ACCOUNTING SYSTEM FOR PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS ISLAMABAD

By

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COMPUTER SCIENCE DEPARTMENT
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ISLAMABAD

1995-97

In the name of ALLAH, the most Merciful, the most Gracious

HOLY QURAN SAYS

Oh! Prophet (peace be upon him) say! If oceans are converted into ink to write the qualities of my creator, then the whole oceans would be 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)

HAZRAT MUHAMMAD (peace be upon him) SAID

"VERIFY THE MAN OF KNOWLEDGE
ARE THE INHERITERS OF
THE PROPHET"

COMPUTERIZED WORKING ACCOUNTS SYSTEM FOR PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

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A dissertation submitted to the Department of Computer Sciences, QAU, Islamabad as a partial fulfillment of the requirement for the degree of M. Sc. in Computer Sciences

COMPUTER SCIENCE DEPARTMENT
QUAID-I-AZAM UNIVERSITY
ISLAMABAD.

March, 98

DEDICATION

MY RESPECTED FATHER

&

MY LOVING MOTHER (LATE)

&

MY FRIEND

HUMAYUN NASEEM KHAN (LATE)

&

WHO LOVE ME.

DEPARTMENT OF COMPUTER SCIENCE
QUAID-I-AZAM UNIVERSITY
ISLAMABAD

Dated: May , 1998

FINAL APPROVAL

This is to certify that we have read the project report submitted by Mr. Abdul Majid Sajjad and it is our judgment that this report is of sufficient standard to warrant its acceptance by the Quaid-i-Azam University, Islamabad for the degree of Master of Science in Computer Science.

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ABSTRACT

The system is developed for maintenance of ACCOUNTS SYSTEM of the Pakistan Institute of Development Economics Islamabad. It provides the facility to prepare the documents required by PIDE'S accounts department. The information is retrieved from the database in the form of queries and reports. The information is stored in the database and is manipulated with the help of various form layouts designed for the system. This system has been developed for Pentium computers in Oracle/Developer 2000.

ACKNOWLEDGEMENT

There is all praise to ALLAH, which is unique, The Beneficent, and The Merciful. I am really thankful to ALLAH who gives me knowledge and wisdom. I am thankful to my last Prophet HAZRAT MUHAMMAD (peace be upon him) because in reality HAZRAT MUHAMMAD (peace be upon him) take me to right way by giving the unbreakable principles. These are the principles, which helps me to determine the right way. Really he is very complete man. I am greatly obliged to "GOD" by whole grace I have been able to do in doing this task.

Further more a very special thanks to my loving parents, my uncle SHAMUS-US-DIN and my family members who always encouraged me, whenever I was demoralized my problems with great patience, love and ignorance. It is very true to say that my academic success and progress is due to these people whose endless prayers are a source of determination for me.

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ABDUL MAJID SAJJAD
March 30, 1998

PREFACE

This report is a description of the Design, Development and Implementation of a computerized ACCOUNTS SYSTEM for Pakistan Institute of Development Economics (PIDE).

Chapter 1:	The introduction of the project and organization.
Chapter 2:	It describes the working of the existing system and its drawbacks.
Chapter 3:	It discusses the proposed system
Chapter 4:	It deals with the system design.
Chapter 5:	The development details of the system are discussed.
Chapter 6:	It describes various method of system testing and how to evaluate the system
Chapter 7:	The user guide is presented and describes the operation of the system.
Appendices:	Sample reports and screens are given.
Bibliography:	It consists the series of books reference during the project

PROJECT BRIEF

PROJECT TILTE	:	ACCOUNTING SYSTEM
ORGANIZATION	:	PIDE, ISLAMABAD
UNDERTAKEN BY	:	ABDUL MAJID SAJJAD
SUPERVISED BY	:	Mrs. SUMMIYAHAROON LECTURER IN DEPARTMENT OF COMPUTER SCIENCES, Q.A.U ISLAMABAD
STARTING DATE	:	NOVMBER 97
ENDING DATE	:	MARCH 98
SOFTWARE USED	:	ORACLE (DEVELOPER/2000)
OPERATING SYSTEM	:	WINDOWS 97
SYSTEM USED	:	PENTIUM 133MHz

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CHAPTER 1

ABOUT THE ORGANIZATION

Good, better, best

Don't let it rest

Until your good is better

And better is the best

1.1 INTRODUCTION TO THE ORGANIZATION

PIDE is an abbreviation of Pakistan Institute Of Development Economics. It produces high-quality research in the field of Economics, Anthropology and Demography in general and with reference to Pakistan, in particular by adopting quantitative techniques for theoretical reasoning.

Pakistan Institute of Development Economics has functioned since 1957 as an autonomous institution dedicated to the acquisition and propagation of knowledge in Development Economics with a special focus on Pakistan. Although the emphasis have changed from time to time, yet the underlying commitment has been to produce high-quality research drawing on mainstream thinking on the subject. PIDE has served several clients in the government, private sector organizations, and the academic community in Pakistan and abroad.

1.2 LOCATION

It was founded at Karachi in 1957. In 1972, the Karachi office was shifted to Islamabad At present, PIDE has its own office at the Quaid-I-Azam University campus.

1.3 ORGANIZATIONAL SETUP

There are five different divisions in PIDE and about two hundred employees work in these different divisions. These divisions are further divided in to subdivisions, The head of PIDE is the director and organizational chart is given at the end.

1.3.1 ADMINISTRATION DIVISION

It is responsible for the administrative of the institute and helps the research staff in various aspects. There are also some computers in this division.

1.3.2 LIBRARY AND DOCUMENTATION DIVISION.

The library division provided books and research literature, so that Research activities can be carried out. The library and Documentation Division serves the Institute's library needs and boasts a large specialized library as well as a documentation

1.3.3 COMPUTER DIVISION

A Computer division has been established due to increasing applications in research field. The Computer division has an IBM-4361 mainframe, two Pentium with processor 133 MHz, one mini RISC machine and there are five 486-DX4 computers. There are about 60 computers in PIDE, which are in different divisions including 386and 286 as well. The responsibility of that division is to provide computer assistance to the research staff in estimating and simulating computer econometrics, data handling and processing of large surveys. The responsibility of that division is also to computerize the organization.

1.3.4 RESEARCH DIVISION

It is the most important division of PIDE as it produces the quality research in the field of Economics, Anthropology and Demography, There are about fifteen doctors which are work in these division. There are eighteen Pentium computers in this division out of twenty.

1.3.5 PUBLICATION DIVISION

It is responsible for the publication of books; research reports and journals .It also publishes advertising material, monographs and booklets. The Division brings out The Development Review quarterly, PIDE Tidings three times a year, and books, monographs and research reports from time to time.

CHAPTER 2

THE EXISTING SYSTEM

Love for All, Hatred for None

Computerization is the process of replacing an existing manual process of clerical or managerial work by computers. Pakistan institute of Development Economics (PIDE) is a research-oriented organization keen in the computerization of its various departments.

2.1 PROJECT DESCRIPTION

The scope of the problem is to computerize the accounting system of Pakistan Institute of Development Economics. The system is provide on-line help and will be capable of being generating necessary reports and queries.

2.2 THE EXISTING SYSTEM

The existing Accounting system is partially computerized on main frame (IBM-4361) but it does not fulfill the requirement of organization. The computer division is keen to develop an integrated office automation system on PC's, that will meet its requirements.

2.3 THE WORKING OF EXISTING SYSTEM

As mentioned above that the existing system is partially developed on main frame (IBM-4361). It does not fulfill the requirements of organization due to following reasons

- It is not user-friendly.
- No on line queries are available.

- There are large overheads of the existing accounting system due to electricity and maintenance checks in the running main frame, The maintenance expenditures are about Rs one lake fifty thousands per month.
- It is developed in COBOL with screen designed using CICS.

Due to these reasons, the organization does not use that system. At present the accounting process is being maintained manually.

The PIDE Account Department is maintains two types of accounts.

- *PLA ACCOUNT (Personal Ledger Accounts).*
- *NBP ACCOUNT (National Bank of Pakistan).*

Account Payable comprises all transaction concerning payments to Employees/Parties. This is in form of cash or cheque. This is known as debit.

In both the accounts there are two types of transactions

- *Accounts Payable.*
- *Accounts Receivable.*

Accounts payable comprises all transactions which are related to Employs / Parties. These are in the form of cash or cheque. This is known as Debit. On the other hand, Account Receivable is termed as Credit and it is concerned with the receipt of payments from Employees /Parties.

2.4 VOUCHERS

Transaction in both NBP and PLA accounts are carried out through vouchers. The entries to the account books are made through these vouchers. The following type of vouchers are used in the transaction

1. Journal Voucher
2. Receipt Voucher
3. Payment Voucher
4. Petty Cash Voucher.

A brief discussion of these vouchers is as follows.

2.4.1 JOURNAL VOUCHER

These vouchers are prepared from supplier invoices and goods receipt notes for all type of purchases for recording in Journal Register. They are also used as payment of Salaries, TA/DA advances administrative, miscellaneous and contingent expenditure. If any error occurs while maintaining accounts, then the journal register is use for the correction.

The information fields used in journal voucher are as follows

- VOUCHER-NO
- DATE
- DEBIT AMOUNT
- CREDIT AMOUNT
- DESCRIPTION

- ACCOUNT HEAD

There are signatures of the account officer and secretary on the journal voucher.

2.4.2 RECEIPT VOUCHER

The Receipt Vouchers are issued to those persons who deposit money to PIDE i.e. credit amount. For example, the cashier issues a Receipt Voucher to the bus conductor who deposits money in PIDE collected as bus fares conductor. There are following fields in this voucher.

- VOUCHER –NO or RECEIPT-NO
- DATE
- NAME OF ACCOUNT HEAD
- NAME OF EMPLOYEE/PARTY.
- AMOUNT RECEIVED i.e. CREDIT AMOUNT
- DETAILS
- BANK NAME
- CHEQUE NUMBER.

This Voucher is also called Credit Voucher because an amount is being received by PIDE. The Voucher-no contains the sequence –no of vouchers. Voucher number start from "1" at the beginning of one account year and can grow up to any extent. The date field is used in each transaction. The name of the employee or party records the information about employee/parties. Amount received shows how many PIDE received. Any detail of transaction occurring is recorded in this field. If the money is deposit through the Bank, then the name of Bank and Cheque number are also recorded.

2.4.3 PAYMENT VOUCHER

Payments of salaries are made through Payment Voucher. Therefore the amount is always treated as Debit in this voucher. These vouchers are issued when payment is made to an employee or party. The fields in this voucher are

- VOUCHER –NO.
- DATE.
- CHEQUE-NO.
- BANK-NAME.
- PAYMENT AMOUNT.
- ACCOUNT HEAD.
- EMPLOY OR PARTY NAME.

So most of the Debit Voucher is same to the Credit voucher.

2.4.4 PETTY CASH VOUCHER

A Petty Cash Voucher is used for minor expenses like photocopy, stationary, tea etc. It is similar to cash vouchers i.e. Payment Voucher and Receipt Voucher. It has similar fields. The difference is that Petty Cash Voucher belongs to petty cash book, which records the daily transactions, occurring within PIDE, While cashbook is the key book of the accounting system. The following entries are used in this voucher

- *VOUCHER-NO*
- *DATE.*
- *EMPLOY OR PARTY NAME*
- *DEBIT AMOUNT [PAYMENT]*
- *CREDIT AMOUNT [RECEIVABLE]*
- *DESCRIPTION*

2.5 ACCOUNTS BOOKS

The objectives of maintaining the Account Books are following

- To maintain the information of debit and credit amount against each account head.
- The financial position of organization can be obtained after the Financial Period
- To maintain information about money coming into PIDE and money is paid in every month?

The following accounts books are maintained by PIDE, These books are

1. JOURNAL BOOK.
2. PETTY CASH BOOK.
3. CASH BOOK.

The description of each is given below

2.5.1 JOURNAL BOOK

As mentioned earlier, when any error occurs in accounting, journal voucher is consulted. Therefore Journal Book is used for all type of adjustments in the Accounting process. The entries for the journal book come from the Journal voucher. This book contains records of all those Vouchers, which were issued for transaction PIDE used for journal voucher such as TA/DA advances, Administration, Miscellaneous expenses and Payment of salaries. It keeps the records of journal vouchers issued for Supplier invoices, Goods Receipt notes for all types of purchases.

2.5.2 PETTY CASH BOOK

The Petty Cash Book is used for maintaining information about minor expenses of daily nature incurred during the daily running of the organization These include Postage, Allowances, Telegram, Conveyance, Entertainment, Medical aid, Car expenses, Stationary, Toiling and sanitary etc. These transactions are not

CashBook. The Accounts Department transfers some money from the CashBook to the Petty Cash Book. This is amount is treated as Debit in CashBook but it is Credit Amount in Petty Cash Book. These entries are made through Petty Cash Vouchers.

2.5.3 CASH BOOK.

This book is the key book of any accounting department because the entire Debit and Credit mount against every Account Head is recorded in this book date wise. An amount for daily use is shifted

To petty CashBook as a debit from a dash book. The entries to this book are made from two types of voucher i.e.

1. *RECEIPT VOUCHER(CREDIT VOUCHER)*
2. *PAYMENT VOUCHER (DEBIT VOUCHER)*

The information in CashBook are day, month, Voucher-No, Ledger Folio, Amount in the form of cash or cheque and Detail of receipts or payments.

2.6 THE LEDGER

This is the main book of the Accounts Department. The accounts department maintains ledger of respective accounts heads in a fully classified form. All the transactions recorded in the CashBook, petty cash book and journal books are posted monthly into the appropriate account heads in the ledger. The debit amount is entered in the debit column of the ledger while credit amount is placed in credit column of the ledger. There are following fields, which are entered in Ledger for each transaction.

- DATE AND MONTH
- PARTICULARS
- FOLIO (it is reference point, from where the particular transaction is picked-out).
- DEBIT

- CREDIT
- dB / cr. (Which type of transaction)
- BALANCE.

The account head name contains the account head from which the amount is debited/ credited. The date and month of transaction are recorded in date field. Particulars contain the brief description of transaction. The debit credit, and balance column shows the amount. Db / Cr. is used for transaction type i.e. what type of transaction either debit of credit.

2.6.1 PURPOSE OF MAINTIANING LEDGER.

- To retrieve details about every account-no from a single source.
- To retrieve the balance of any program irrespective of its type
- To retrieve the balance of any particulate account head.
- To produce final reports needed by the department.
- To do final balancing at the end of the year.

2.7 CODES.

The accounts department is using codes for different kinds of entries in The account books. These codes are fixed and used to save memory storage. The use of codes makes the system more efficient and two codes, which are very important, are.

1. ACCOUNT HEAD CODES.

2. PARTIES CODES.

Their brief description is as follows

2.7.1 ACCOUNT HEAD CODES.

The account head codes show the codes of different heads, which are situated in PIDE. For example salary head, transport head etc. Each head is assigned a code. Each

head is further divided in to subheads, which have their own codes. A single head code consists of six digit .The first two digits are uses for MAJOR GUOUP, the second two digits are used for MINOR GROUP While the third two's are used for further classification of any. The last four digit will be zero if an account head has no subheads.

We assign following code as an example

If Transport Head is the code 10 0101,then first two digit used for transport head, the next two i.e. 01 are used for subhead i.e. Repair and maintenance, While the last two's are used for further subhead if any.

2.7.2 PARTY CODES.

Party codes show the various parties with which PIDE deals. These parties may include a single person, like doctor, chemist, house owner etc or an organization. A four-digit code is used for a party of one person. The first two digits indicate the MAJOR GROUP and the last two digits are used for MINOR GROUP of the major group.

We assign these codes as

For house owners, We take four-digit code such as

1001

1002

1003

1004 etc

The first two digits indicates the house owners, While the next two digits are used for the name of the house owner

For example, 10 indicate HOUSE OWNER, While 01,02,03 are used for the name of different employees. Similarly we used codes for other parties.

2.8 DRAWBACKS OF THE EXISTING SYSTEM

The existing Accounting System has been computerized on a main frame (IBM-4361). So much of the work is being done manually. However following limitations in this system are

1. There are no screens available because screen are developed in CICS
2. It is not user friendly in the sense that there are not many facilities provided
3. Maintenance of the current system is difficult.
4. In manually, there are many chances of errors for big calculation.
5. It is very time consuming.
6. Errors are not easy to detect
7. Reports about the details of account head are prepared at the ends of year, if details are needed during the year, it is not available.
8. Postage of different Vouchers to maintain ledger is done manually which doubles the amount of manual work and increases the chances of errors.
9. There is a redundancy, from the storage point of view in the existing system
10. The present system does not use efficient coding techniques for creditors and debtors and does not produce any detailed reports about any creditors /debtors.
11. At Present, information is stored in a manner that results in the wastage of storage as well as stationery.
12. Postage of different vouchers to general ledger is done manually which doubles the amount of manual work and dies increase the chances of errors.
13. A number of books are used for record keeping, these are large in size and no easy to handle.
14. Due to large number of vouchers, the voucher entry can not be made at correct time; no balance up-to date information about balance is available.
15. The numbers of examples are not sufficient to do the entire work and the organization is not in a position to increase manpower.

CHAPTER 3

PROPOSED SYSTEM

Hands build a house but Hearts builds a home

3.1 INTRODUCTION.

After understanding the existing Accounting System and its drawbacks a new System has been proposed which will fulfill the requirements of organization, so it is necessary to remove the problems from the existing system and give a reasonable solution for problem encountered the organization. This chapter explains the objectives of the proposed system how it differs from the existing system, what are the in puts of the system and which we use hardware and software.

3.2 OBJECTIVES OF PROPOSED SYSTEM

A PC based Accounting System has been proposed. It is a user friendly database. it will fulfill the requirements of the organization user and satisfies the user's requirements. It will provide Required documents such as various Reports efficiently, provide the information to management and would help them in decision making.

The objectives of the new system must be established before designing the system keeping in mind the drawbacks of the existing system, the objectives of proposed system are as follows

- It will be more efficient than the existing system.
- The system will have an integrated environment, so that it provides a platform where the system could be accessed.
- There is no Screen Designing in existing system but in proposed system there will be efficient screen designing.
- The present system does not have validation checks while in proposed system there will validation checks. The validation checks in the proposed system are in the form

- ITEM LEVEL
- BLOCK LEVEL
- FORM LEVEL

- Checks will be provided for correct data entry.

- The proposed system will generate a number of Reports, which are not available in existing system. For example Petty Cash Report, CashBook Report, Headless Report and Ledger Reports etc.
- The system will be completely computerized while the existing system is partially working.
- The proposed system will be a comprehensive database, which provides Insertion, Deletion, Accession, Updating etc. on each file.
- In the proposed system, facilities will be provided.
- It is user friendly . Some of general features of the proposed system are as follows.
- It should be flexible to cope with future changes.

3.2.1 USER INTERFACE

For efficient user interaction, Screens will be designed to keep data entry, updating and deletion simple and easy for the user. These screens will clearly tell the user what to do and how to perform a particular function. Data will be accepted in similar manner as it is done manually.

3.2.2 ON-LINE-HELP

The system will provide full on-line help to the user, so that the user can use the system easily. The proposed system will be completely user friendly with appropriate messages, which will indicate a wrong input or any other error.

3.2.3 UPDATION

Any mistake detected or any other necessary updating can easily be made through updating operation. User may change any field of any field, having privilege for updating. If record does not exist then the system should give an error message.

3.2.4 DELETION

Facility of deletion of particular records from databases is also provided if so required. Different SQL queries would provide deletion facility. Only the responsible person would have the privilege for deleting records, which are necessary.

3.2.5 CHECKS

Various checks are provided in the database for data entry, updating, deletion, and insertion. Checks would also be made so that no duplicate records are entered. If a user tries to enter duplicate records then system will give an error message. Range checks would also be applied on some data files to check whether they fall in the required range.

3.2.6 SPECIFICATIONS OF THE INPUT

There are various types of inputs, which are classified according to their mode of entry in the database. Some input remain constant during the working system. These inputs are called CONSTANT INPUTS. Constant inputs are designation, id-card-no etc

Some inputs can be changed throughout the program, these types of inputs are called VARIABLE INPUTS. For example Voucher-no, date, amount etc.

Some variable inputs depends upon some conditions. For example if an employee or party does not involved in a transaction, then there is no need to fill these fields. These inputs are classified as CONDITIONAL INPUTS.

3.3 HARDWARE CONSIDERATION

The hardware and operating system requirements for the proposed system are as follows

- 16 MB RAM.
- A PENTINIUM with 133 MHz processor.
- A 2.1 Gigabyte hard Disk.
- A VGA color monitor.
- Window 95 operating system.
- A Laser Printer.

3.4 THE SOFTWRE TOOL SELECTION

It depends upon the problem that is to be solved. Different languages and package provides different features that they handles strongly in its own way. They handled strongly in its owns way. Oracle is fully relational database package.

In PIDE some systems previously running on main have been converted in to PC's based system using Ryan-Mefarband COBOL VERSION 4.10.10 as a software tool. The software tool used for the designed software is Developer/2000. The reason for its is as follows

Developer 2000, which is more secure and efficient.

It contains all the features of DBMS i.e. relations, operation like insertion, deletion etc, data integrity, consistency, crash recovery and 4^{th} GL tools.

It has menu driven WinWord user interface.

It contains rich library of commands and functions, which simplifies any programming task.

It provides the facility to maintain screens updating, deletion,

Insertion is possible in minimum possible time, powerful and efficient indexing and easy.

Every unit in Oracle works like an independent engine and they start independently. Its engines are

- SQL *MENU
- SQL *PLUS
- SQL *FORM
- SQL * REPORTS Writer.

One engine can run another. Database is created in SQL *PLUS, entry program, modification, deletion etc are made in SQL *FORM, Reports are made in SQL *REPORTS, Then SQL *MENU links all these independent units together and a complete Software is introduced with proper security by SQL *MENU.

CHAPTER 4

SYSTEM DESIGN

Faith in God is no substitute of hardwork

4.0 INTRODUCTION

System design is an important phase in the system life cycle. The new system is designed keeping in view the conditions imposed by the organization and to avoid the drawbacks, which we have been found in the existing system. Design a system, which would meet the requirements of the organization. The designed system should consist of complete and clearly outlined specifications that state what the software should do. There should be no ambiguity. Before development any system, it is very important to sketch specifications and with the help of these specifications, thorough analysis is carried out which helps in drawing the detailed design, which should consist of the input form, out put reports, query formats and layout of all data base files and their relationships. The procedures and functions to be developed are also included in the detailed design. There are many factors, which should be take in to account in the design such as economical factor, reliability, responsiveness and modularity.

4.1 INPUT DESIGN

Input design specifies the manner in which data enters the system for processing. An accurate and effective input design ensures the reliability of the system otherwise output may be erroneous. Data is checked at the input stage to prevent incorrect data to creep in e.g. primary center is the key field so that it should not be duplicated, similarly characters should not be accepted in numeric fields and vice-versa. So checks are provided for validation.

Input design involves the following steps.

1. *CODE DESIGN.*
2. *SCREEN DESIGN.*

4.1.1 CODE DESIGN.

A code is an abbreviation of the actual data, which occupies less space since the user has to enter only the code instead of the whole field. Using codes, Data Retrieval

becomes fast and easy. In the designed system codes are entered in a user-friendly manner. For a field having large number of choices actual codes will not be entered by the user but instead a choice list is used. The user needs only to select the required value with the help of arrow keys (only upward and downward) and then press the return key. This approach is adopted to avoid confusion in the data entry for the fields, which have fixed values.

The following codes are used in the system.

4.1.1.1 DESIGNATION CODES

It is two-byte long number field, which represents designation. There are ninety designations in PIDE, which are likely to be increased. Some designation and their corresponding codes are given below

DESINAION CODE	DESIGNATION
1	DIRECTOR
2	JOINT DIRECTOR
3	CHIEF OF RESEARCH
4	CHIEF TRAINING PROGRAM
5	SENIORRESEATCH ECONOMIST

And so on.

4.1.1.2 ACCOUNT CODES.

Account code is a one byte numeric field, which represents the type of account involved in a transaction. There are two types of accounts code. The name of these two's are

1. **Personal Ledger Accounts (PLA)**
2. **National Bank of Pakistan (NBP)**

Personal ledger account maintain details of transactions which are carried out governments take grant from the government

NBP is that account in which PIDE earns money from their own resources such as research. Such amount is maintained by NBP. The codes for these accounts are

Code Description	Account Name
1	PLA
2	NBP.

4.1.1.3 TRANSACTION CODES.

There are two main types of transactions in any account system, in the designed system there are also two main transactions such as

1 **CREDIT**

2 **DEBIT**

The transaction codes are

Code	Transaction Name
1	Credit
2	Debit

4.1.1.4 CITY CODES.

City codes are used to store information about residence of employees in the organization. The names of these cities are

1 RAWAPINDI

2 ISLAMABAD

The names of the cities and their codes are as follows

Code	City Name
1	ISD
2	RWP

4.1.1.5 VOUCHER TYPE CODES.

These codes are used for different vouchers. As we know that there are four different vouchers used in PIDE. So for efficiency view of point we assign them codes. These different vouchers are

- **Receipt Voucher.**
- **Debit Voucher.**
- **Journal Voucher.**
- **Petty Cash Voucher.**

The codes for these vouchers are

Code Description	Voucher's Name
1	Receipt Voucher
2	Credit Voucher
3	Journal Voucher
4	Petty Cash Voucher.

4.1.1.6 BANK CODES

There are two Banks with which the organizations dealing are carried out. The names of these Banks are

1. **National Bank of Pakistan.**
2. **Habib Bank of Pakistan.**

Both of these are located in Quaid-I-Azam University campus.

The codes for these two Banks are

CODE	Bank's Name
1	National Bank of Pakistan
2	Habib Bank of Pakistan

4.1.2 SCREEN DESIGN

The screen were designed in such a way that the input process is clear, data input is accurate, easy to use and it provides appropriate help and error messages to the user.

Input design is concerned with data formats and data contents. Before designing the data entry system the length and type of each field were determined, keeping in mind that no memory should be wasted. It is the responsibility of the programmer to check the accuracy of the data entry, during the data entry so that the user can have the knowledge of what he has to enter.

4.1.2.1 PASSWORD

Passwords are implemented for security purposes, whenever a user wants to logs in, he/she will provided his identification by typing the password. If the given password matches with the registered password, then user will be able to enter the data in the forms. It will also the user to make modification, deletion or posting data to the master file. In Oracle the items in SQL *MENU provide these type of securities by defining ROLE in system of manger identification.

4.1.2.2 LIST OF VALUES

When a system is designed on the basis of Oracle, then a facility is provided from Oracle, Which is LOV'S. By using this facility, we will be able to enter the data specially code from the table into master file. When we reach that item in the master file then a

LOV'S for that field is opened automatically. Now with the help arrow keys, we choose one of them and then press <Enter> Or <Ok> with the help of mouse. In this way, we will be able to enter all the entries. We use list of values from the supporting table commonly.

For example the lists of values for designation codes are

Code Description	DESIGNATION
1	Director
2	Joint Director

etc.

4.2 OUTPUT DESIGNE

The ultimate result of the painstaking efforts of the system analyst can be seriously undermined if the output produced by the system is not up to the mark. For the system to be successfully implemented the output must be according to the requirements of the organization. Two types of outputs are provided in the designed system

1. *PRINTED OUTPUTS.(REPORTS)*
2. *SCREEN OUTPUTS (QUERRIES)*

4.2.1 PRINTED OUTPUTS

Reports are generally used by the management and are mostly generated in print form. The reports of the proposed system are assigned so that they are, Meaningful, Informative, and Easy to Understand. The system produces the following reports

4.2.1.1 MONTHLY REPORTS

1. Monthly employee wise report.
2. Monthly account head wise repot.
3. Monthly cash book report for PLA account.
4. Monthly cash book report for NBP account.

5. Monthly petty cash book report for PLA account.
6. Monthly petty cash book report for NBP account.
7. Monthly petty cash book report for both PLA and NBP account.
8. Monthly cash book report for both PLA and NBP
9. Monthly Journal Voucher book report for PLA account.
10. Monthly Journal Voucher book report for NBP account.
11. Monthly Journal Voucher book report for both NBP and PLA account.
12. Monthly account head wise reports (Ledger).

4.2.1.2

- Yearly cash book report for PLA account.
- Yearly cash book report for NBP account.
- Yearly cash book report for both PLA and NBP account.
- Yearly petty cash book report for PLA account.
- Yearly petty cash book report for NBP account.
- Yearly petty cash book report for PLA account.
- Yearly petty cash book report for both PLA and NBP account.
- Yearly journal voucher book report for PLA and NBP account.
- Yearly journal voucher book report for PLA account.
- Yearly journal voucher book report for NBP account.
- Yearly account head wise report.
- Yearly employee report.
- Yearly party wise report.

4.2.1.3 DATE WISE REPORTS

1 Daily Data Entry proof Report.
2 Date wise Cash Book Report for NBP account.
3 Date wise cash book report for PLA account.
4 Date wise cash book report for both PLA and NBP account.
5 Date wise petty cash book report for PLA account.

6 Date wise petty cash book report for NBP account.

7 Date wise petty cash book report for both PLA and NBP account.

8 Date wise journal voucher book report for PLA account.

9 Date wise journal voucher book report for NBP account.

10 Date wise journal voucher book report for both PLA and NBP account.

4.2.1.4 OTHER REPORTS

1.List of all account heads.

2. List of cities.

3.List of all employees

4.List of designation and codes.

5.List of voucher code.

6.List of Bank names.

4.2.2 SCREEN OUTPUTS

Queries are normally supposed to be answered on the computer screen and used for quick retrieval of information. The queries offered by this system are

1. Monthly wise Query for NBP account.
2. Monthly wise Query for PLA account.
3. Monthly employees wise Query.
4. Monthly head wise Query.
5. Monthly party wise Query.
6. Yearly wise Query for NBP account.
7. Yearly wise Query for PLA account.
8. Yearly party wise Query.

8. Yearly party wise Query.
9. Yearly account head wise Query.
10. Yearly employee wise Query.

4.3 FILE DESIGN

After designing the inputs and outputs, the next stage is to store data in the form of files. Well designed files will result in

- Substantial saving of storage
- Minimize data redundancy
- Minimize data duplication
- Minimize inconsistency.

To provide these features and to overcome these problems 'NORMALIZATION' techniques are used.

4.3.1 STRUCTURE OF THE DATABASE.

ACCOUNT CODE FILE

This file contains the codes of different accounts. I.e. there are two codes in which PIDE'S concern. The names of these two accounts are PLA and NBP. T different fields of this file are

FILE NAME: :ACCOUNT_C
PRIMARY KEY: :ACCOUNT CODE.
RECORD LENGTH: :31

RECORD LAYOUT :

FIELD NAME	TYPE	LENGTH	DESCRIPTION
ACC_CODE	NUMBER	1	ACCOUNT CODE
ACC_NAME	VARCHAR2	30	ACCOUNT NAME

TRANSACTION FILE

This file contains the information of the transactions. There are two different transactions in this organization namely known as CREDIT and DEBIT.

FILE NAME : TRANSACTIONC.
PRIMARY KEY : T_CODE
RECORD LENGTH: :5

RECORD LAYOUT:

FIELD NAME	TYPE	LENGTH	DESCRIPTION
T_CODE	NUMBER	1	TRANSACTION CODE
T_NAME	VARCHAR2	4	TRANSCTION NAME

DESIGNATION FILE

This file contains the information about the different designation, which is works in PIDE; there are about one hundred designations in PIDE

FILE NAME :DESIGNATION
PRIMARY KEY :DESG_CODE

RECORD LENGTH :33

RECORD LAYOUT :

FIELD NAME	TYPE	LENGTH	DESCRIPTION
DESG_CODE	NUMBER	3	DESIGNATION CODE
DESG_NAME	VARCHAR2	30	DESIGNATION NAME

ACCOUNT HEAD FILE

This file contains the information of different heads. There are many heads in PIDE. Some of these are transport head, salary head etc.

FILE NAME :ACCOUNT_H
PRIMARY KEY :AH_CODE
RECORD LENGTH :36

RECORD LAYOUT:

FIELD NAME	TYPE	LENGTH	DESCRIPTION
AH_CODE	NUMBER	6	ACCOUNT HEAD CODE
AH_NAME	VARCHAR2	30	ACCOUNT HEAD NAME

CITY FILE

This file contains the information of cities. There are two cities. It contains codes and the names of different cities. The structure of this file is

FILE NAME :CITY
PRIMARY KEY :C_CODE
RECORD LENGTH :11

RECORD LAYOUT:

DESCRIPTION	FIELD NAME	TYPE	LENGTH
CITY CODE	C_CODE	NUBER	1
CITY NAME	C_NAME	VARCHAR2	10

BANK FILE

This file contains the information about banks. The structure of this is

FILE NAME :BANK

PRIMARY KEY :B_CODE

RECORD LENTGH :9

RECORD LAYOUT:

DESCRIPTION	FIELD NAME	TYPE	LENGTH
BANK CODE	B_CODE	NUMBER	1
BANK NAME	B_NAME	VARCHAR2	3

VOUCHER FILE

This file contains the information of different vouchers, which are used in PIDE. The structur layout is

FILE NAME :VOUCHER

PRIMARY KEY :V_CODE

RECORD LENGTH :16

RECORD LAYOUT

DESCRIPTION	FIELD NAME	TYPE	LENGTH
VOUCHER CODE	V_CODE	NUMBER	1
VOUCHER NAME	V_NAME	VARCHAR2	15

MASTER FILE

This file contains the information of all transactions. The structure layout is

FILE NAME :MASTER

PRIMARY KEY :V_NO,V_CODE,V_E_NO

ALTERNATE KEYS : T_CODE, P_CODE, ACC_CODE, AH_CODE, B_CODE, CHEQUE_NO.

RECORD LENGTH : 129

RECORD LAYOUT

DESCRIPTION	FIELD NAME	TYPE	LENGTH
VOUCHER NO	V_NO	NUMBER	8
VOUCHER CODE	V_CODE	NUMBER	8
VOUCHER ENTRY NO	V_E_NO	NUMBER	1
TRANSACTION CODE	T_CODE	NUMBER	1
EMPLOYEE_NO	EMP_NO	NUMBER	3
ACCOUNT HEAD CODE	ACH_CODE	NUMBER	6
ACCOUNT CODE	ACC_CODE	NUMBER	1
PARTY CODE	P_CODE	NUMBER	5
AMOUNT OF VOUCHERS	AMOUNT	NUMBER	(8,3)
DETAIL OF TRANSACTION	DETAIL	VARCHAR2	60
DATE OF TRANSACTION	DATE1	NUMBER	8
DATE OF CHEQUE	DATE2	NUMBER	8
CHEQUE NO	CHEQUE_NO	NUMBER	8
BANK CODE	B_CODE	NUMBER	1

EMPLOYEE FILE

This file contains the information about employees. The structure of this is as

FILE NAME :EMPLOY
PRIMARY KEY : ID_CARD_NO
ALTERNATE KEY :DESG_CODE
RECORD LENGTH :157

RECRD LAYOUT

DESCRIPTIO	FIELD NAME	TYPE	LENGTH
EMPLOYEE_NO	EMP_NO	NUMBER	3
EMPLOYEE NAME	EMP_NAME	VARCHAR2	30
IDENTITY CARD NO	ID_CARD_NO	NUMBER	13
GRADE OF EMPLOYEE	GRADE	NUMBER	6
STARTING PAY	S_PAY	NUMBER	(5,3)
CURRENT PAY	C_PAY	NUMBER	(5,3)
SEX OF THE EMPLOYEE	SEX	VARCHAR2	6
DESIGNATION	D_CODE	NUMBER	3
ADDRESS OF EMPLOYEE	ADDRESS	VARCHAR2	80

PARTY CODE FILE

This file contains the code of different parties. The structure of this file is

FILE NAME :PARTY_C
PRIMARY KEY :P_CODE

RECORD LAYOUT

DESCRIPTION	FIELD NAME	TYPE	LENGTH
PARTY CODE	P_CODE	NUMBER	5
PARTY NAME	P_NAME	VARCHAR2	75

PARTY FILE

This file contains the information of different parties including address and telephone number The structure of this file is as follows

FILE NAME :PARTY

PRIMARY KEY :P_CODE

ALTERNATE KEY:C_CODE

RECORD LENGTH:21

RECORD LAYOUT

DESCRIPTION	FIELD NAME	TYPE	LENGTH
PARTY CODE	P_CODE	NUMBER	4
CITY CODE	C_CODE	NUMBER	1
RESIDENCE TELE PHONE NO	RES_TEL_NO	NUMBER	8
OFFICE TELE PHONE NO	OFF_TEL_NO	NUMBER	8

CHAPTER 5

THE SYSTEM DEVELOPMENT

Is ALLAH not sufficient for HIS servant?

5.1 INTRODUCTION

The system development phase comes after the system design. The software is developed to meet the proposed and designed specification of the system. The purpose toe the development phase is to transform design into executable computer software, which may then be tested and implement's as a new system. In order to ensure the successful implementation of the system, the system analyst must perform certain tests and look on to the different possibilities during this phase; the developed system is put into the actual operation.

5.2 SYSTEM DEVELOPMENT

The entire database has been developed by using SQL*PLUS, SQL*FORMS, SQL*REPORT and SQL*MENU. By integrating these all aspects, complete software is developed. However it is necessary that we discuss some termnologies which are used in development.

5.2.1 SQL*FORMS

SQL*PLUS and SQL*FORMS are used to insert, update, delete the different tupples. SQL*FORM allows quick development of applications for entering, querying, updating and deleting the data. ORACLE SQL*FORMS engine provide many facilities i.e. making good screen by using screen painter. A field can be replaced anywhere in the screen by using screen painter as programmer wish. SQL*PLUS is used mainly for the creation of tables and views. SQL*PLUS is an interface through which SQL commands may be entered and executed. There are a number of SQL commands which can further process and format the output from one SQL commands and provide facilities for saving and editing SQL commands. ORACLE forms provide facility to design forms. These forms provide easy and fast data entry, deletion, updating and queries to in ORACLE database.

5.2.2 BLOCKS

A form may contain one or more blocks. The blocks are the basic building of SQL*FORMS. A block contains a base table in which data is input, delete, query and update. It will be consisted on some base table when it is created by default. Each block is used to perform a specific task.

5.2.3 BASE TABLE

A base table is that database in which a block is based. A block, which is associated with a base table, contains the fields of the base table. The table which created in SQL*PLUS contains some on it which restricts the input that is done in SQL*PLUS or in SQL*FORMS.

5.2.4 SCREEN PAINTER

It provides facility to design the screen. By using this facility, source fields are put according user's wish. Actually it is full screen editor, in which one can quickly move fields around, add boxes, other text and changing the text displayed for a field.

5.2.5 TRIGGERS

All triggers (Form Level Triggers, Item Level Triggers and Block Level Triggers) are written in PL/SQL, which is language, integrated with ORACLE database. Actually triggers are set of processing commands. Triggers are associated within SQL*FORMS. It can be fired anywhere. An event is an action that occurs when a form is executed. An example of an event is the operator pressing the key [EXIT]. When this event occurs, it's associated trigger e.g. DO_KEY ('EXIT') fires executing the commands it contains.

5.2.6 MASTER DETAIL RELATIONSHIP

Master Detail Relationship is established between two blocks at form level. A record of the master block can have more than one tupples in detail. Join condition fields are automatically input to the detail block fields. When queried the master block its detail entries are also queried. Master Detail Relationship provides good interface in ORACLE. There is a primary to foreign key relationship between tow fields.

5.2.7 ORACLE REPORTS

Oracle reports is a feature-rich reporting tool that produces production quality output using data sources such as the oracle database. Developers are able to embed graphics, sound, video and a wide assortment of visual aids in screen and hard copy output (printed. In ORACLE REPORTS the designer interface is mouse-driven.

5.3 INPUT FORM DESIGNING

SQL*FORMS developed form based applications for entering, querying, updating and deleting data. To develop the application quickly SQL*FORMS combine the instructions with information in the ORACLE data dictionary. The description of the data entry forms for the proposed system is discussed below.

There are three types of form, which I developed in my system,

5.3.1 CODE FORMS

There are six forms, which are related to codes. These six forms are discussed below.

5.3.1.1 DESIGNATION

Form Name : DESIGNAT.

Purpose : This form is used to maintain the code of different designations according to their importance.

FORM DETAIL

Block Name	Master Block	Description	Table Name
Designat	----------	Specifies the code of each designation	Designation

5.3.1.2 ACCOUNT_C

FORM NAME : ACCCOUNT.FMB.

PURPOSE : It contains the code of accounts there are two main accounts, which PIDE'S maintain.

FORM DETAIL.

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
Account_	----------	Contains the code of accounts.	Account_c

5.3.1.3 BANK.

FORM NAME : BANK.

PURPOSE: : It holds the code of two banks in which most of the time PIDE interact.

FORM DETAIL.

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
Bank	----------	Specifies the code of two banks.	Bank.

5.3.1.4 CITY

FORM NAME : CITY.

PURPOSE : It contains the code of different cities.

FORM DETIAL.

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
City	----------	Contains the code of cities.	City

5.3.1.5 VOUCHER_C

FORM NAME : VOUCHER.

PURPOSE: :This form contains the codes of different vouchers. There are four vouchers, which are used in PIDE.

FORM DETAIL.

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
VOUCHER	----------	SPECIFIESTHE CODEOF VOUCHERS	VOUCHER_C

5.3.1.6 PARTYC.

FORM NAME PARTY

PUR OSE It contains the code of different parties.

FORM DETAIL:

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
Party	----------	Contains the code of parties.	Partyc.

5.3.2 TRANSACTION FORMS.

There are two forms in which transaction takes place. These two forms are discussed below.

5.3.2.1 TRANSACTIONC.

FORM NAME TRANSACT.fmb.

PURPOSE It contains the code of two transactions namely known as credit and debit.

FORM DETAIL:

BLOCK NAME	MASTER BLODK	DESCRIPTION	TABLE NAME
Transact	----------	Holds the code of transaction	Transactionc.

5.3.2.2 ACCOUNT_H.

FORM NAME: ACCOU_H.FMB.

PURPOSE It contains the code of different heads.

FORM DETAIL:

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
Accou_h	----------	Holds the codes of heads.	Account_h.

5.3.3 SETUP FORM.

There are main three forms. The name of these forms is

- PARTY1.FMB
- EMPLOY.FMB.
- MASTER.FMB.

These forms are discussed below.

5.3.3.1 PARTY.

FORM NAME PARTY1.FMB.

PURPOSE: It contains the information of different parties in terms of city, office telephone-no etc.

FORM DETAIL:

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAMES
Party	----------	Hold the code of	Partyc.

5.3.3.2 EMPLOYEE.

FORM NAME : EMPLOY.FMB.

PURPOSE: : It contains the information of each employ, which is working in PIDE

FORM DETAIL:

BLOCK NAME	MASTER BLOCK	DESCRIPTION	TABLE NAME
Designat	----------	Holds the codes of designation	Designation
Employ	Designat	Contains the information of employ	Employ

5.3.3.3 MASTER

FORM NAME : MASTER.FMB.

PURPOSE : It is the main file of system. Mostly reports are generated from this file. , Most of the codes are used in this file.

5.4 REPORT GENERATION

ORACLE provides a tool for the generation of reports. We use SQL*REPORTS writer. It is classic report generation program. It consist of two programs which are used together to derive information from a *database* and generate a report that presents information in the desired fashion. there are two steps to generate a report which are

❖ *REPORT TEXT FORMATTER*

5.4.1 REPORT GENERATOR

For accessing information from the oracle database, we use options of ORACLE REPORT GENERATOR. The information from the database is retrieved through SQL statements.

5.4.2 REPORT TEXT FORMATTER

To control the final format of the resultant data, Report Text Formatter provides option. It provides setting page size, defining column width, blank spaces, setting the margins etc. So to generate a report in SQL*REPORT writer, first the required data is extracted from the database by using report text generator and the requested data is formatted and comments are added to form a meaningful report by using report text formatter.

CHAPTER 6

SYSTEM TESTING & EVALUATION

You can fool some people all the time,

All people for some time,

BUT

You can't fool all the people all the time

6.1 INTRODUCTION

System testing and implementation is the final phase of the system life cycle. In order to ensure the successful implementation of the system, the system analyst must perform certain tests. During this phase the developed system is put into the actual operation. The major components of this phase are the test plan and the conversion plan.

6.2 TESTING

The testing process focuses on the logical internals of the software assuring that all statements have been tested. It also focus on the functional externals i.e. concluding tests to assure the defined input will produce actual result that agree with required results. There are three levels of testing that are used to ensure that the developed system was performed in the following three steps.

- *UNIT TESTING.*
- *INTEGRATED TESTING.*
- *SYSTEM TESTING.*

6.2.1 UNIT TESTING

In unit testing different modules of the software were tested independently. The purpose of this testing is to determine, that each module is functioning properly and to locate logical and coding errors that may be contained within a particular module. e.g. when an input "FORM" was completed then dummy data was entered to check its correctness.

6.2.2 INTEGRATED TESTING

After successful unit level testing, integrated testing of all modules of the system was performed to ensure that all interfaces of the forms and the modules have been defined correctly and that correct form are being invoked by different menu options. This was necessary as the forms have been developed separately from the application. It was also ensured that the different modules are integrating with each other correctly.

6.2.3 SYSTEM TESTING

System testing is performed to ensure that software is operating according to the desired specification and requirements of the organization. Testing and validation of results is very important to make the system acceptable. In the designed system, the size and structure of the data fields ware checked while using the actual data. The main aim here was to determine the inconsistencies in the developed system. hence the software has been tested at system level.

6.3 SYSTEM CONVERSION

Conversion is the process of changing the form at of the old system to the new one. There are four basic conversion methods to implement a system.

- *PARALLEL CONVERSION*
- *PILOT CONVERSION*
- *DIRECT CONVERSION*
- *PHASE IN CONVERSION*
- *PROPOSED SYSTEM CONVERSION*

6.3.1 PARALLEL CONVERSION

In this approach, both the old and new system run side by side. it means that the user continues to use the old system and simultaneously learns to operate the new system. when the users are fully trained, the new system replaces the old system. this is the safest approach, since in case of failure, the user may immediately turn back to the old one, without any wastage of time and data.

6.3.2 PILOT CONVERSION

In this method, a working version of the system is implemented in one portion of the organization, such as single work area of areas continued to work with the old system. The only advantage of this approach is to provide a sound basis for the whole system to be install.

6.3.3 DIRECT CONVERSION

In the direct conversion method the old system is converted to new one immediately. The old system is used until a planned conversion day and then the new one replaces it. In this method, there are no parallel activities containing side by side. There is no backup of the old system, which is a big disadvantage of this conversion . This approach is also some times called direct CUTOVER. In case of failure of the new system, the whole system will collapse.

6.3.4 PHASE IN CONVERSION

The phase in conversion is used whenever it is bot possible to install a new system through out an organization all at once i.e. it will be brought tin gradually. Tin this type of conversion takes the long period, which is drawback of this approach.

6.3.5 PROPOSED CONVERSION

Since the user needs to get familiar with the new designed system which might take some time, so DIRECT CUTOVER and PARALLEL conversion were considered suitable because both the system can not run parallel. Therefore PILOT approach has recommended for the implementation of this project. The arguments against PARALLEL conversion are cost and extra workload factors. POLOT approach will be implemented initially in investigation. If no serious problem is face by the system, the system will be implemented fully. The POLOT approach will minimize the problems that may arise from the system's failure. It will also provide a better way of comparing the old and new system.

6.4 EVALUATION OF THE SYSTEM

Another weather the developed system has met the goals and objectives of the proposed system, which are set in the system description, which is called system evaluation. After testing and installation of system the following merits and demerits have been found.

6.4.1 MERITS

A software system is evaluated by the type of interface that it provides to the user and how well it fulfills the requirements of the user. This interacting platform is run judges by some other factors are measurable objectives, which are central to evaluation. The merits of the developed system are discussed below.

- *QUERY AT EACH FIELD*
- *DEVICE INDEPENDENCE*
- *FASTER RESPONSE TIME*
- *CORRECTNESS*
- *CONSISTENCY*
- *EASE OF USE*
- *MODULARITY*
- *EFFICENCY*
- *LIST OF VALUES*
- *PHYSICAL AND LOCICAL INDEPENDENCE OF SOFTWARE*
- *SECURITY*
- *MODULAR APPROACH*
- *REDUCE RATE OF ERRORS.*

6.4.1.1 QUERY AT EACH FIELD

In Developer/2000, we can be used Queries. In the software, Queries have been providing at certain field according to requirements.

6.4.1.2 DEVICE INDEPENDENCE

The system can b run on other machines with different operating system as well. Only minor changes in parameter setting would be need to achieve this task.

6.4.1.3 FASTER RESPONSE TIME

The time factor plays a very important role in any computerized system, as it plays a very important role in every field of life. Efforts have been made to reduce the response time for the generation of on-line information, Queries and Reports. The existing system takes large amount of time to produce final reports and results, while the computerized system will provide reports and results within reasonable time.

6.4.1.4 CORRECTNESS

The outputs produced by the new system are found to be satisfactory. Data validation checks are imposed for the storage of correct information. If a user tries to inter incorrect information, he/she gets a warning message to correct it.

6.4.1.5 CONSISTENCY

Consistency is very important in any computerized system. the system, which does not provide consistency, is not efficient. To achieve this notations have been used through out the system. Efforts have been made to keep the data homogeneous. Consistency can be achieved by reducing data redundancy, inserting and updating anomalies in database.

6.4.1.6 EASE OF USE

The system, which has been developed, is menu driven. Data entry, Updating and Query operations are all provides on a single screen. The user can move among almost all of the fields during data entry. At each possible point, help is provided.

6.4.1.7 MODULARITY

The system is divided in to a number of modules combined together to fulfill user's requirements. These modules are independent of each other. Different user's can work in different modules at any time even at the same time. the major advantage of modularity is the ease of modifications and extension of the developed system.

6.4.1.8 LIST OF VALUES

In data entries when user enter a list of values pops up and from this user can select required value. By using these values, the user needs not to remember entries already made.

6.4.1.9 PHYSICAL & LOGICAL INDEPENDENCE OF SOFTWARE

Physical and Logical data independence is the separation of the way the data is physically stored from the arrangement of the data as presented to the user. so if the physical storage of data changes, there is no need to change the order of the fields in forms of in reports.

6.4.1.10 SECURITY

The system will run only by giving correct user name and password. However, different users have been granted select privileges to use different tables. That is why the security has been implemented at operating level, as well as, at software level.

6.4.1.11 MODULAR APPROACH

The whole system is implemented by designing different modules to perform different tasks. With the help of modular approach during software development, significant advantage of design simplicity and operational efficiency has been obtained, developed system can, therefore, be extended of modified with the help of modular approach.

6.4.1.12 REDUCE RATE OF ERRORS

The rates of errors are considerably reduced in the newly developed system. Appropriate error messages have been provided to prompt the user and refrain him from making errors.

6.4.2 FUTURE MODIFICATION & EXPANSION

A part from the account system there is other related systems departments, which are interacting in the running of PIDE. This can made to interact with the developed accounting system. The tool SQL*FORMS used in the software allows one to build forms which can be enhanced further. In future, if there arises a need for further improvement or changes, instead of building new application, the existing new application could be further extended. Further Queries and Reports related to the system can also be added.

6.4.3 PRECAUTIONS

A regular schedule for database backup should followed to avoid problems causing from system breakdown. The ORACLE utility EXP (export) should be used for this purpose.

CHAPTER 7

USER'S GUIDE

In GREAT attempts,

It is even GLORIOUS to fail

7.1 INTRODUCTION

This guide has been designed to explain the working of the accounting system at PIDE. It explains the system in detail to guide the user while running ACCOUNTING SYSTEM. This chapter comprises the features provided by the system. In this chapter, I have discussed the different operations like record insertion, modification, retrieval etc for the user.

7.2 HOW LOGIN AND LOGOUT

The system operates in multi-user environment, thus requiring the services of a database administrator tasks of the system such as creating new user, keeping back up copies of the data as well as confirm to the efficient working of the system.

The first step is to install the operating system i.e. WINDOS 95. Installation of the DEVELOPER 2000 is the next step. SQL*DBA is used to start and stop an ORACLE program. It also perform monitoring function and maintenance such as initial database creation, data backup of media recovery.

After LOGING, by using LOGIN and password i.e.

USERNAME: ABDUL

PASSWORD: *****

Now type SQL*DBA and an SQL*DBA prompt will appear. At the SQL*DBA, double click on it and a new screen will appear in the bottom in which we write.

CONNECT INTERNAL/MANAGER

Now press <RETURN> key or with the help of mouse, click on connect option, so that a message appears on the screen. A message CONNECTED will be appear on the screen. Now write STARTUP and press <ENTER> key. So that a message appears on the screen ORACLE INSRANCE STARTED or database MOUNTED. Mounted means database opened. To shutdown or dismounted the database, write SHUTDOWN at SQL*DBA prompt. In this way DEVELOPER 2000 will be dismounted. To run the system, write DEVELOPER MENU user name and password and then press <ENTER> key. So that the

menu will be executed. After some time, the main menu screens appears on the screen in which we can go to any option by moving the bar and then for selection press <ENTER> key.

7.3 IMPORTANT POINTS

The following points should be kept in mind, before using the system. These points are

7.3.1 EDITING FIELDS

With the help of editing fields, a form layout is able to store and retrieve data to and from the database. So an editing field is abase unit of the form designing.

7.3.2 STATUS LINE

The status line is that line on the screen in which the information is displayed of the current status of SQL*FORMS. Usually, it is the last line on the screen. It contains

- Which indicates that the end of the current field is scrolled to the fight side of the screen.
- Which indicates that the start of the current field is scrolled to the left side of the screen.

CHAR MODE indicates the number of records retrieved.

COUNT determines the number of records retrieved.

7.3.3 FORMS

To enter and retrieve data from the database, we use various form layouts. Thus they form the basis for under considered database.

7.3.4 MESSAGE LINE

It is usually the last line on the data entry screen on particular form layout. The message line is a place where SQL*FORMS display message. It also provides additional help.

7.3.5 OPERATIONS ON THE RECORDS

There are four different operations, which are applicable in records. These four operations are

- *INSERT*
- *DELETION*
- *MODIFY*
- *RETRIEVE*

7.3.5.1 INSERT THE RECORDS

User will adopt that method to insert more records in the database files

- Forms must be displayed when user wants to insert a new record.
- Then select record option from the menu.
- After select the record option, now select insert.
- Enter required data in the respective fields.
- By pressing <DOWN ARROW> key, the new inserted record will b save in the workspace.
- In this way, we insert the records one by one.
- After entering or inserting all the required records, select <SAVE>option with the help of mouse to save all the newly records.

There is also an other method to delete the records from the database which is

- In this method, select <CLEAR> option from the record option i.e. enter <CLEAR>key
- Enter the data in respective fields.

- Now to save the records by pressing <SAVE> key.
- After entering the records, press <EXIT> key, to exit from that form.

If user try to enter the duplicate primary key, then system will generate an error message. So care must be taken when entering the records.

7.3.5.2 DELETE THE RECORDS

The following criteria is adopted, when user wants to delete the records

- The form where user wants delete the record must be displayed.
- Keeping the cursor at the first field of the form.
- Press <EXECUTE QUERY>.
- First record is displayed, now select this option until the desired record is displayed.
- Now enter <DELETE> key.
- If user want to delete the other records, then the same process is repeated.
- If user want to delete the records permanently, then enter <COMMIT>.
- Press <EXIT> to exit from the form.

7.3.5.3 MODIFY THE RECORDS

To modify the records, user should adopt the following method

- The form which user wants to modify must already be displayed.
- Now enter <ENTER QUERY> key.
- Enter suitable value is the display editing fields, which are to be used, in performing a particular search. It may be single field of more than one field.
- Enter < EXECUTE QUERY > key, first record is displayed.
- Now select option <RECOUD> from form menu and then select < NEXT> option until the desired record is displayed.
- Enter new data in the editing field, whose values need to be changed.
- After entering the new data, press <DOWN ARROW> key to save the record into the workspace before saving it to the database.

- Similar process is continued until desired record is modified.
- To store the changes in the database select < SAVE > key.
- Press <EXIT > to exit from the form.

7.3.5.4 RETRIEVE THE RECORDS

To retrieve the records from the database, there are two methods available, which are

1 DISPLAY ALL RECORDS

- The form, which we want to retrieve a record, must already be displayed by selecting suitable option.
- Press enters <EXIT > key to exit from the form.

2 DISPLAY SPECIFIE RECORDS

- The form, which we want to retrieve records, must be displayed.
- Press < ENTER QUERY > key.
- Enter specific value in the display-editing field, which is coming from the form menu.
- First record is displayed.
- Now select the < RECORD > option from the form menu, from this user should be select the <NEXT > option from the <RECORD> option.
- Select next option until all records Ron the database that matches the parameters, values are retrieve.
- Press < EXIT> key to exit from the form.

If user want to retrieve that record which does not exist in the database, there will be a suitable message i.e. corresponding record does not exist in the database.

7.4 RECORD LOCKING

Record locking provided SQL*FORMS automatically. Because it have important role in multi-user environment. If another user want to enter updating or delete the

records from the database, and has not yet been committed which tells the user to wait for that person to make the changes permanently. In access the same record, then access will be denied. And so the other user will go in to wait position.

7.5 QUERY AND REPORTS GENERATION

From the main menu screen of in the submenu, user will select the reports of query option. By using <DOWN ARROW > key or < UP ARROW > key. User selects the required report of query. And finally pressing <ENTER > key at desired query or report, then it will produce a required result.

7.6 SECURITY IMPLEMENTATION

To create, startup. Connect and shutdown internal to the database, the ORACLE owner requires DBA privileges. So a member of DBA group automatically gives his privileges. Making this account, a member of database group, automatically gives to him/her these privileges. It looks for the group membership of our account, when user access the SQL*DBA. If it is the DBA group, then it grants access to the system privileges functions. If not so, then user can access only the querying and monitoring functions of SQL*DBA. The system administrator creates different user groups when we ensure the security of the system. User must create the database administrator group before installing the IRACLE. Now assign the root and oracle user ids to this group. It is also being done before installing oracle. Upon installation, the SQL*DBA system commands are automatically assign to the DBA group.

7.7 COUNT QUERY RECORDS

In SQL*FORMS count query record is also used. The following criteria should be used.

The required form must be loaded.

Press < ENTER QUERY > key.

Enter the search criteria.

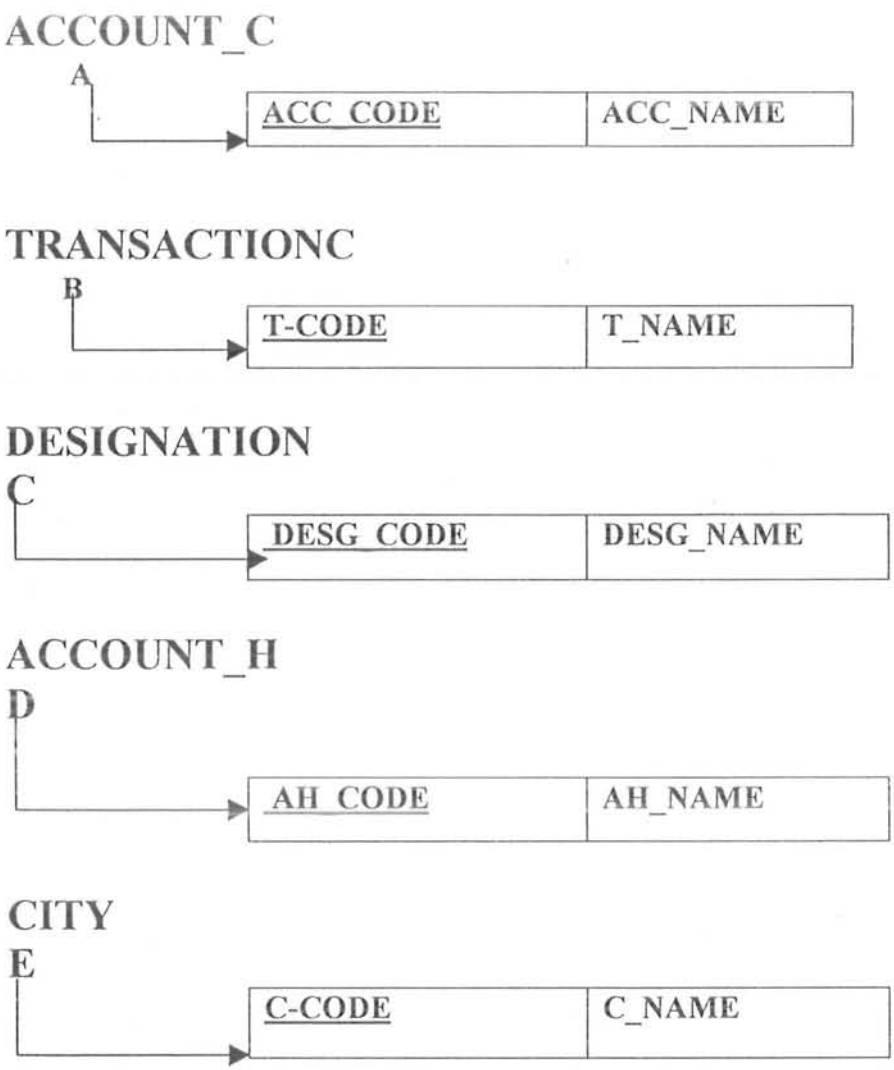
Now select < COUNT QUERY HIT'S > key.

In this way, the SQL*FORMS count the no of records that satisfy the particular condition and display the number in the message line.

7.8 SPECIAL CONSIDERATION

The system is developed under WINDOWS 95-based ORACLE, which is more complicated than other operating systems. Every user must have a log-in account and password assigned to user by the system administrator. The only user has the authority to create new users. System should be carefully dismounted and the root password is given before switching of the system otherwise the system may be corrupt, which either result in loss of data of in consistent data.

EXTENDED BATCHMAN DIAGRAM



BANK

F

B_CODE	B_NAME

VOUCHER_C

G

V_CODE	V_TYPE

PARTY_C

H

P_CODE	P_NAME

PARTY

E

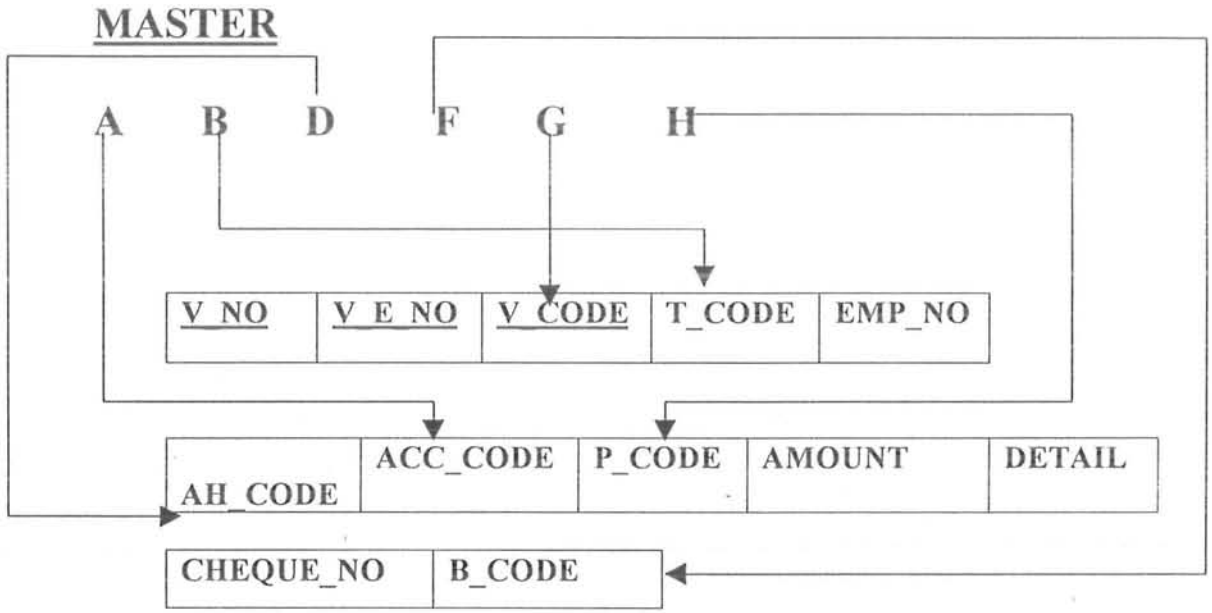
P_CODE	C_CODE	RES_TEL_NO	OFF_TEL_NO

EMPLOY

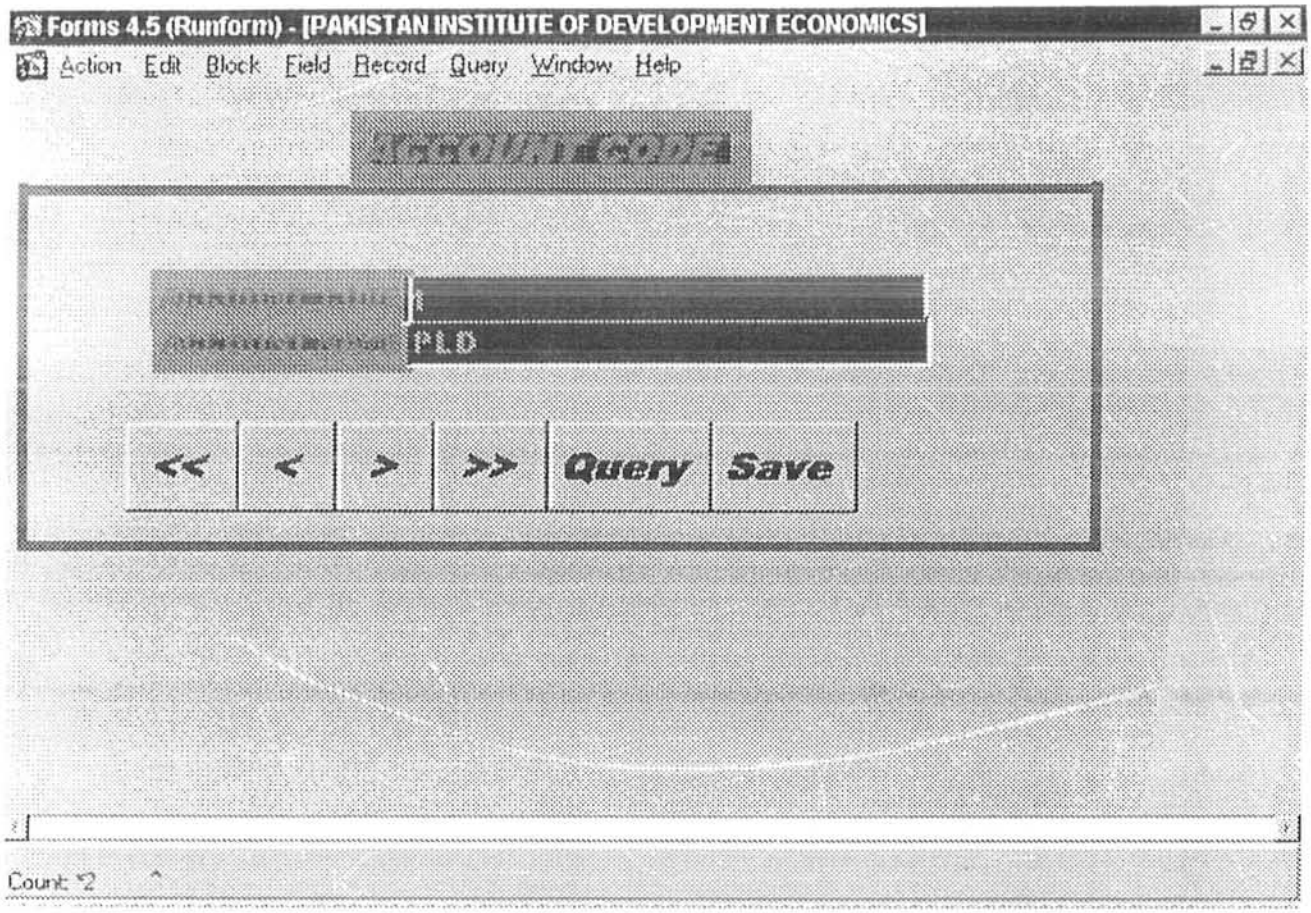
C

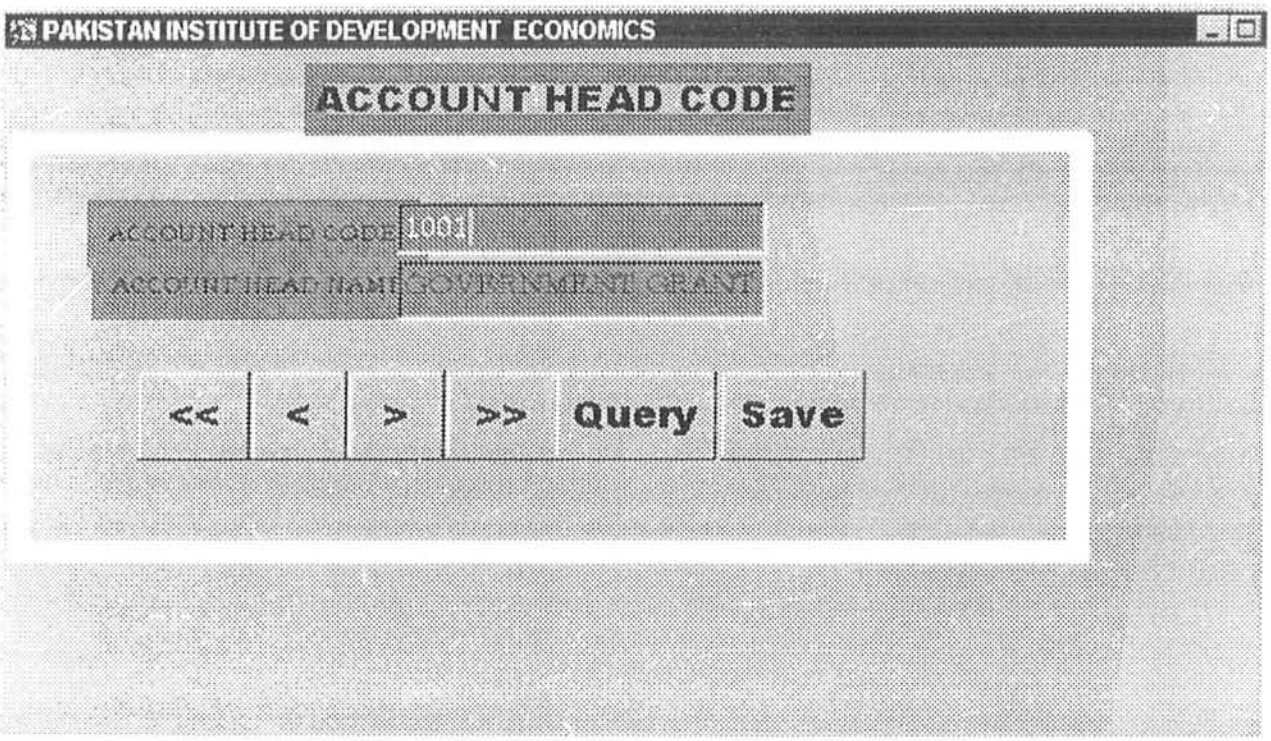
EMP_NAME	EMP_NO	ID_CARD_NO	DESG_CODE

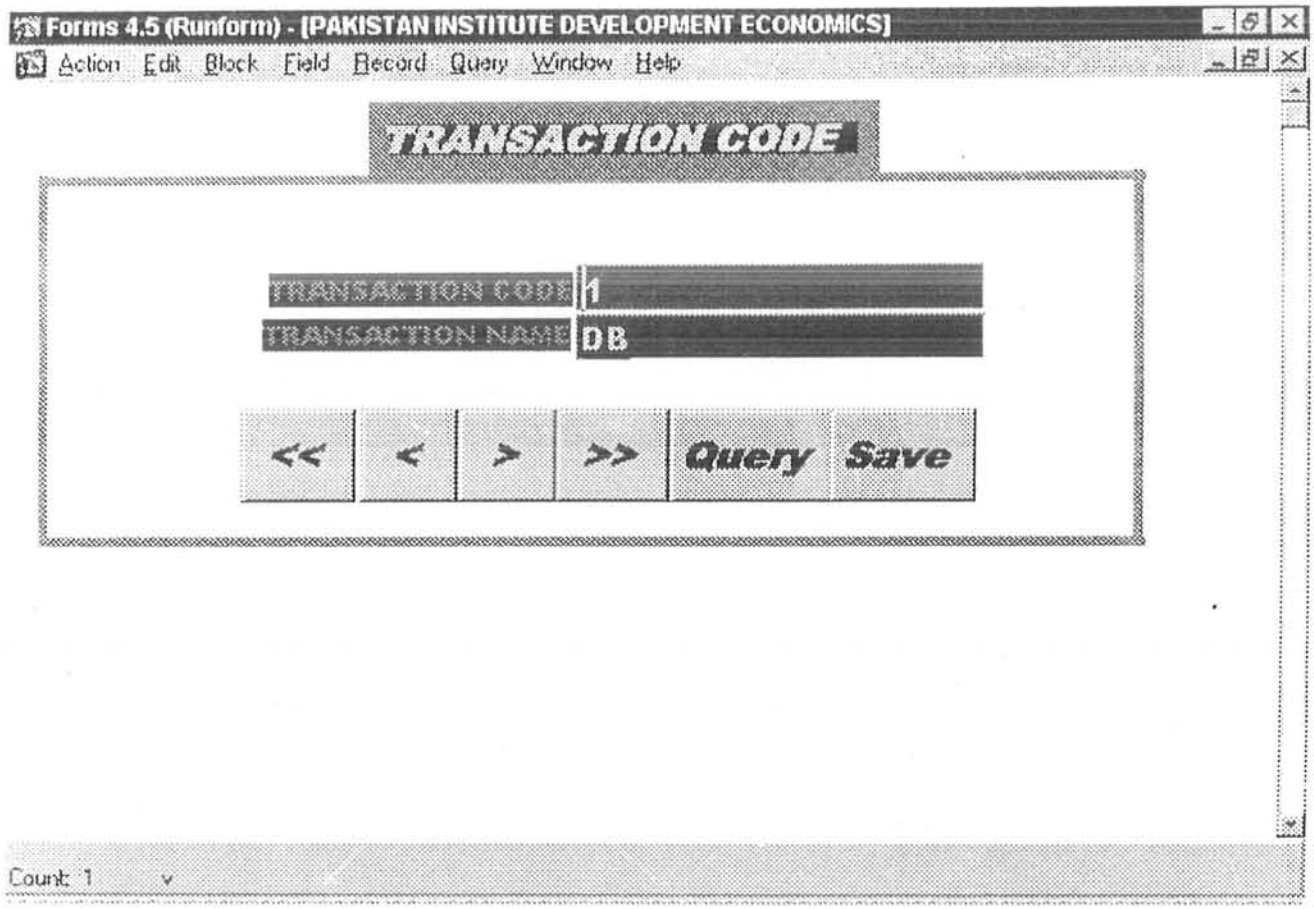
S_PAY	C_PAY	SEX	GRADE

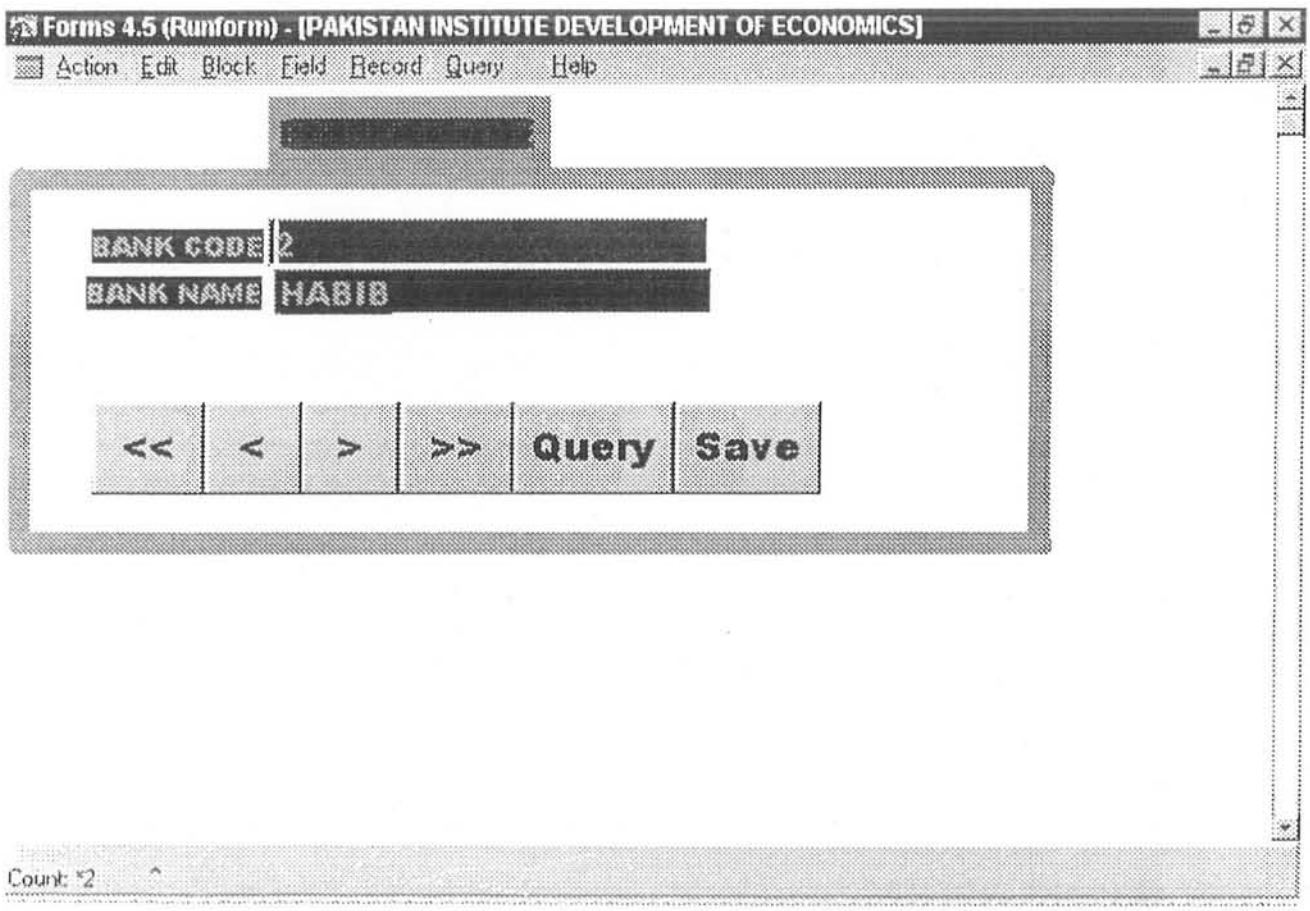

MASTER
A
B
D
F
G
H
V_NO
V_E_NO
V_CODE
T_CODE
EMP_NO
AH_CODE
ACC_CODE
P_CODE
AMOUNT
DETAIL
CHEQUE_NO
B_CODE

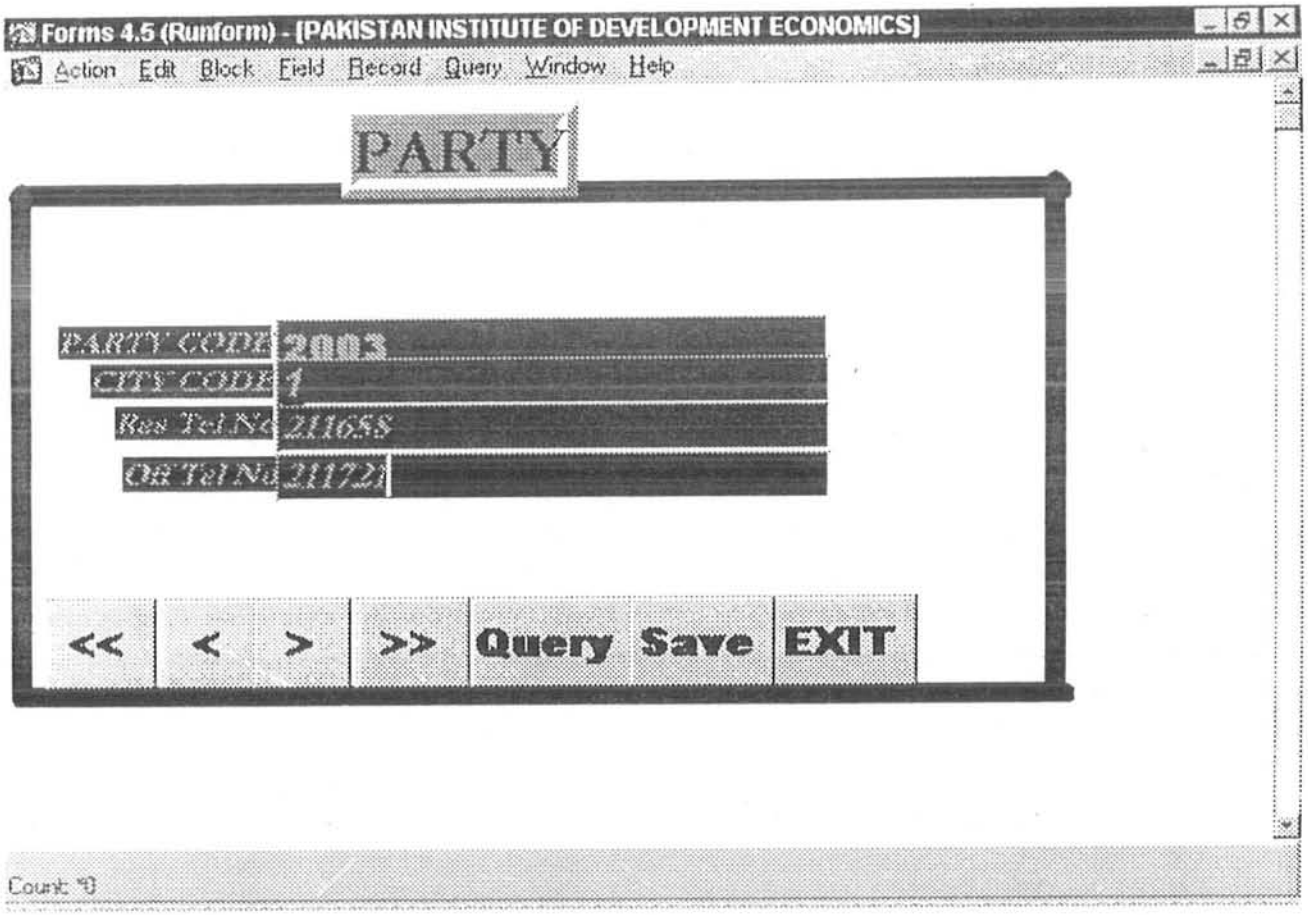
APPENDIX A

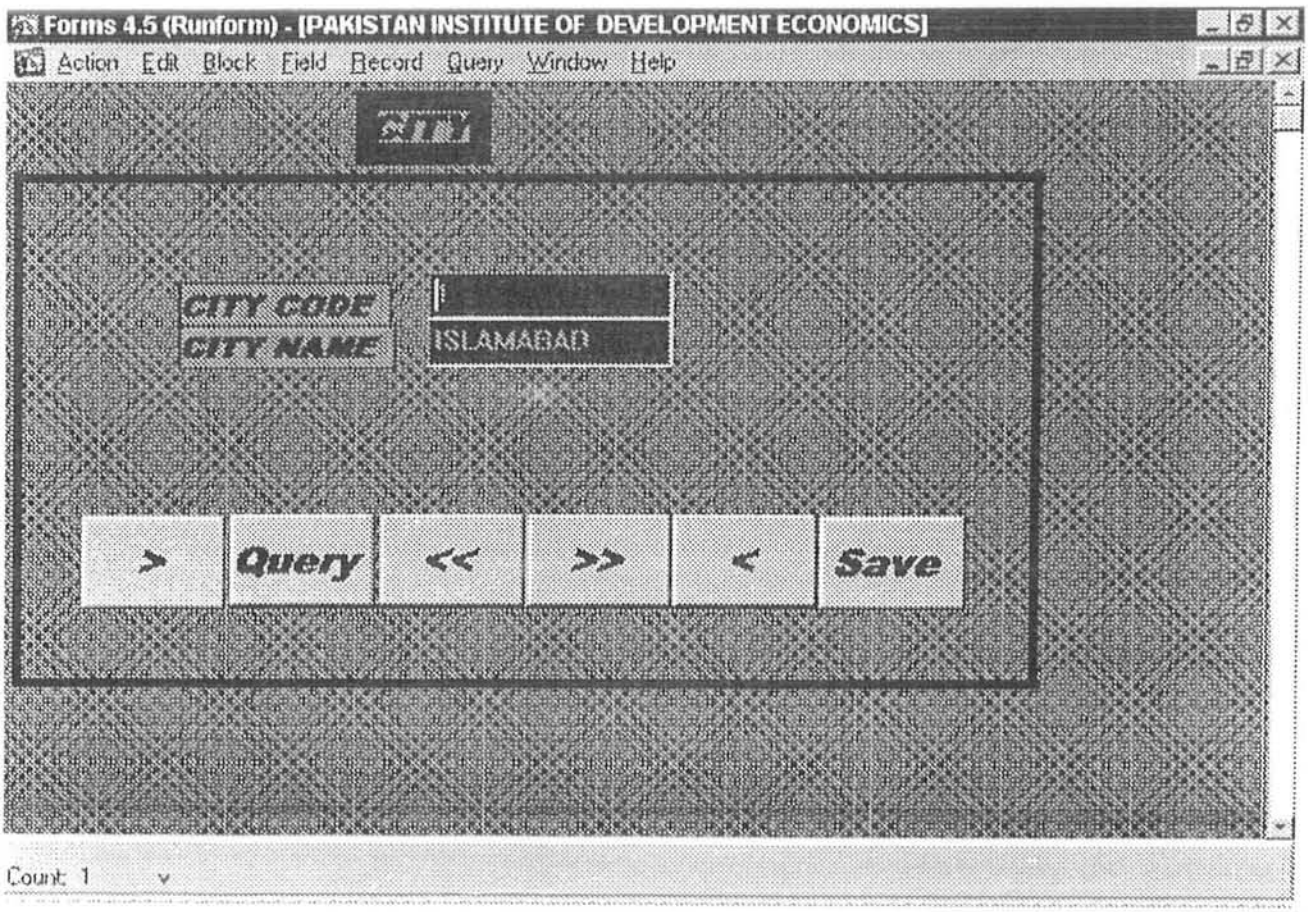

Forms 4.5 (Runform) - [PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
PLD
<< < > >> Query Save
Count: 2

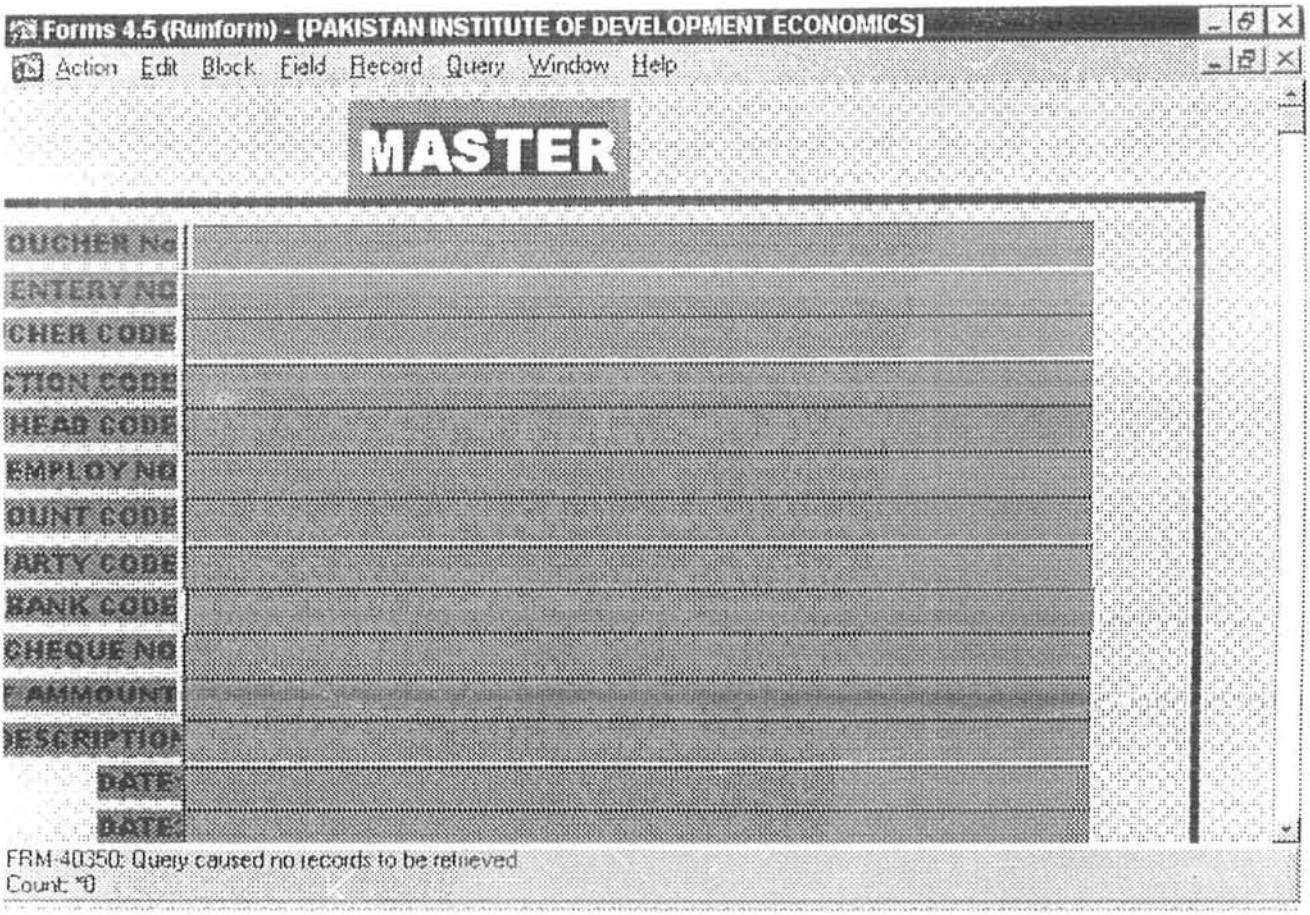

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
ACCOUNT HEAD CODE
ACCOUNT HEAD CODE 1001
ACCOUNT HEAD NAME GOVERNMENT GRANT
<< < > >> Query Save

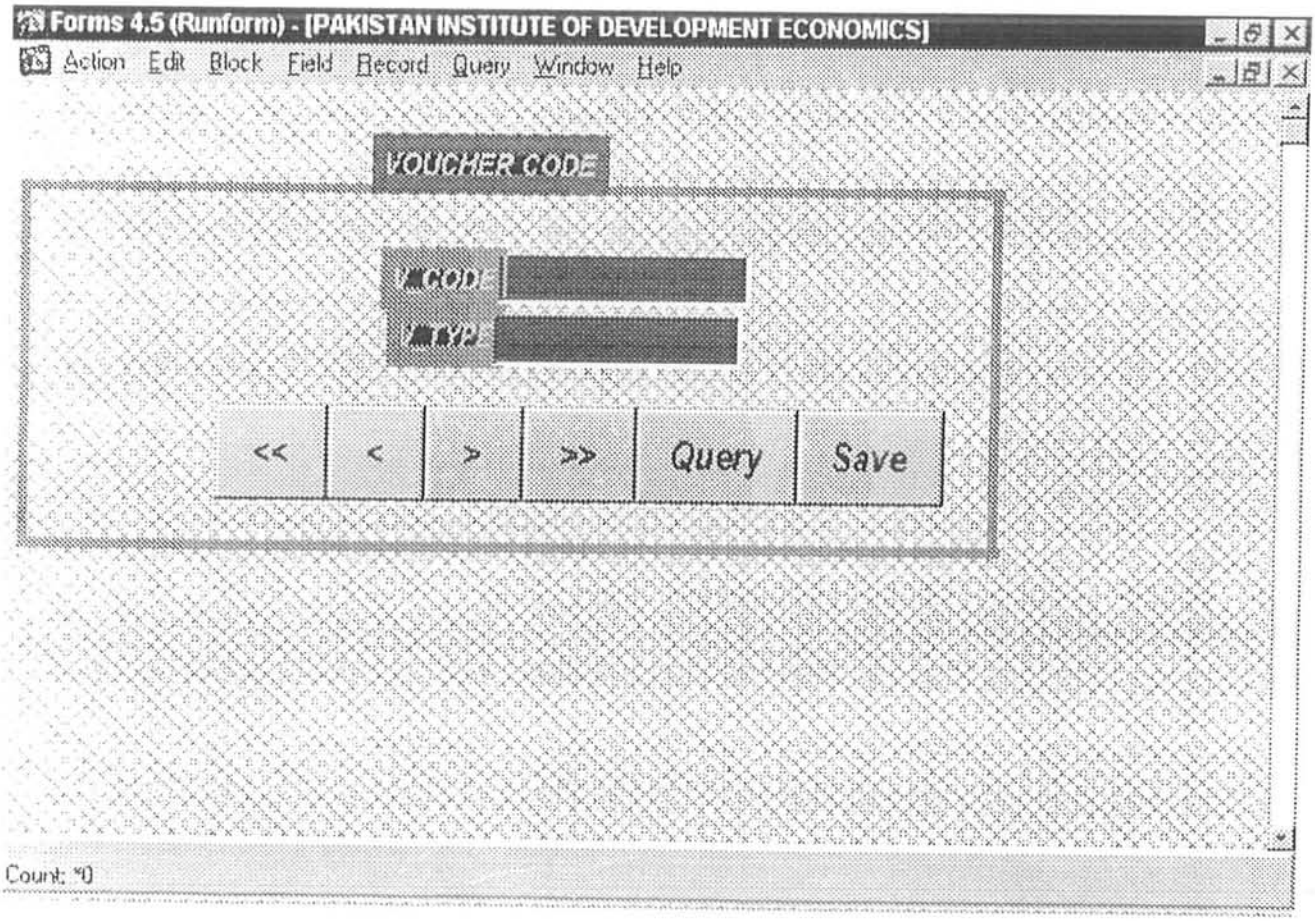

Forms 4.5 (Runform) - [PAKISTAN INSTITUTE DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
TRANSACTION CODE
TRANSACTION CODE 1
TRANSACTION NAME DB
<< < > >> Query Save
Count: 1

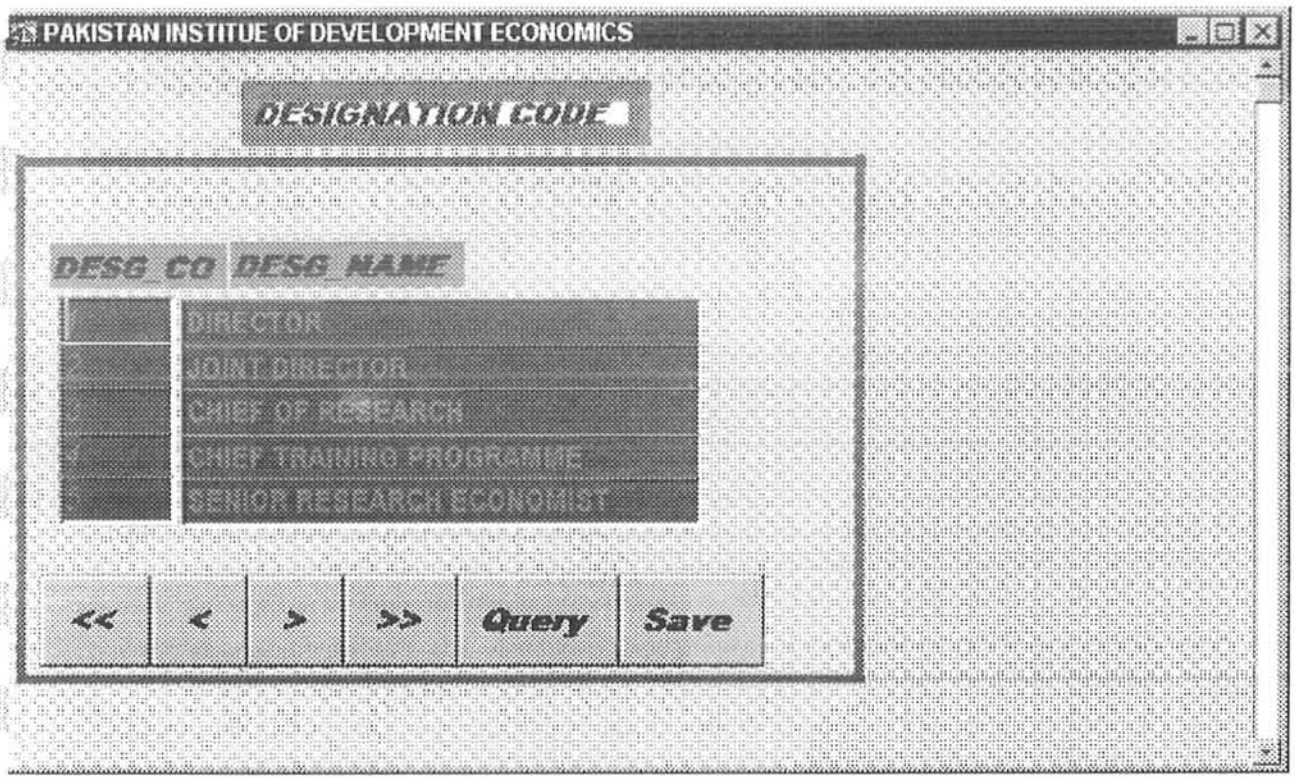

Forms 4.5 (Runform) - [PAKISTAN INSTITUTE DEVELOPMENT OF ECONOMICS]
Action Edit Block Field Record Query Help
BANK CODE 2
BANK NAME HABIB
<< < > >> Query Save
Count: 2


Forms 4.5 (Runform) - [PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
PARTY
PARTY CODE 2003
CITY CODE 1
Res Tel No 211658
Off Tel No 211721
<< < > >> Query Save EXIT
Count: 0


Forms 4.5 (Runform) - [PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
CITY
CITY CODE 1
CITY NAME ISLAMABAD
> Query << >> < Save
Count: 1


Forms 4.5 (Runform) - [PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
MASTER
OUCHER No
ENTERY NO
CHER CODE
CTION CODE
HEAD CODE
EMPLOY NO
OUNT CODE
ARTY CODE
BANK CODE
CHEQUE NO
AMMOUNT
ESCRIPTION
DATE
DATE
FRM-40350: Query caused no records to be retrieved.
Count: *0


Forms 4.5 (Runform) - [PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS]
Action Edit Block Field Record Query Window Help
VOUCHER CODE
V_CODE
V_TYP
<<
<
>
>>
Query
Save
Count: *0


PAKISTAN INSTITUE OF DEVELOPMENT ECONOMICS
DESIGNATION CODE
DESG_CO
DESG_NAME
DIRECTOR
JOINT DIRECTOR
CHIEF OF RESEARCH
CHIEF TRAINING PROGRAMME
SENIOR RESEARCH ECONOMIST
<<
<
>
>>
Query
Save

APPENDIX B

PAKISTAN INSTITUE OF DEVELOPMENT ECONOMICS ISLAMABAD

DATE: 14 MARCH , 1998 PAGE-No: 1

REPRTS ABOUT DIFFERENT HEADS FOR THE MONTH OF FEB, 1998

S-NO	HEAD CODE	HEAD DESCRIPTION	CRIDET	DEBIT	BALANCE
1.	07090	SAMINARS	57689.00	54567.00	3122.00
2.	06030	ENDOWMENT FUND EARINGS	34567.00	30245.00	4331.00
3.	08110	PRIVEDENT FUND	120456.00	102345.00	18111.00
4.	05220	REGIONAL STUDY ON DROP-OUT OF PRIMARY EDUCATION	10230.00	8903.00	1327.00
5.	07350	PETTY CASH	53467.00	50900.00	2567.00
6.	08010	SALARIES	523445.00	510678.00	12767.00
7.	08060	TA/DA (ON TOUR/TRAVELLING EXPANSES)	34000.00	23500.00	10500.00
8.	05200	STUDY ON "ECONOMIC VALUATION OF THE SALINATION	5200.00	5000.00	200.00

GRAND CREDIT TOTAL : 839054.00 GRAND DEBIT TOTAL : 786138.00 GRAND BALANCE : 52916

COMPUTER DIVISION PIDE

DAILY DATA ENTRY PROOF REPORT.

S-NO	VOUCHER NUMBER	VOUCHER ENTRY	VOUCHER TYPE	EMPLOYEE-ID NUMBER	PARTY CODE	HEAD CODE	Cr/Db	CHECK NO.	DATE	BANK	AMOUNT
1.	00003	07	8	XX	XX	10870	DB				3000.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF SEPTEMBER 1995.										
2.	00003	08	8	XX	XX	10440	DB				12000.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF SEPTEMBER 1995.										
3.	00003	09	8	XX	XX	10140	DB				1000.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF SEPTEMBER 1995.										
4.	00003	10	8	XX	XX	07350	CR				53058.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF SEPTEMBER 1995.										
5.	00004	01	8	XX	XX	05200	DB				797.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF OCTOBER 1995.										
6.	00004	02	8	XX	XX	07090	DB				400.00
	DESCRIPTION:NBP PETTY CASH EXPENDITURE DURING THE MONTH OF OCTOBER 1995.										

TOTAL NUMBER OF CASES : 6

COMPUTER DIVISION PIDE

PAKISTAN INSTITUE OF DEVELOPMENT ECONOMICS ISLAMABAD

DATE: 14 MARCH , 1998

CASH BOOK REPORT FOR THE DATE:04/03/98

S-NO	VOUCHER NUMBER	PARTICULARS	HEAD CODE	AMOUNT	TOTAL
1.	00001	RECIEVED FROM F.E.S PAKISTAN OFFICE,IBD. ON A/C OF BALAMT OF FLT COSTS & R.RENT CHARGES OF PSDE CON, 94.15936 CHEQUE NO: 00213381 DATE: 30-06-95 HEAD DES : SAMINARS	07090	16152.00	16152.00
2.	00002	RECIEVED FROM DR.H.J.E R.F.E.S.IBD,ON A/C OF HOTAL BILL CHEQUE NO: 00213380 DATE: 30-06-95 HEAD DES : SAMINARS	07090	17500.00	33652.00
3.	00003	RECIEVED FROM IDBP. ON A/C OF BEING HALF YEARLY PROFIT FOR THE PERIOD ENDED 30-06-95 RECIEPT NO.15938. CHEQUE NO: 00178691 DATE: 03-07-95 HEAD DES : ENDOWMENT FUND EARNINGS	06030	594903.00	628555.19
4.	00003	RECIEVED FROM IDBP.ON A/C OF BEING HALF YEARLY PROFIT FOR THE PERIOD ENDED 30-06-95.RECIEPT NO:15938 CHEQUE NO: 00178691 DATE: 03-07-95 HEAD DES : PROVIDENT FUND	08110	872887.00	1501442.87
5.	00004	RECIEVED FRO IDBP.ON A/C OF BEING HALF YEARLY PROFIT FOR THE PERIOD ENDED 30-6-95. RECIEPT NO: 15939 CHEQUE NO: 00178692 DATE: 03-07-95 HEAD DES : ENDOWMENT FUNDS EARNINGS	06030	309090.00	1810533.00

DEBIT TOTAL : 50000.00 CREDIT TOTAL : 1810533.47 BALANCE : 1760533.47

GRAND DEBIT TOTAL : 50000.00 GRAND CERDIT TOTAL : 1810533 GRAND BALANCE : 1760533.47

COMPUTER DIVISION PIDE

PAKISTAN INSTITUTE DEVELOPMENT OF PAKISTAN

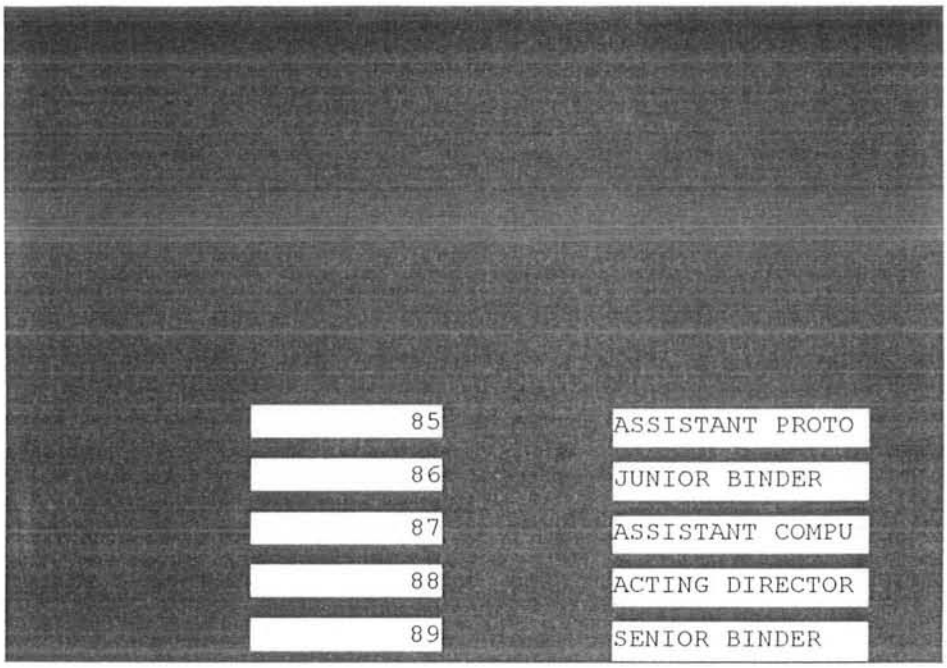
DESIGNATION REPORT

1 29-MAR-98

DESIGNATION CODE	DESIGNATION DESC
1	DIRECTOR
2	JOINT DIRECTOR
3	CHIEF OF RESEAR
4	CHIEF TRAINING
5	SENIOR RESEARCH
6	SENIOR RESEARCH
7	SENIOR FACULITY
8	DEPUTY SECRETAR
9	ASSUSTABT SECRE
10	RESEARCH ECONOM
11	RESEARCH DEMOGR
12	STAFF ECONOMIST
13	STAFF DEMOGRAPH
14	ASSOCIATE STAFF
15	ASSOCIATE STAFF
16	ASSISTANT FACUL
17	TECHNICAL ASSIS
18	COMPUTER PROGRA
19	ASSOCIATE COMOP
20	COMPUTER OPERAT
21	KEY PUNCH OPERA
22	LIBRARIAN
23	SENIOR DOCUMENT
24	JOINT LIBRARIAN
25	DOCUMENTATION O
26	ASSISTANT LIBRA
27	LIBRARY ASSISTA
28	LIBRARY ATTENDE

29	SENIOR PUBLICAT
30	PUBLICATIONS OF
31	ASSISTANT PUBLI
32	PRODUCTION ASSI
33	SENIOR TRANSPOR
34	SENIOR ACCOUNT
35	SENOIR ESTABLIS
36	ESTABLISHMENT O
37	PRIVATE SECRETA
38	SUPERINTENDENT
39	PROTOCOL OFFICE
40	PERSONAL ASSIST
41	SN,STORES & PUR
42	SENIOR PROTOCOL
43	STENOTYPIST
44	ASSISTANT
45	TELEPHONE OPERA
46	SENIOR GESETNER
47	GESTETNER OPERA
48	SENIOR ELECTRIC
49	ELECTRICIAN
50	CLERK
51	TYPIST
52	TYPIST/CLERK
53	SENOIR DRIVER
54	DRIVER
55	RECORD KEEPER
56	PLUMBER

57	DAFTARY
58	NAIB QUASID
59	NAIB QUASID/MAL
60	SENIOR/HEAD CHO
61	CHOWKIDAR
62	RESIDENCE ORDER
63	SANITARY WORKER
64	SANITARY SUPERV
65	SECRETARY
66	ACTING SECRETAR
67	ACTING DEPUTY S
68	LITERARY EDITOR
69	DATA CONTROL AS
70	TELEPHONE SUPER
71	SR. PRODUCTION
72	STENOGRAPHER
73	DEPUTY CHIEF LI
74	SENIOR COMPUTER
75	STAFF ANTHROPOL
76	ASSOCIATE STAFF
77	DEPUTY CHIEF LI
78	FARASH
79	NAIB QUASID/ORD
80	PUBLICATION ASS
81	SENIOR RESEARCH
82	FACULTY MEMBER
83	RESEARCH ANTHRO
84	REPRODUCTION AS


85
ASSISTANT PROTO
86
JUNIOR BINDER
87
ASSISTANT COMPU
88
ACTING DIRECTOR
89
SENIOR BINDER

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

PARTY REPORT

30-MAR-98

PARTY-CODE	CITY-CODE	RESIDENCE- TEL-NO	OFFICE TELEPHONE NO
2003	2	500310	829603
2004	1	456789	234562
2001	2	630915	630859
2002	1	211658	211600

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   Addison-Wesley Publishing Company.

2. Scott Urman

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   Osborne McGram-Hill.

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   Release 4.5 Vol | & ||.

4 Building Reports Manual

   Release 2.5.

5 Steven M.Bobrowski.

   Mastering ORACLE 7 & Client/Server Computing.

   Release 7.1.