIVISIONAL TRAFIC CONTROLL OFFICER)
- DAO'S(DIVISIONAL ACCOUNTS OFFICER)

The detail of remaining officers, which perform their duties under the command of above mentioned Officers, is as:

- DME'S(DIVISIONAL MECHANICAL ENGG.
  - ► AME(ASSISTANT MECHANICAL ENGG)
    - ▶ FO'S (POWERS) ▶ HTXR'S (WEGON'S)
  - ▶ AEN (ASSISTANT CIVIL ENGG)
    - ► PWI'S
- ► IOW 'S
- ▶ DAAO'S (DIV: ASISTANT ACCOUNTS OFFICER)
  - ► ACOUNT'S STAFF.

## OFFICERS WORK-BRIEFING

@. GM(General Manager)

Controls all Commanding Staff of Pakistan Railways

@. DS(Divisional Superintendent)

Controls all Commanding Staff of Pakistan Railways at district level

@. DME'S(Divisional Mechanical Engg).

Controls the Mechanical branch with two aspects:

- Powers (Engines)
- Coaches
- @. <u>DEN(Divisional Civil Engg.)</u>

Controls Civil Engineering Environments.

#### @. DTO'S(Divisional Traffic Control Officer)

Controls the signals, rack & placement of trains on particular tracks.

#### @. DAO'S(Divisional Accounts Officer)

Controls the Account's department at district level.

#### @. DCOS'(Divisional Commercial Officer)

Caretaker of Stalls on platforms, tickets & Constructive works.

@. FO'S (Forman loco-motive)

Controls loco-motives in shed.

@. HTXR(Head train adjustment officer)

To monitor the coaches.

#### CHAPTER #3

## **Proposed System**

After studying the nature of existing system and problem in receiving and updating the information a new computer based system is purposed in order to meet the requirements of the user. The purposed system is computerized and has electronic data processing which makes the system more efficient, economical, and reliable and error free.

This chapter explains the objectives of the purposed system, its differences from the existing system, input of the system and describe the software and hardware selection.

#### 3.1 PHASES OF THE PURPOSED SYSTEM

- Analyzing the problem.
- Requirement Specification
- File Designing
- Program designing
- Developments.

#### 3.2 REQUIREMENT SPECIFICATION

- Output specification
- Input specification
- Processing specification

#### 3.3 OUTPUT SPECIFICATION

Output is specified first to define the goal. i.e. "The Required Result". Specification of result is both in visual and printed form.

#### 3.4 INPUT SPECIFICATION

Specification of the input is also in both visual and printed form. Visual charts may be drawn up for input data. Another approach is simply to list the filed name, field location and types of data.

#### 3.5 PROCESSING SPECIFICATION

The processing requirements where by input will be transferred into required output, also must be spelled out in detail.

#### 3.6 FILE DESIGNING

All purposed file must be normalized to minimize redundancy. The whole database must be in at least third normal form, where a database is a collection of related data (files) about an enterprise with multiple uses. The major concept of relational data model used in developing the conceptual model is the normalization process. Simple normalization process is the process of grouping the data elements into table representing entities and their relationships. The normalization rules can be viewed as:

#### 3.7 FIRST NORMAL FORM

A relation is in first normal form is all underlying domain contains atomic Values.

#### 3.8 SECOND NORMAL FORM

A relation is in second normal form if and only if it is in first normal form and every non key attribute is fully functional dependent on the primary key.

#### 3.9 THIRD NORMAL FORM

A relation is in third normal form if and only if it is in second normal form and no non key attribute depends on the other non key attribute.

#### 3.10 OBJECTIVES OF THE PURPOSED SYSTEM

- \* To convert the manual processing into computerized processing.
- To reduce extra paper work
- To reduce the number of documents
- \* The retrieve information quickly
- To reduce chances of errors.

#### 3.11 CHARACTERISTICS OF THE PROPOSED SYSTEM

Following are the characteristic that system may contain.

#### ACCURACY

The system should accurate and error free information needed for decision making.

#### USER FRIENDLY

Authorized staff should communicate with the system through simple conversion. No specialized computer staff should be needed.

#### EFFICIENCY

The purposed system should be faster and efficient.

#### DATA SECURITY

It must refer to the protection of data from any loss or destruction. The data required for decision making is very important and valuable.

#### RELIABILTY

The purposed system should me be more reliable than the existing system.

#### PRODUCTIVITY

A significant reduction in clerical task leads to more improved staff productivity.

#### ECONOMY

The purposed system should be more cost beneficial as compared to the existing system.

#### QUERIES

One major objects of establishing a data base us to retrieve information quickly and efficiently. Queries are the standard that retrieves the information on the screen in any combination.

Queries in the purposed system have been provided, keeping in mind, the questions that may be arise in the user mind regarding the retrieval of desired information from the system.

#### REPORTS

Reports are also form of queries that is printed on paper. The reports produced by the system are well formatted, detailed and according to the user requirement. The report could also be helpful for the management of institution's progress.

#### CHECKS

Various checks are implemented in the system particularly on data entry, updating and deleting the module to ensure data validity, integrity and consistency. These checks will prevent the user from entering data. Some Checks are built in and some are self determined.

#### SOFTWARE SELECTION

Software selection is very important and it depends on the problem that you are going to solve. There are three aspects of data bases, Input, Output and the program that manages all the options and storage of information. It is very important to choose suitable software.

#### 3.10 HARDWARE CONSIDERATIONS

The hardware and operating system requirements for the purposed system are:

Processor:

266 MHZ

Main Memory:

128 MB

Hard Disk:

4GB

Monitor:

**VGA Color Monitor** 

Printer:

Laser Printer/Dot Matrix

Operating System:

Windows 98/NT

#### CHAPTER # 4

## **TESTING**

#### 4.1 SYSTEM TESTING

The objective of testing is to determine whether the program satisfies the requirements of the user or not. It will not satisfy some requirements, if it still contains some errors. All the newly written or modified application programs as well as new procedural manuals, new hardware and all the system interfaces must be tested thoroughly. Haphazard, trial-and-error testing will not suffice.

Testing is done through system developments not just at the end. It is meant to turn up here to fore unknown problem. Not to demonstrate the perfection of the programs, manuals or equipment. Although testing is tedious, it is an essential serious of steps that assure the quality of eventual system. It is for less disruptive to test before hand then to have poorly tested system fail after installation. Testing is done on many different levels at various intervals. Before the system is put into production, all programs must be desk checked to see if modules work together with one another as planned. A system is tested for online response, volume of transactions, stress, recovery from failure and usability the system as a working whole must also be tested. This includes testing the interfaces between the subsystem documentation and output.

#### 4.2 PROCEDURE FOR SYSTEM TESTING

- Unite testing is testing changes made in existing or new program.
- Sequential or series testing is checking the logic of one or more program in candidates system where the output of one program will effect the processing done by another program.

- System testing is executing a program to check logic, changes made in it and with the intention of finding errors making the program fail.
- Effective testing does not guarantee reliability. Reliability is a design consideration.
- Positive testing is making sure that new program does in fact process certain transaction according to specifications.
- Acceptance testing is running the system with live data by actual user.

#### 4.3 PROGRAM TESTING WITH TEST DATA

Much of the responsibility for program testing resides with the original author of each program. At this stage programmer must first desk cheek their programs on paper to check weather the routine works as it is written? Next programmers must create both valid test data. These data are then run to see if base routines work and also catch errors.

#### 4.4 LINK TEST WITH TEST DATA

When programs pass desk checking and checking with test data they must go through link testing which is also referred to as a string testing. Link testing check to see if programs that are independent actually work together as planned.

#### 4.5 FULL SYSTEM TESTING WITH TEST DATA

When link test are satisfactory concluded the system as a complete entity must be tested. At this stage operators and\_ user become actively involved in testing. Test dated created by system analyst for the express purpose of testing system objectives are used.

#### 4.6 FULL SYSTEM TESTING WITH LIVE DATA

When system using test data prove satisfactory it is a good idea to try a new system with several passes on what is called LIVE DATA that have been successfully processed through an existing system.

#### 4.7 **VOLUME TESTING**

In this test we create as many records as would normally be produced to verify that the hardware and software will function correctly. The user is usually asked to provide test data for volume testing.

#### 4.8 STRESS TESTING

The purpose to stress testing is to prove that the candidate system does not malfunctions under peak loads. Unlike volume testing where time is not a factor, it subjects the system to a high volume of data over a short time period. This stimulates an online environment where a high volume of activities occurs in spurts.

#### 4.9 RECOVERY AND SECURITY

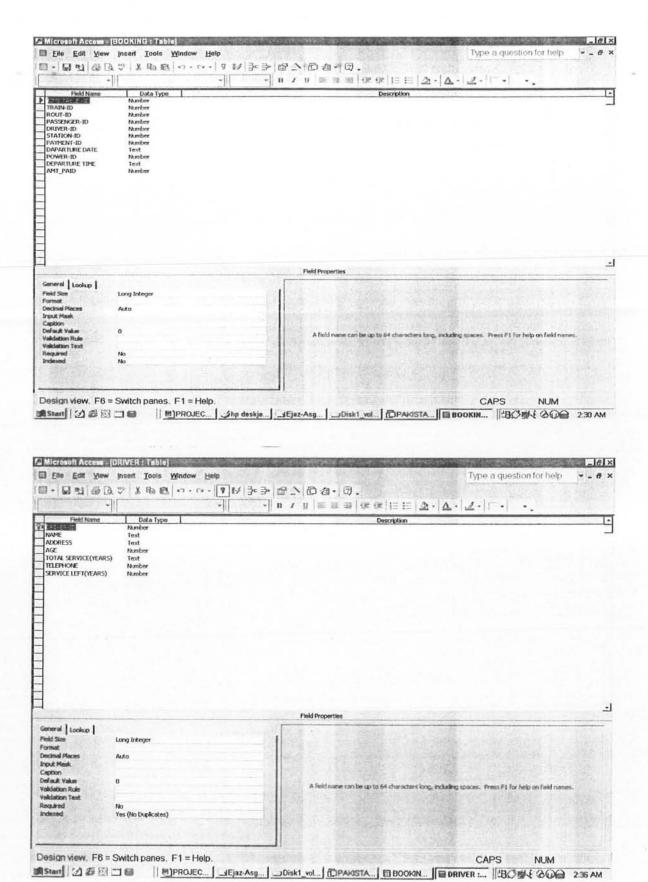
A force system failure is induced to test a backup recovery procedure for file integrity in accurate data are entered to see how the system responds in terms of errors deduction and protection .Related to file integrity is test to demonstrate that data and programs are secured from unauthorized access.

#### 4.10 DEBUGGING THE PROGRAM

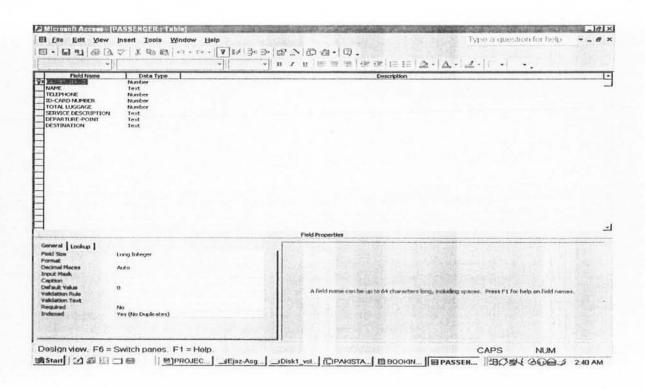
If during the test procedure any error is found or if the program is not working correctly, then it needs to be debugged, where debugging means to locate and remove errors.

#### 4.11 **DOCUMENTING THE PROGRAM**

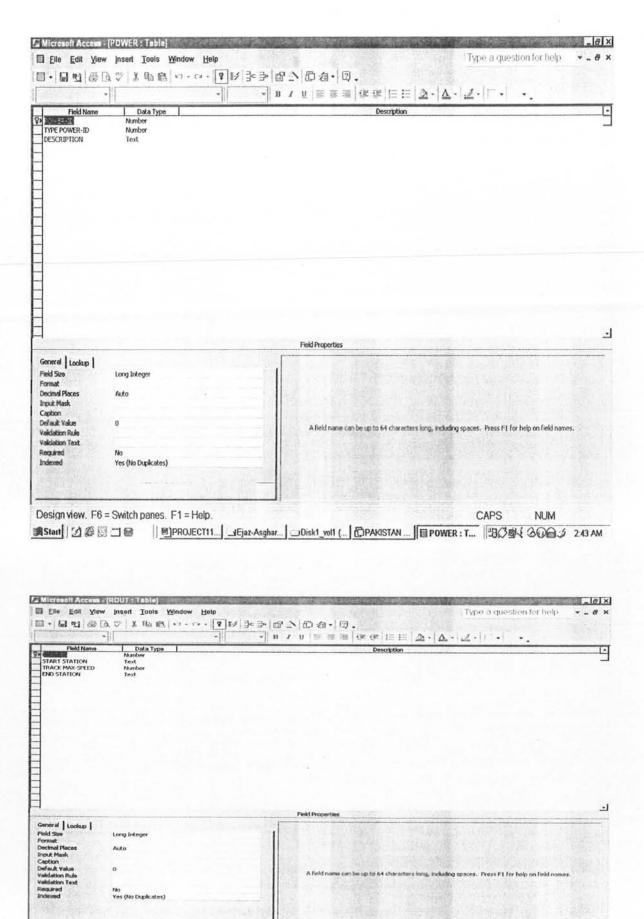
Documentation includes paper work, English language descriptions, diagrams, forms, users guide, input output specifications, flow charts etc. Documentation is necessary other wise it will be difficult to add capabilities and modify the program as requirements change are tested program is often stores on disc or tape while a program may be capable to fulfilling the task for which it was designed, the program will be difficult to use unless the operator knows the inputs necessary for the program and the output it produces.



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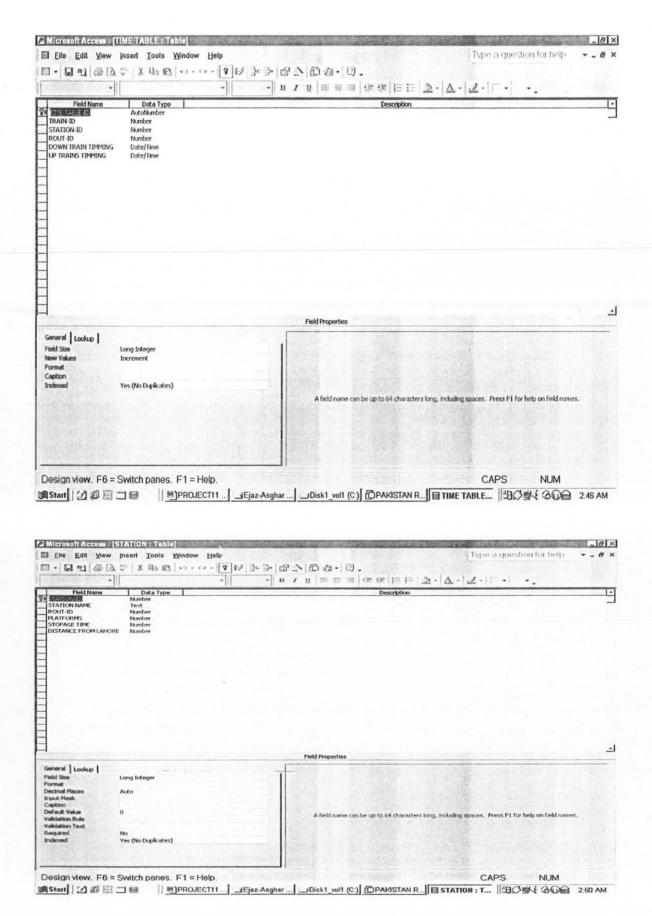
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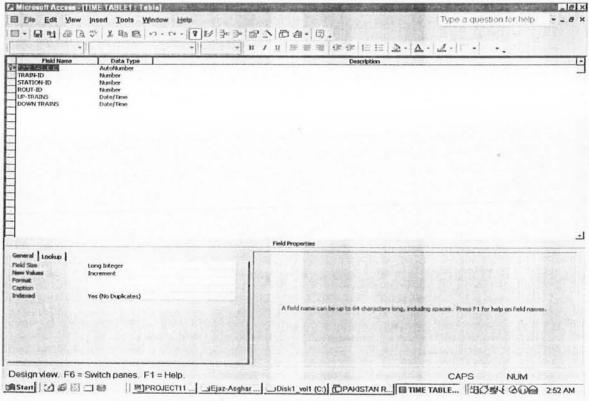
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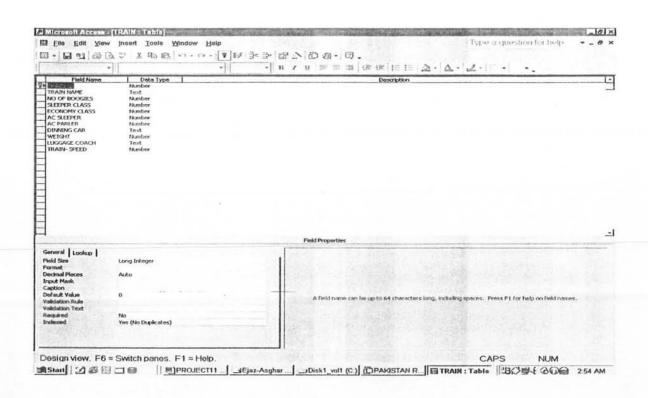
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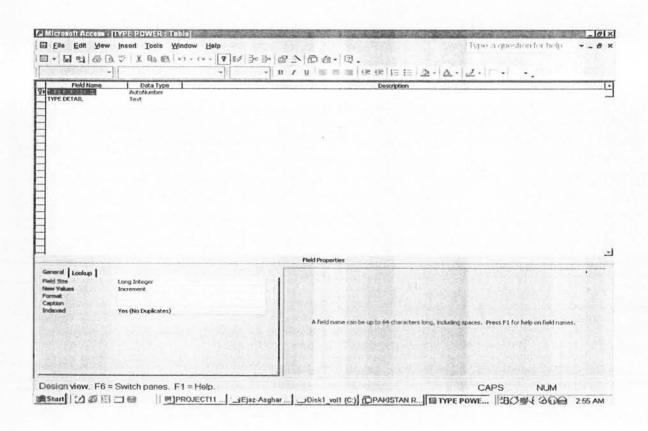
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#### 4.13 QUERIES

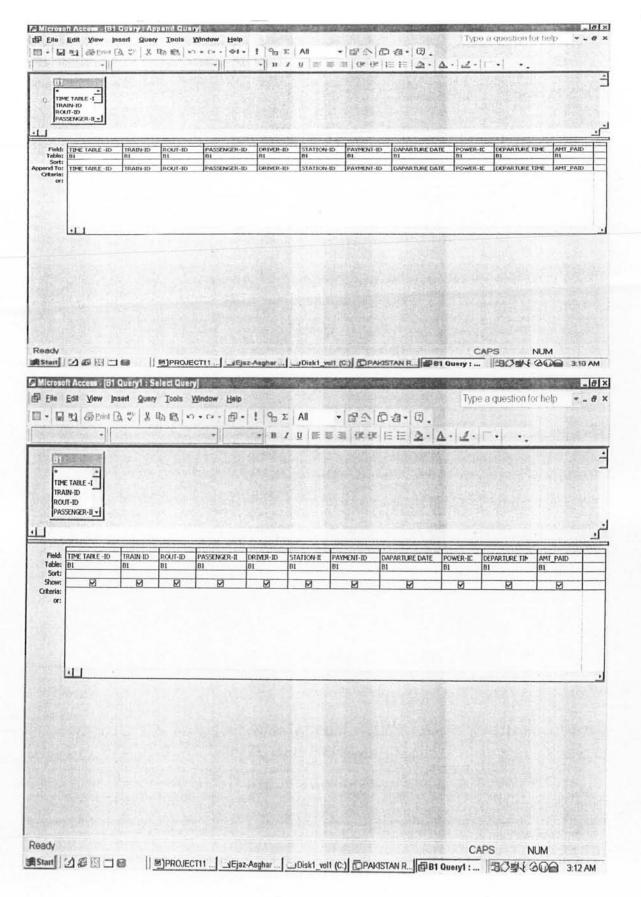
There are few examples of queries.

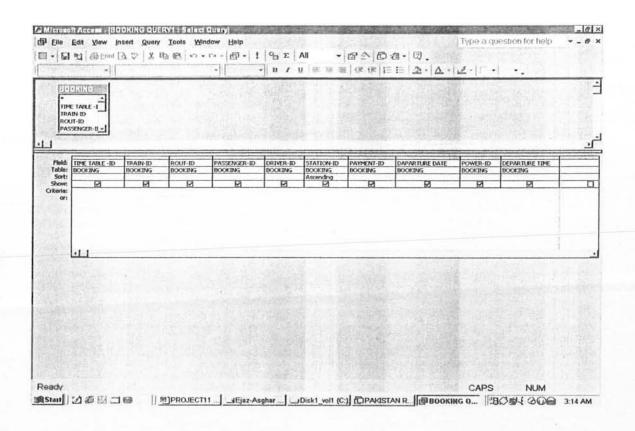
- List of all the trains running on the particular route.
- List of trains on all the routes.
- List of engines connected with particular trains.
- List of trains connected with particular engines.
- List of passengers on particular train on particular date.
- List of passengers of particular train for duration of one week.
- List of passengers of all trains in particular route.
- List of passengers of particular train for particular route.
- List of passengers of all trains for all routes on particular date.
- Total luggage of a particular train on a particular date.
- Total luggage of a particular train on particular route.
- Total luggage of all trains in a particular route on a particular date.
- Total luggage of passengers of a particular train on all routes on a particular date.
- Total luggage of all trains of any two routes on a particular date.
- Total luggage o fall trains on all routes (for a week).
- List of engines connected with all the trains on a particular route.
- List of engines connected with those trains having speed greater than 60 on a particular route.

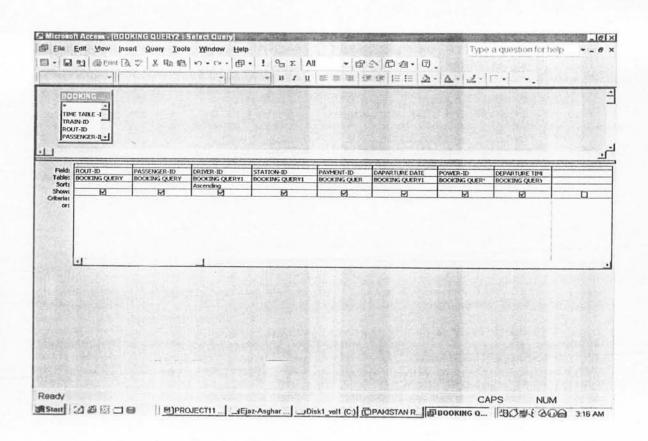
- List of engines connected with trains having speed greater than 60 on all routes.
- List of passengers (Govt. servants) on a particular train on a particular route on a particular date.
- List of passengers (Govt. servants) on all trains on all routes on a Particular date.
- List of passengers (private) on particular train on a particular route on a particular date.
- List of passengers (private) on all trains on all trains on a particular date.
- Total number of boogies connected with a particular train at a particular route on a particular date.
- Total number of boogies connected with all trains on particular date.
- Total number of boogies connected with a particular train at a particular route for a particular week.
- Total number of boogies connected with all trains at all routes on a particular week

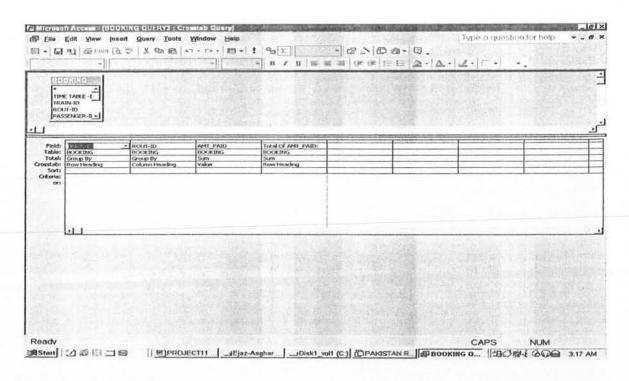
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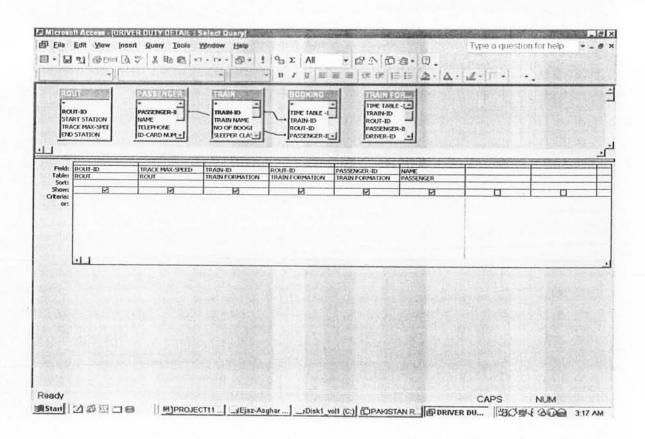
We can add or make so many queries according to the requirements, above mentioned queries are just few examples regarding to system.

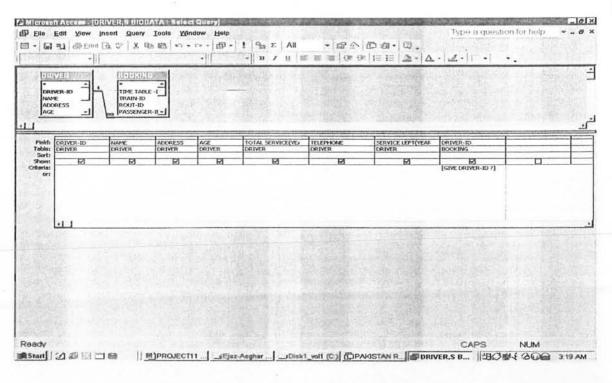


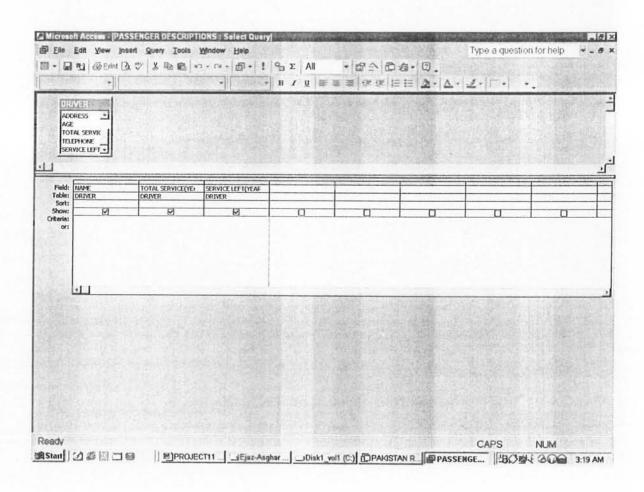


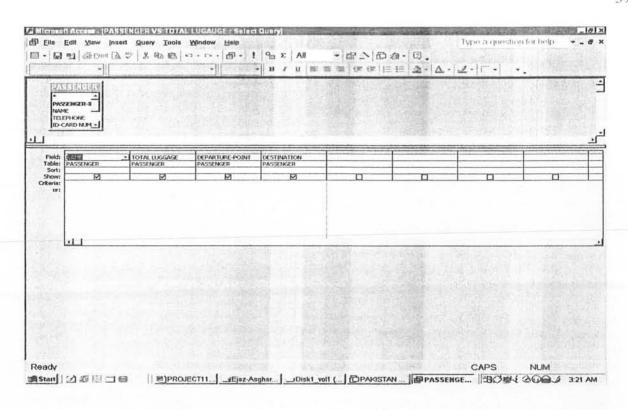


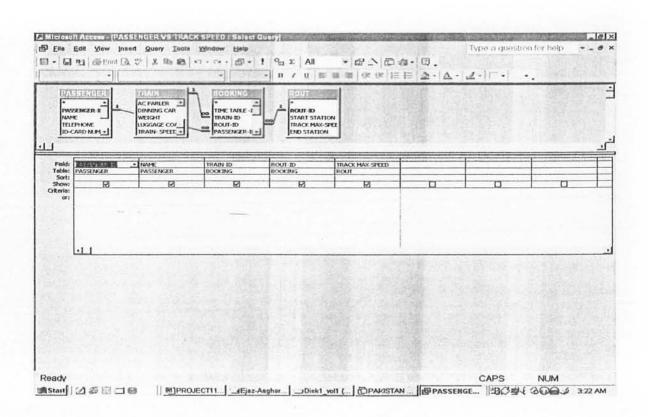


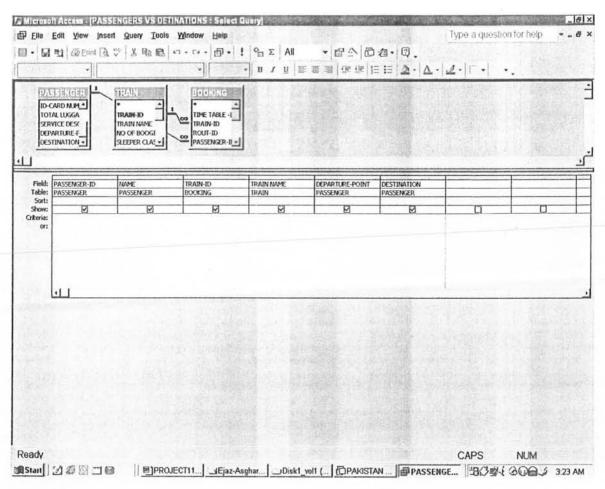


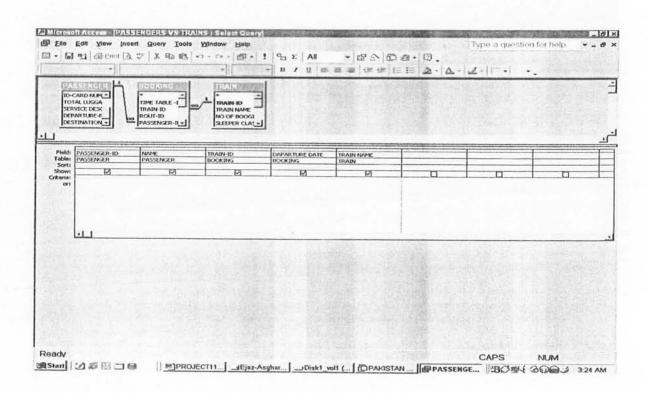


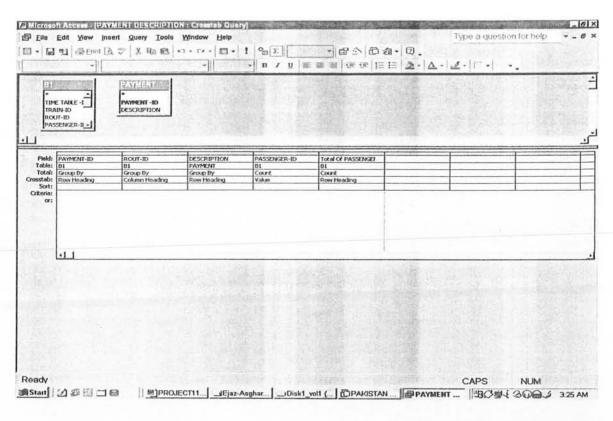


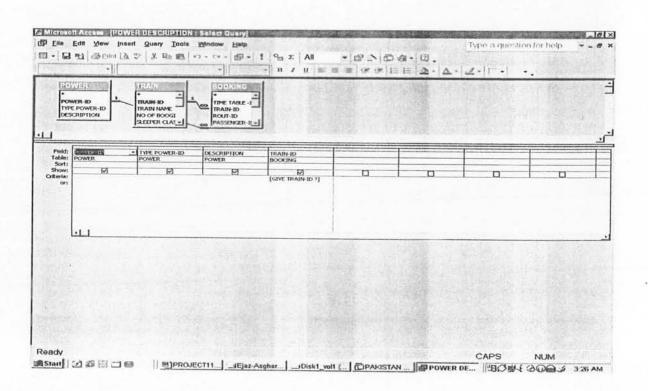


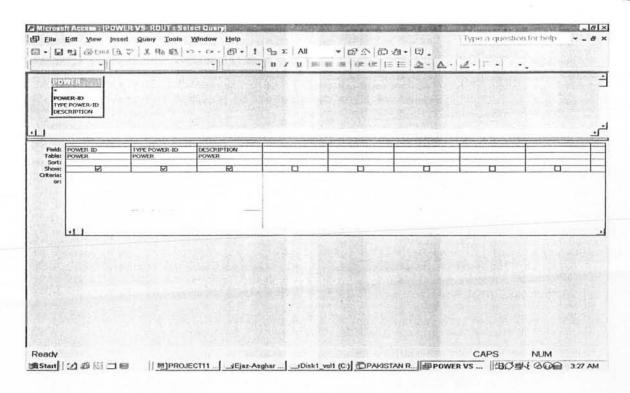


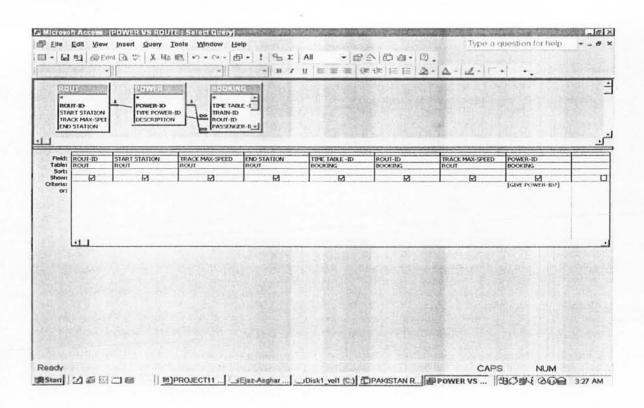


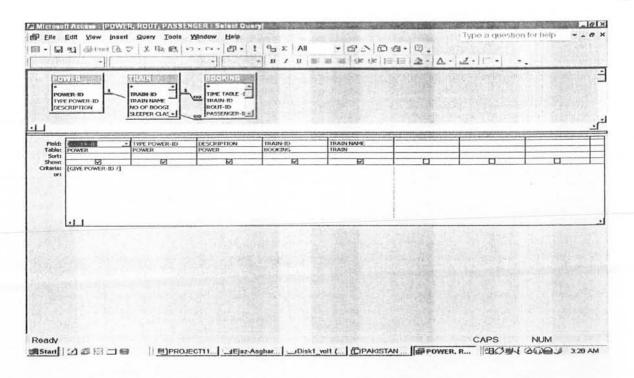


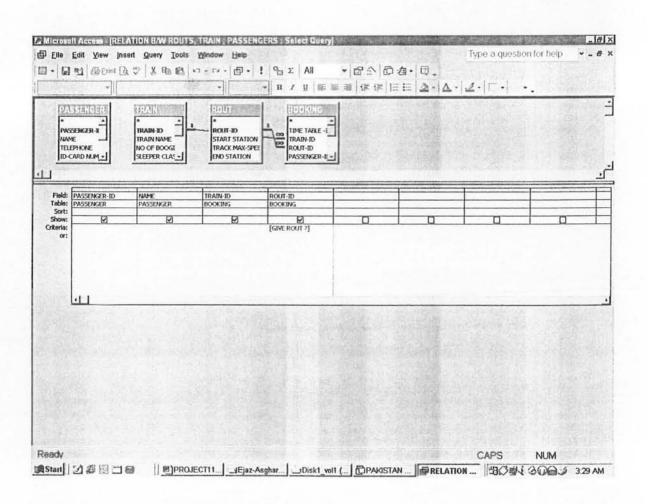


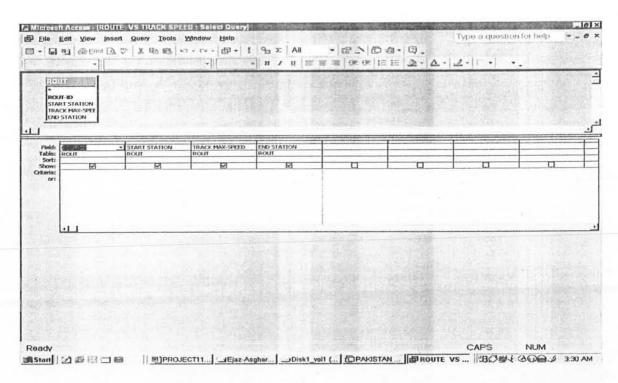


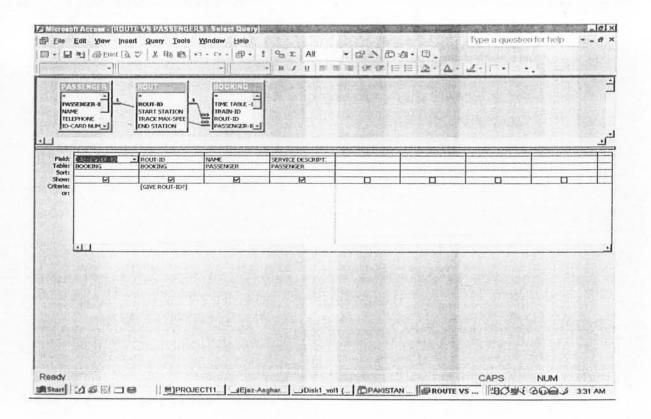


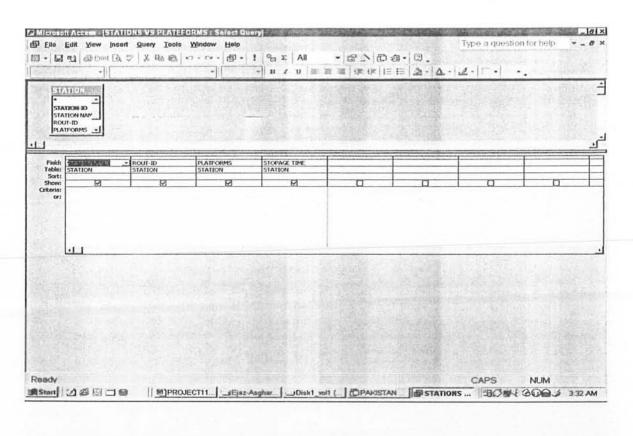


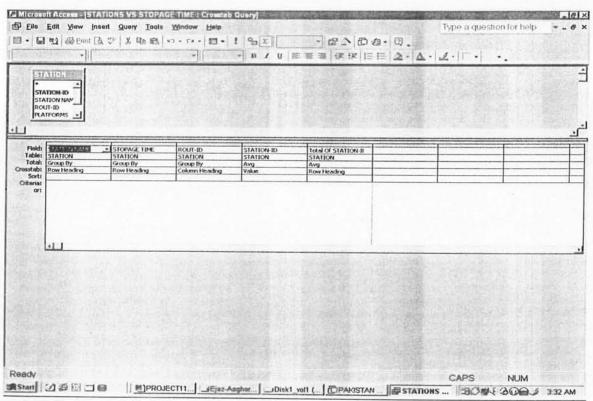


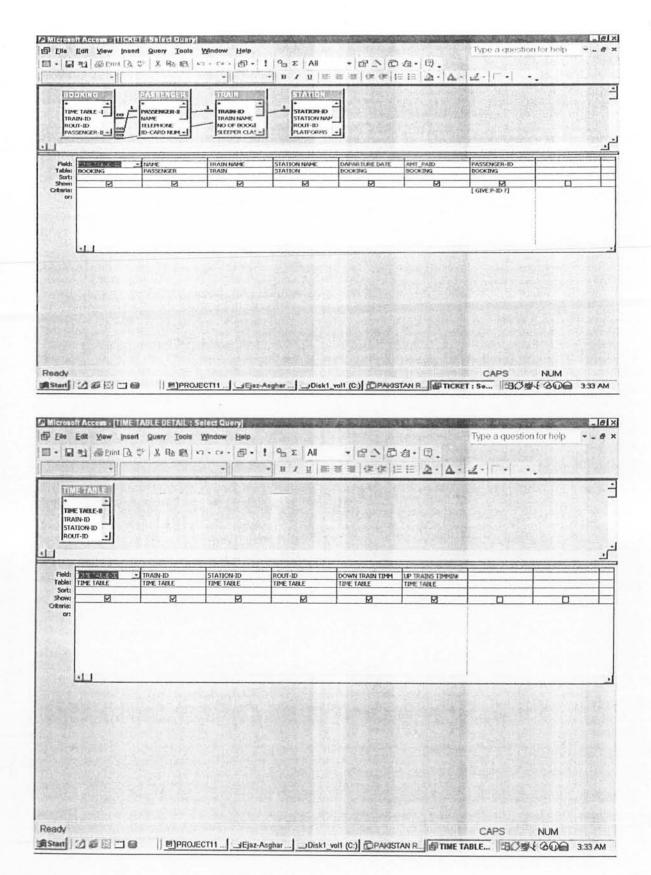


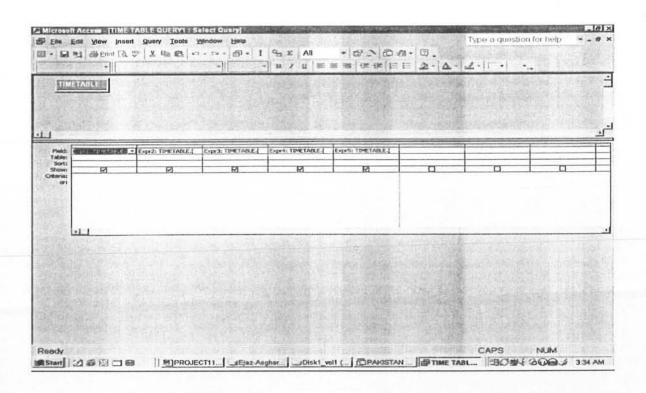


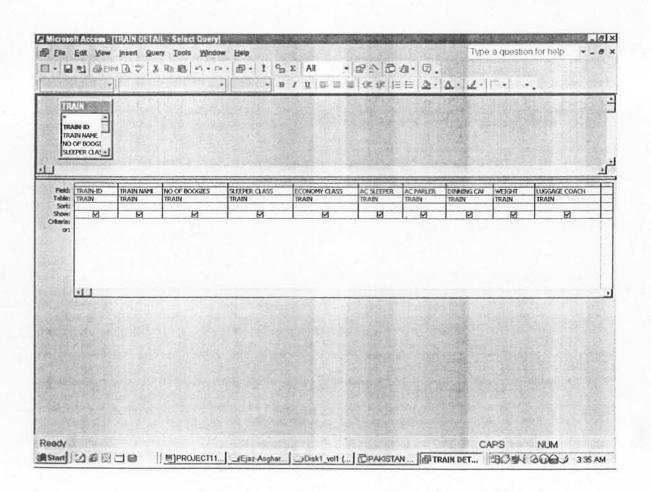


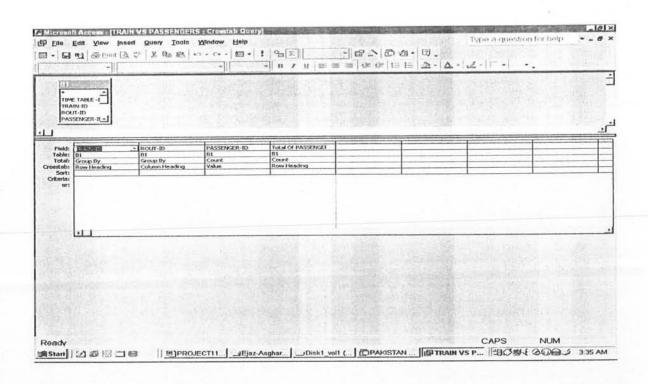


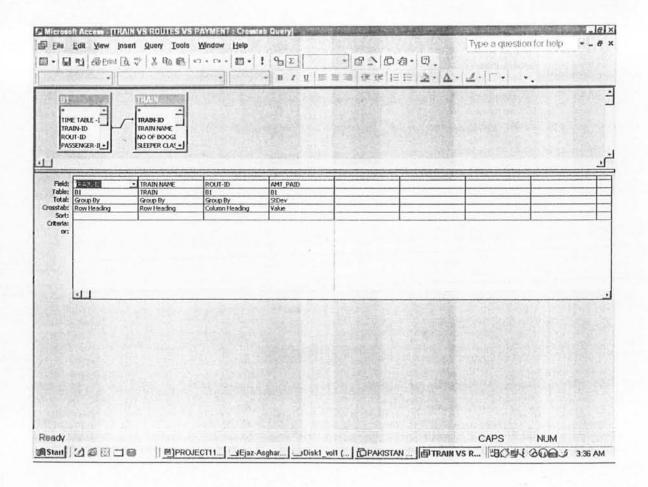


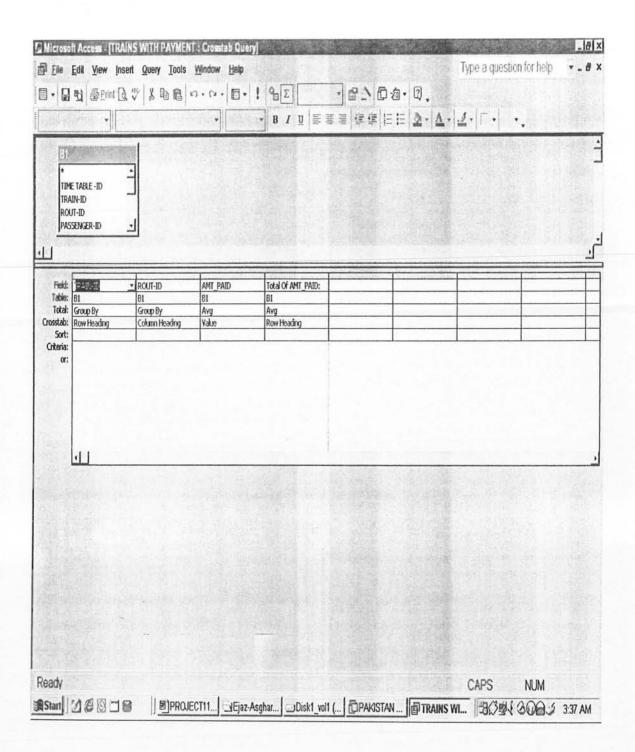




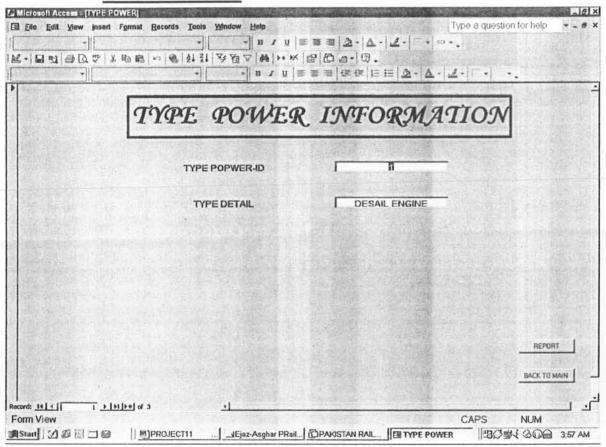




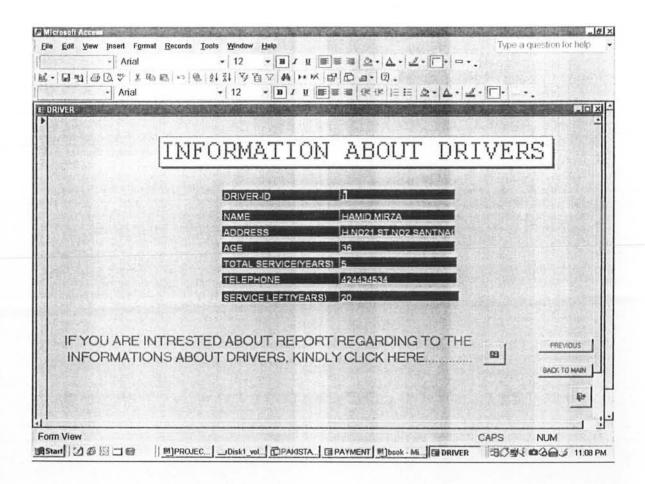


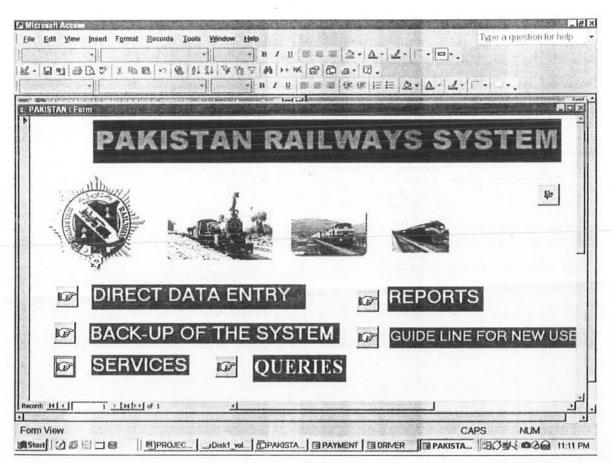


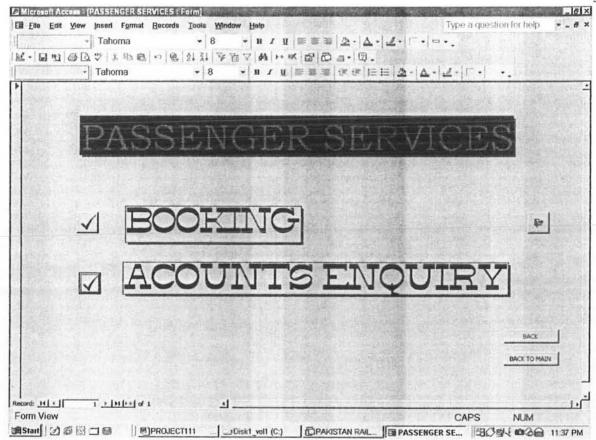
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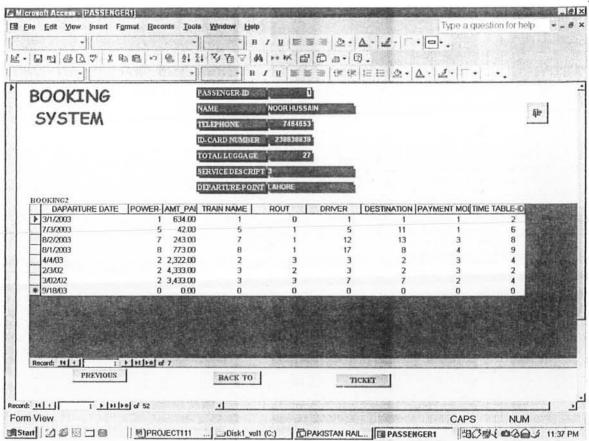


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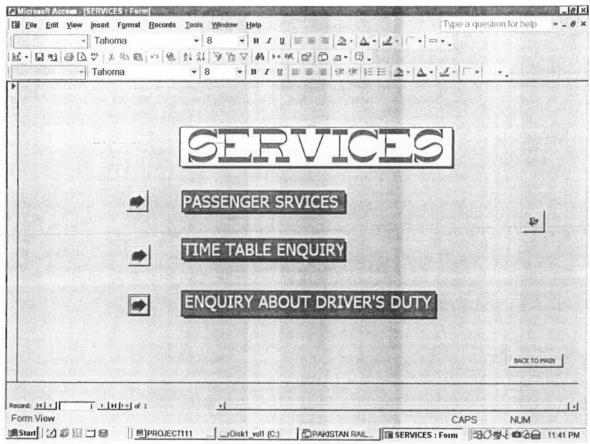




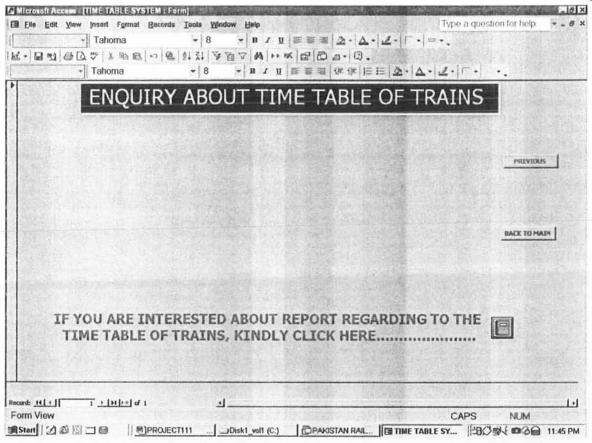


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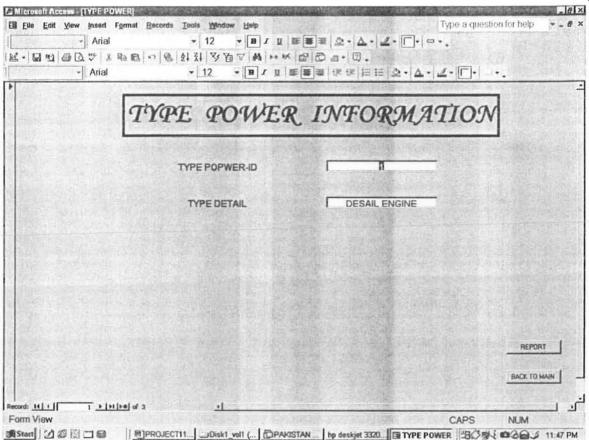
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	ROUT	-ID			fp.
	START ST	ATION		LAHORE	
	TRACK MAX	-SPEED		65	
	END STA	TION		OUETTA	
IF Y	OU ARE INTRESTED ABO			<b>E INFORMATION</b>	
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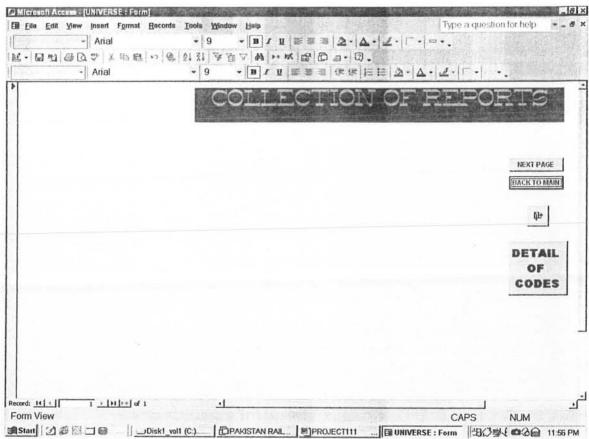


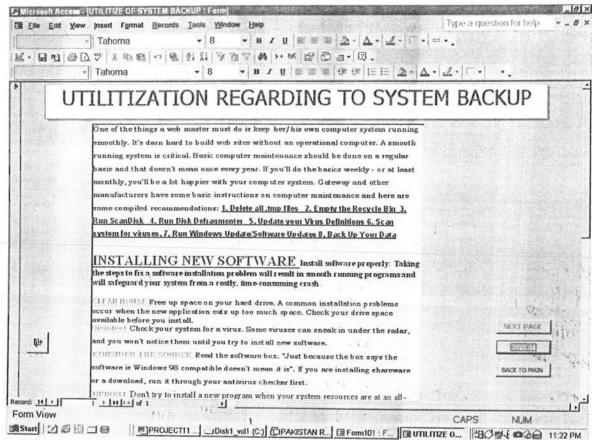
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INFORG	MATION	ABO'	DT STA	TIONS	
1311010				110313	
	STATION-ID		1		
	TATIONINAME	al area	LAHORE		
	TATION NAME		LAHORE		
	ROUT-ID		0		
	PLATFORMS		12		
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	TRAIN I	NFORM	ATION	
	TRAIN-ID	T I		
	TRAIN NAME	KHAYBE	R MAIL.	p-
	NO OF BOOGIES	8		
	SLEEPER CLASS	3		
	ECONOMY CLASS	2		
	AC SLEEPER	1		
	AC PARLER	0	The second second	
	DINNING CAR	1		
	WEIGHT	800		
	LUGGAGE COACH	Γ <u>1</u>		BACK
	TRAIN-SPEED	80		BACK TO MAIN
		W DELATED TO TOA	INS, KINDLY CLICK HERE .	Control of the Art

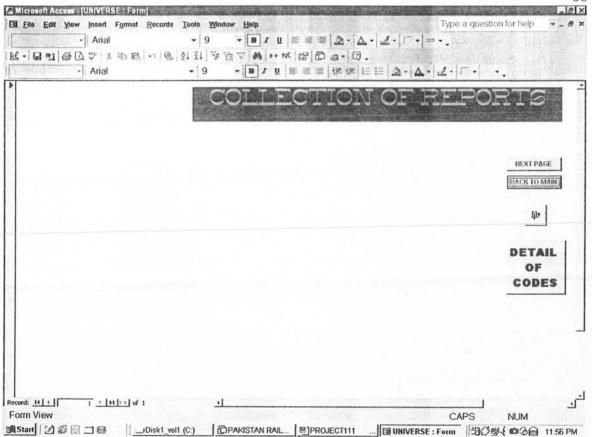


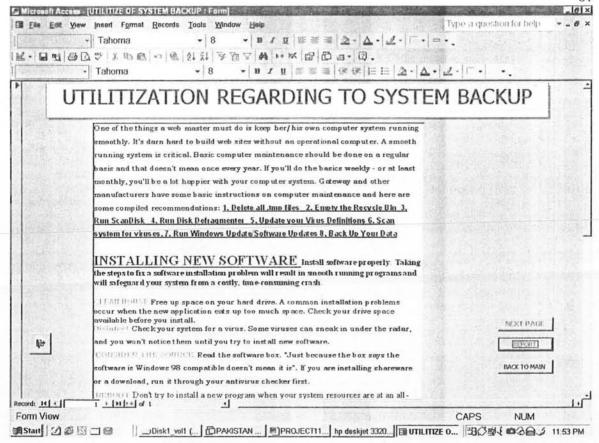




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## **BOOKING**

TIME TABLE -ID NAME STATION NAM TRAIN NAM DAPARTUR \_PAID IGER-ID

3

HASHIM KHAN BADAMI BAGH

**BOLAN MAIL** 

4/2/2003

856.00

2

Summary for 'TRAIN NAME' = BOLAN MAIL (1 detail

Sum

856.00

Summary for 'STATION NAME' = BADAMI BAGH (1 detail record)

Sum

856.00

Summary for 'NAME' = BOOKING (1 detail record)

Sum

856.00

Summary for 'TIME TABLE -ID' = 3 (1 detail record)

Sum

856.00

12

HASHIM KHAN

LAHORE

QUETTA EXPR

883.00

2

Summary for 'TRAIN NAME' = QUETTA EXPRESS (1

11/3/2003

Sum

883.00

Summary for 'STATION NAME' = LAHORE (1 detail record)

Sum

883.00

Summary for 'NAME' = BOOKING (1 detail record)

Sum

883.00

Summary for 'TIME TABLE -ID' = 12 (1 detail record)

Sum

883.00

13

HASHIM KHAN

SIBI

SHALIMAR EX

12/2/2003

832.00

2

Summary for 'TRAIN NAME' = SHALIMAR EXPRESS

Sum

832.00

TIME TABLE -ID	NAME	STATION NAM	TRAIN NAM	DAPARTUR	_PAID IGER-ID
		Summary for 'STAT	ION NAME' = SIE	I (1 detail record)	
		Sum			832.00
	Summary for	'NAME' = BOOKING (1 det	ail record)		
	Sum				832.00
Summary for 'TIME TAE	LE -ID' = 13 (1 d	etail record)			
Sum					832.00

14

HASHIM KHAN				
GUJRANWAL	A		SALIS CONTRACTOR OF THE SALIS	
	BALUCHISTA			
		13/3/2003	394.00	2
	Summary for 'TF	RAIN NAME' = E	BALUCHISTAN-e	хр (1
	Sum		394.00	
Summary for 'ST/	ATION NAME' = GU	JRANWALA (1 d	detail record)	
Sum			394.00	
Summary for 'NAME' = BOOKING (1 d	letail record)			
Sum			394.00	
Summary for 'TIME TABLE -ID' = 14 (1 detail record)				
Sum			394.00	
Grand Total			,965.00	

## BOOKING\_Crosstab

TRAIN-ID	Total Of AM	IT_PAID	0	1	2	3	
	1	-					
		1122	1122				
Summary for 'TRAIN-I	ID' = 1 (1 detail record)						
Sum		1122	1122				
	2						
		3732	1410			2322	
Summary for 'TRAIN-I	ID' = 2 (1 detail record)						
Sum		3732	1410			2322	
	3						
		8340	574		4333	3433	
Summary for "TR AIN-I	ID' = 3 (1 detail record)						
Sum	is 5 (1 detail record)	8340	574		4333	3433	
	4						
		1209	777	432			
6		1209	,,,	432			
Summary for TRAIN-I	D' = 4 (1 detail record)	1209	777	432			
Sum	5	1207	711	432			
	5	202		2.2			
		363		363			
	D' = 5 (1 detail record)	262		2/2			
Sum		363		363			
	6						
		1018		1018			
	D' = 6 (1 detail record)						
Sum		1018		1018			
	7						
		506		243	263		
Summary for 'TRAIN-I	D' = 7 (1 detail record)						
Sum		506		243	263		
	8						
		1120		1120			
Summary for 'TRAIN-I	D' = 8 (1 detail record)						
Sum		1120		1120			
	9						
		99			54	45	
		-				1.5	

TRAIN-ID	Total Of AMT	Γ_PAID	0	1	2	3	4
Summary for 'TRAIN-ID'	= 9 (1 detail record)	1994-101			54-144		
Sum		99			54	45	
	10						
		352			352		
C C. PED ADA IN	1071 1 2 3 5				0.00		
Summary for 'TRAIN-ID' Sum	= 10 (1 detail record)	352			352		
Sum	1910	332			334		
	11						
		883			883		
Summary for 'TRAIN-ID'	= 11 (1 detail record)						
Sum		883			883		
	12						
		022			0.20		
		832			832		
Summary for 'TRAIN-ID'	= 12 (1 detail record)						
Sum		832			832		
	13						
		394				394	
Summary for 'TRAIN-ID'	= 12 (1 data(1 asserd)						
Sum	- 13 (1 detail record)	394				394	
		354				324	
	14						
		663				663	
Summary for 'TRAIN-ID'	= 14 (1 detail record)						
Sum		663				663	
	15						
		262				200	
		263				263	
Summary for 'TRAIN-ID'	= 15 (1 detail record)						
Sum		263				263	
	16						
		263				263	
Summary for 'TRAIN-ID'	= 16 (1 detail record)						
Sum	- 10 (1 detail record)	263				263	
	17	200				203	
	17						
		123					123
Summary for 'TRAIN-ID'	= 17 (1 detail record)						
Sum		123					123
	18						
	JANES.	354					261
	and the state of t	554					354
Summary for 'TRAIN-ID'	= 18 (1 detail record)						22000
Sum		354					354
	19						

TRAIN-ID	Total Of AMT_PAID	0	1	2	3	4
	623					623
Summary for 'TRAIN-ID	y = 19 (1 detail record)					
Sum	623					623
	20					
	273					273
Summary for 'TRAIN-ID	y = 20 (1 detail record)					
Sum	273					273
Grand Total	22532	3883	3176	6717	7383	1373

## **DRIVER Query**

NAME	TOTAL SERVICE(YEARS)	SERVICE LEFT(YEARS)
AKHTAR ALI NIAZI		
	12	
		13
ASGHAR SAEED CH		
	6	
		19
HAMID MIRZA		
TAME INTER	5	
	,	20
MTIAZ DUDANI		20
MTIAZ DURANI		
	6	1000
		19
QBAL HUSSAIN		
	9	
		16
KHALID HAMEED PASHA		
	18	
		7
KHALID MEHMOOD		
	4	
		21
MAJID ATTA		
	10	
		15
MOHAMMAD ALI SHAKOOF		10
NONAMINIAD ALI SHAROOF		
	7	
		18
MUHAMMAD ASLAM		
	13	
		12

NAME	TOTAL SERVICE(YEARS)	SERVICE LEFT(YEARS)
MUHAMMAD KAZIMI CH		
	18	
		7
SAEED AHMED		
	6	
		19
SHAHID RAZA		
	7	
		18
SHAHZAD AHMED DURANI		
	12	
	255	13
SHAKEEL AHMED		
OTTALLE ATTALL	15	
		10
SHAKIR HUSSAIN RANDAW		10
SHAKIK HOSSAIN KANDAW	17	
	17	8
SIKANDAR ALI NIAZI		ŏ
SIKANDAR ALI NIAZI	21	
	21	
		4
TASADUC HUSSAIN KIRMA		
	12	
		13

TRAIN-ID	Total Of PASS	ENGER-ID	0	1	2	3	4
	1						
		288			64	128	96
Summary for 'TRAIN-II	D' = 1 (1 detail record)						
Sum		288			64	128	96
	2						
		384	32	192	128		32
Summary for 'TRAIN-II	D' = 2 (1 detail record)						
Sum	2 (1 4044)	384	32	192	128		32
	3						
		512	96	128	160	128	
Common Con PTD A INCH	N = 2 /1 d=(-11 1)	312	70	120	100	120	
Summary for 'TRAIN-IE Sum	J = 3 (1 detail record)	512	96	128	160	128	
	4	512	30	120	100	120	
	4	2000	0.00				
		1280	320	96	96	384	384
Summary for 'TRAIN-IE	O' = 4 (1 detail record)	1200	700				-
Sum		1280	320	96	96	384	384
	5						
		736	96	320	192	96	32
Summary for 'TRAIN-IE	b' = 5 (1 detail record)						
Sum		736	96	320	192	96	32
	6						
		576	288	160	128		
Summary for 'TRAIN-ID	0' = 6 (1 detail record)						
Sum		576	288	160	128		
	7						
		416	224	32	128	32	
Summary for 'TRAIN-ID	y = 7 (1 detail record)						
Sum		416	224	32	128	32	
	8						
		32		32			
Summary for 'TRAIN-ID	t = 8 (1 detail record)	34		34			
Sum	o (1 detail record)	32		32			
	9	57.00					
		120					
		128			128		

il record)					
120					
128			128		
32			32		
ail record)	6.				
32			32		
4384	1056	960	1056	768	544
	ail record)	ail record)	ail record) 32	ail record) 32 32	ail record) 32 32

### PASSENGER5

PASSENGER-ID	NAME	TRAIN-ID	ROUT-ID	MAX-	SPEED
	1				
	NOOR HUSSAIN				超級是
AREA ASSESSMENT CONTROL OF THE PARTY OF THE		AND CONTRACTOR OF THE PARTY OF	1		
				0	
					65
			2		
				3	
					72
			3		
				2	
					60
				3	
					72
			5		
				1	
					53
			7		
				1	
					53
			8		
				1	
					53
	2				
	HASHIM KHAN				
			2		SEPSEMBLE
				0	
					65
			11		
				2	
					60

PASSENGER-ID	NAME	TRAIN-ID	ROUT-ID	MAX-SPEED
			12	
				2
				60
			13	
			13	2
				3
				72
	3			
	ASGHAR SAEED			
			1	
			1	
				0
				65
			3	
				0
				65
			16	
			10	
				3
				72
			17	
				4
				70
			18	
			10	1
				4
				70
	4			
	KHALID SALEEM	<b>阿拉斯斯特别的</b>	和技术的"全社"等的	
楼 "连续"。				
			4	
				0
				65
			19	
				4
				70
			20	
			20	

TRAIN-ID	)f	AMT_PAID	0	1	2	3	4
	1						
	9	478.555555556			857.5	555.75	123
	2						
	13	668.1666666667	554	610.1666666667	736.75		856
	3						
		503.1875	554	554.5	529	381.5	
	4						
		344.225	195.2	490.3333333333	795.3333333333	288.3333333333	375
	5						
	3	283.9565217391	0	. 420.4	189.3333333333	189.3333333333	623
	6						
		222.888888889	44	432	364		
	7						
		288.2307692308	0	243	710.25	663	
	8						
		773		773			
	9						
	5%	54			54		
	10	097427					
		352			352		
		332			352		

DESCRIPTION	otal Of PASSENGER-ID	0	1	2	3	4
40% DISCOUNT FO	OR					
	896		416	192	160	128
	1024	128	224	224	320	128
	896	128	160	320	160	128
	896	128	160	320	128	160
	672	672				
45% CONCESSION(	(FO					
	896	128	160	320	128	160
	672	672				
	896		416	192	160	128
	1024	128	224	224	320	128
	896	128	160	320	160	128
FULL-PAYMENT						
	672	672				
	1024	128	224	224	320	128
	896	128	160	320	128	160
	896	128	160	320	160	128
	896		416	192	160	128
HALF PAYMENT (I	DE					
	1024	128	224	224	320	128
	896	128	160	320	160	128
	672	672				
	896		416	192	160	128
	896	128	160	320	128	160
HALF PAYMENT FO	OR					
	896		416	192	160	128
	896	128	160	320	128	160
	1024	128	224	224	320	128
	896	128	160	320	160	128
	672	672	2.20		30,076.TO	

START STATION ROUT-ID TRACK MAX-SPEED END STATION **LAHORE** 0 65 QUETTA 1 53 **PESHAWAR** 2 60 KARACHI 3 72 FAISALABAD 4 70

SIALKOT

## 11Q

ROUT-ID START STATION	TRACK MAX-SPEED	END STATION
1 LAHORE	53	PESHAWAR
2 LAHORE	60	KARACHI
3 LAHORE	72	FAISALABAD
0 LAHORE	65	QUETTA
4 LAHORE	70	SIALKOT

## 13Q

ROUT-ID	STATION NAME	<b>PLATFORMS</b>	STOPAGE TIME
	0		
	QUETTA	3	0
	SIBI	4	30
	JACOBABAD	2	15
	ROHRI	2	2
	SUKKER	4	3
	MULTAN	5	10
	KHANEWAL.	4	5
	SAHIWAL	3	5
	OKARA	2	2
	LAHORE	12	10
	1,		
	GUJRAT	2	5
	GUJRANWALA	2	2
	BADAMI BAGH	2	j i
	PESHAWAR	4	0
	ATTAK	. 2	2
	JEHLUM	3	5
	WAZIRABAD	3	5
	LAHORE	12	30
	LALA MUSA	2	2
	RAWALPINDI	5	15
	2.		
	KARACHI	5	0
	OKARA	2	2
	SHIKARPUŔ	2	2
	SUKKER	3	2
	ROHRI	2	2
	LARKANA	2	2
	KARACHI CANT	2	2

ROUT-ID	STATION NAME	PLATFORMS	STOPAGE TIME	
	LAHORE	12	0	
	LAHORE CANT	2	1	
	HAYDERABAD	3	5	
	3			
	SHAHDRA BAGH	2	2	
	BADAMI BAGH	2	2	
	GUJRANWALA	2	2	
	TOBA TEK SING	4	5	
	GOJRA	2	2	
	FAISALABAD	5	0	
	LAHORE	12	0	
	4			
	LAHORE	12	0	
	AIMANABAD	2	2	
	SIALKOT	4		

## 14Q

STATION NAME	STOPAGE TIME	Total Of STATIO	N-ID
AIMANABAD		-	
		2	
			39
ATTAK			
		2	
			19
BADAMI BAGH			
		Ĭ	
			12
		2	
			32
AISALABAD			
MONENDAD		0	
			37
GOJRA			
SOSICA		2	
		-	36
SILIDANIWAL A			30
GUJRANWALA		2	
		2	22.5
			23.5
GUJRAT			
		5	
			16
IAYDERABAD			
		5	
			28
ACOBABAD			
		15	
			8
EHLUM			

### TRAIN Query

AIN-ID	TRAIN NA	300GIES	R CLASS	IY CLASS	EEPER	ARLER	DINNING C	EIGHT	LUGGAGE
1	KHAYBER M	8	3	2	. 1	0	1	800	1
2	BOLAN MAI	7	2	2	1	0	1	700	1
3	TEZ RO	7	2	1	1	1	1	700	1
4	TEZ GAM	7	3	1	1	0	1	700	1
5	CHINAB EXP	8	3	2	1	0	1	800	1
6	AWAM EXPR	7	2	2	1	0	1	700	1
7	KARACHI EX	8	2	2	1	1	1	800	1
8	KUSHALKH	9	3	2	1	1	1	900	Í
9	CHILTAN EX	8	2	2	. 2	0	1	800	1
10	BAHAUDDIN	7	2	2	1	0	1	700	1
11	QUETTA EXP	8	3	2	1	0	1	800	1
12	SHALIMAR E	7	2	2	1	0	1	700	1
13	BALUCHIST	7	2	2	1	0	I	700	1
14	SUPER EXPR	7	2	2	1	0	1	0	1
15	RAIL CAR	9	3	2	. 1	1	1	900	1
16	BOLAN EXP	8	3	2	1	0	1	800	1
17	PESHAWAR	7	2	2	1	0	1	700	1
18	LAHORE EX	8	2	2	2	0	1	800	1
19	KARACHI EX	7	2	2	1	0	1	700	1
20	MULTAN EX	7	2	2	1	0	1	700	1

TRAIN NAME	tAIN-ID	0	1	2	3	4
AWAM EXPRESS						
	6	49.279123934473	121.97618078644	0		
BAHAUDDIN ZIK						
	10			0		
BOLAN MAIL						
	2	0	261.96225565087	223.28273803042		0
CHILTAN EXPRE						
	9			0		
CHINAB EXPRES						
		0	184.05352908162	104.45276661608	104.72728158781	0
KARACHI EXPRE						
	7	0	0	271.63233604314	0	
KHAYBER MAIL						
	1			25.701584164628	170.0991836649	0
KUSHALKHANK						
	8		0			
TEZ GAM						
	4	239.44462386883	203.76801394913	26.063350621400	231.40622072543	156.0333364662
TEZ RO						
	3	0	79.812378413574	184.10169462084	76.287066632773	

### CHAPTER #5

### **IMPLEMENTATION**

#### 6.1 INTRODUCTION

In this phase we discuss, how to implement the system? Also performance of the system is access and evaluated. To improve the performance, the draw backs in the system and suggestions are also given then process of assuring that the system is operational and then allowing users to take over its operation for the use and evaluations called implementation. The system analyst has several approaches to implement that should be considered as a change over to the new system in being prepared. These include shifting more computer power to the users via an information center and or distributed processing, training, users, converting from the old system and evaluating the new one.

#### 6.2 INFORMATION CENTER

The first approach to implementation concerns the movement of computer power to the individual user by setting up an information center or shifting computer power and responsibility to the groups with the help of distributed computing.

#### 6.3 TRAINING USERS

The second approach to the implementation is using different strategies for training users and information center personal including taking them on their level, using the variety of training techniques and making sure that each user understands any new role that he/she must enact because of new information system.

#### 6.4 CONVERSION STRATEGY

Another approach to implementation is choosing conversion strategy, the analyst needs to weight the situation and purpose a conversion plan that is appropriate for the particular organization and information system, and there are five conversion methods for implementation.

#### 6.5 DIRECT CONVERSION

In this method of conversion, manual system is entirely replaced by the new system. Then presently working system is abandoned and the new system because of complete operation on the real data.

#### 6.6 PARALLEL CONVERSION

This allows us to compare both the old and new system. Both system run simultaneously and the merits and demerits of both are observed. If new system gives some fault then they are tried to remove while the old system continues to work.

#### 6.7 PILOT CONVERSION

In this method of conversion the new system is partially implemented, until it can be determined that the new system works correctly.

#### 6.8 MODULAR PROTOTYPE CONVERSION

This approach to conversion uses the building of modular operational prototypes to change from old system to new in gradual manner.

#### 6.9 DISTRIBUTED CONVERSION

This refers to a situation in which many installations of the same system are contemplated as is the case in banking or franchises such as restaurants or clothing stores.

Keeping all the five methods mentioned above, in view the parallel conversion methods seems to be most suitable. This approach is selected because

- It is normally the safest and suitable conversion strategy.
- It minimizes the problems that may arise from system failure.
- It provides the opportunity to compose the result of existing system those of newly developed system.

In future improvements can be made according to the requirements.

### CONCLUSION.

At the end, we would like to say that developing system was an interesting experience for particular point of view. We learn a lot during this process. It is not just base in assumption but an actual work.

Here just we touch few aspects of this huge project so there are so many rooms are left to visit, actually we had very less time to handle all fields of

#### "PAKISTAN RAILWAYS SYSTEM".

But by this example, door is open for new comers and now it's their responsibilities to fulfill such gapes which are left.

No doubt its very interesting task, we enjoyed a lot during its completion.

We can implement this project on different stations for practical purposes.

### RECOMMENDATIONS

This system is very wide and has very limited time so we did work on few aspects of Pakistan Railways system like Booking System, About Time Table of Trains, Enquiry about Trains regarding to different routs, few Queries regarding to payment of different routs of different trains only.

But we think so many fields are left to do work like:

Detail about Consumption of fuels of Powers (engines), signaling System, Firemen duties, Guard's duties, Time table of different schedule of inspections of higher authorities regarding to tracks, speed of trains etc.

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### **REFERENCES**

• There is a great contribution of:

"CH.MOHAMMAD YAQOOB" is working as "Assistant mechanical Engineer at Pakistan Railways Head Quarter Lahore in our project with their valuable guideline.

We took help from website like:

www.pakrail.com