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ACCOUNTS MANAGEMENT SYSTEM
FOR
PRIVATE POWER AND INFRASTRUCTURE BOARD

BY
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Muhammad Nauman Khan
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Preface

This report presents a detailed study, design and implementation phases of the project carried out for the Accounts Department, Private Power and Infrastructure Board. This development has gone through a series of sequential steps to shape to its final form which are explained by the following chapters included in this report.

Chapter 1 provides an introduction to the organization and specifies the scope of the system. Chapter 2 describes the new proposed system.

Chapter 3 discusses the design of the system. It includes details like input, output along with their working and database design with constraints placed on the fields. Chapter 4 explains how the system was realized as a working system. It also describes the testing and implementation of the system.

Chapter 5 evaluates the merits and demerits of the system and also gives the precautions, recommendations and future enhancements for the developed system which indicates its ability to grow and adapt to the changing needs of the organization.

Appendices include:

Appendix A which contains Data Flow Diagrams.

Appendix B which contains Data Dictionary and Data Structures.

Bibliography contains some of the books and references consulted during the project.

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CHAPTER 1

INTRODUCTION

1.1 Introduction of the Organization

One of the key features of the new energy policy for attracting investment for Power generation and allied infrastructure projects was the introduction of a “one window” operation at the federal Government level. Accordingly a Private Power and Infrastructure Board (PPIB) was created by revamping and reorganizing the Private Power Cell of the Ministry of Water and Power. The Board is an inter-ministerial Board, headed by the Special Assistant to the Prime Minister for Economic sectors, and has representation at the Secretary level from all economic sector ministries. The formation of PPIB was formally ratified in July 1994.

The main functions of Board are to act as a one stop organization on behalf of all the Ministries, Departments and agencies of the Government of Pakistan in matters relating to the setting up of power projects in the private sector, to negotiate and finalize with perspective developers the Implementation Agreement, Power Purchase Agreement, Fuel Supply Agreement and other related agreements and to make payments if any, due thereunder, and to correspond and liase with concerned local and international agencies to facilitate and expedite the progress of private sector projects. In addition the Board is also responsible for formulating, reviewing and updating policies and procedures relating to private sector investments in power generation and allied infrastructures.

PPIB is being organized and managed by a dynamic team of professionals. There are five departments of the organization:

- ◆ Project
- ◆ Administration and Personnel
- ◆ MIS
- ◆ Legal
- ◆ Finance and Accounts

ORGANIZATIONAL CHART



1.2 Problem Definition

In a broad sense Finance and Accounts department handles the following four tasks:

- ◆ Investment in Banking
- ◆ Journal and Ledger Maintenance.
- ◆ Payroll or Salary.
- ◆ Budget Control

Investment in Banking:

Although PPIB comes under the Ministry of Water and Power, the Government of Pakistan does not finance it, instead it has to generate money from its own resources.

PPIB earns money needed for its operation through investments made by it. Presently two types of investments are made by it:

1. Investments are made in Regular Income Certificates (RIC) in the National Savings Schemes.
2. Investments are made in U.S. Dollar Bonds. Profit is taken after the profit period at the rate of London Inter-bank Borrowing Rate + 4%.

After the maximum tenure RIC or U.S. Dollar Bond is reinvested. If it gets en-cashed before minimum tenure then the profit taken had to be returned.

A profit control statement is made to keep record of existing investments made by PPIB.

Journal and Ledger Maintenance

Journal and Ledger play a very important role in any company's accounts maintenance. Journal is used for maintaining daily transactions. After entry into the Journal, these transactions can further be posted into Ledger at any time. Ledger is used for making financial statements like Balance of Accounts, making Balance Sheet, Income Statement for keeping record of revenue earned by the company and expenses incurred by the company. Ledger is maintained through Windaceasy.

Vouchers of all the Payables are also made before recording into the Ledger. These vouchers are made in Lotus.

Payables include:

- ◆ Utility Bills (Gas, Water, Electricity, Telephone, Internet etc.)
- ◆ Medical Charges
- ◆ Stationery Charges
- ◆ Furniture Buying and Maintenance Charges
- ◆ Computer Buying and Maintenance Charges

- ◆ Vehicle Buying and Maintenance Charges
- ◆ Refreshment Charges
- ◆ Travelling Charges
- ◆ Building Rent etc.

Payroll or Salary

Payroll or Salary is also part of any Accounting system.

Monthly salary consists of different type of credits and debits. Sum of credits minus Sum of debits equals net salary for the month.

Credits include Arrears, Honourarium and Allowances.

Debits include income tax, P.O.L charges, Fax, telephone, Internet charges and recoveries.

Allowances are given designation wise. Some allowances are not given to junior posts. Allowances can be a fixed amount or some percentage of Basic pay. Different type of allowances are:

- ◆ House rent which is 45% of Basic pay
- ◆ Utilities which is 10% of Basic pay
- ◆ Conveyance allowance which is 10% of Basic pay
- ◆ Cost living allowance which is 7% of Basic pay
- ◆ Senior post allowance
- ◆ Foreign qualification allowance
- ◆ Entertainment allowance
- ◆ Personal staff subsidy

Every allowance has an income tax policy that is used for calculating income tax. All the above income tax calculations are done manually.

Monthly salary report, Monthly Tax summary is also made. These are made in Lotus.

In addition to the salary Employee's Medical reimbursement, Employee's Overtime, Employee's Leave reimbursement, Employee's Financial Power Bills also come under this.

Overtime is not allowed to senior designations.

Five types of leaves are present at this time which are Annual, Casual, Sick, Maternity, and Leavewithoutpay. Some of these have a fixed limit and only Annual Leaves are Encashable. Some of these leaves are counted at Annual year and some at Fiscal Year.

Employees from Managing Director to Senior Project Managers have some Financial powers, which they can use for approval of a bill. There are fixed powers per voucher, some are fixed monthly and some are Full powers (usually for Managing Director).

Budget Control

Budget is made at the beginning of the Fiscal Year, which starts in July and ends in June. Budget is also made for each of the departments. Monthly budget is also made. Whenever a budget control request is made it is checked against the monthly budget allocation for corresponding head and the request is then replied accordingly. Budget re-appropriation is also done which means that if one of the budget head's quota of allocation gets exhausted, then its allocation can be added by subtracting some amount from some other head. Budget allocation can also be adjusted in the next month's allocation. Invalid requests can also be returned.

Yearly budget allocation is made. Department wise yearly budget allocation is made. Monthly budget allocation is made. Reports are made for each of the above allocations. Budget comparison report is also made. These reports are presently made through Excel.

1.3 Problems in the Existing System

Following are some of the problems in the existing system:

- ◆ Manual record keeping of Investments and Profit control is very difficult time, space and effort consuming.
- ◆ Maintenance of Ledger accounts through Windaceasy requires a lot of effort and time consumption.
- ◆ Balance of all Ledger accounts at all levels needs to be maintained manually in Windaceasy.i.e.user had to calculate it himself and then change it.
- ◆ Manual calculation of salary and income tax for every employee for every month is difficult and time consuming.
- ◆ Manual making of Ledger reports is difficult.
- ◆ Greater chances of errors due to manual work.
- ◆ No proper use of network already present.
- ◆ Different persons use different softwares for their needs.
- ◆ Not a user-friendly system.
- ◆ No online queries are available.
- ◆ Maintenance is difficult.
- ◆ Errors are not easy to detect.

1.4 Scope of the System

Before working on the system, it is necessary to clearly define the scope of the system, which facilitates the working, because in this way analysts are bounded and have to work within the desired boundaries. The scope of the project is to design an efficient and fast working system that helps the management in getting information on:

- ◆ Budget allocation of various departments.
- ◆ Budget allocation under different heads.
- ◆ Monthly and yearly comparisons.
- ◆ Income and expenses of the company.
- ◆ Investments made by the company.
- ◆ Monthly salary of the employees.

CHAPTER 2

PROPOSED SYSTEM

Everywhere in the world, computer is playing an important role in almost every sphere of life. It is being efficiently utilized by physicians, engineers, and teachers etc. Computer usage has also been encouraged in certain fields where existence seemed rather impossible. So, considering this fact, management at PPIB has decided to computerize the system for following reasons:

- ◆ To get up to date information of income of the company
- ◆ To get optimum performance from system
- ◆ To get results in faster way

Of course, the computer is programmed to perform a number of steps automatically. Procedures that involve both the analysis of business transactions and judgmental decisions as to accounts be debited or credited require human judgement, regardless of whether the data is processed manually or by computer. A computer-based system may call for recording transactions first in a database, rather than in a journal.

2.1 Advantages of Computer-based accounting systems

The primary advantage of computer is its incredible speed. The time needed for a computer to post a transaction or determine an account balance is but a few millionths of a second. This speed creates several advantages over manual accounting systems, including the following:

1. **Large amounts of data can be processed quickly and efficiently**
Businesses may engage in tens of thousands of transactions per day. In processing such a large volume of data, computers can save vast amounts of time in each step of the accounting process, including the recording of transactions, posting to ledger accounts, and preparing of accounting records, schedules, and reports.
2. **Account balances may be kept uptodate**
The speed with which the data may be processed by a computer enables businesses to keep subsidiary ledger accounts and most general ledger accounts continually uptodate.
3. **Additional information may be developed at virtually no cost**
A computer can also rearrange the information to show daily sales total for a sales department, or give information about a specific person's salary.

4. Instant feedback may be available as transactions are taking place

In online real-time computer systems, the employee executing a transaction may have a terminal, which is in direct communication with the server. Thus the employee has immediate access to accounting information useful in executing the current transaction.

2.2 Objectives of the proposed system

Following are some of the objectives of the proposed system:

- To provide record keeping and to answer to user queries.
- To avoid unnecessary effort and time consumption of transferring data to registers.
- Automatic calculation of balance of ledger accounts, payroll and budget comparisons.
- To avoid chances of errors due to unnecessary entries.
- To avoid use of multiple software and making a system which can benefit the network already present.
- To develop a maintainable system that can be easily enhanced as and when required.

CHAPTER 3

PROPOSED SYSTEM DESIGN

Design is the first step in the development phase for any engineered system. It is the process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Design is a goal-oriented decision making activity. The designer's goal is to produce a model or representation of an entity that will later be built. The process by which the model is developed combines intuition and judgement based on experience in building similar entities, a set of principles or heuristics that guide the way in which a model evolves and a process of iteration that ultimately leads to a final design representation. A system that is badly designed never results in an efficient system, irrespective of the effort put into it. The software design is the process through which requirements are translated into a representation of software. During design we make decisions that will ultimately affect the success of software construction and the ease with which software can be maintained.

3.1 OUTPUT DESIGN

Output design is basically concerned with what is presented to the user as output. Output guides the design. Output may either be in soft form (displayed on the screen) or in hard form (Printout). The output design of the proposed system consists of the following:

- ◆ Screen oriented output
- ◆ Printer oriented output

a) Screen oriented Output

1. Profit details of a U.S. Dollar Bond

Input criteria:

- ◆ Bond#

Output information:

- ◆ Profit due date
- ◆ Rate of profit
- ◆ Profit
- ◆ Profit returned

2. Profit details of a Regular Income Certificate**Input criteria:**

- ◆ RIC#

Output information:

- ◆ Profit due date
- ◆ Rate of profit
- ◆ Profit
- ◆ Profit returned

3. List of all invoices for a voucher**Input criteria:**

- ◆ Voucher#

Output information:

- ◆ Invoice#
- ◆ Date of issue
- ◆ Description
- ◆ Parts
- ◆ Services

4. List of Sub accounts for a ledger account at a certain level**Input criteria:**

- ◆ Account#
- ◆ Account level
- ◆ Account type

Output information:

- ◆ General subacct#
- ◆ General subacctname
- ◆ Detail subacct#
- ◆ Detail subacctname

5. List of leave requests by an employee**Input criteria:**

- ◆ Employee name
- ◆ Leave type

Output information:

- ◆ From

- ◆ To
- ◆ Address while on leave
- ◆ Telephone number while on leave

6. List of overtime requests by an employee

Input criteria:

- ◆ Employee name

Output information:

- ◆ Date
- ◆ Time in
- ◆ Timeout

7. List of medical charges requests by an employee

Input criteria:

- ◆ Employeename

Output information:

- ◆ Cashmemo
- ◆ Person who received the treatment
- ◆ Relationship with the claimant
- ◆ Amount
- ◆ Memodate

8. List of financial power bills of an employee

Input criteria:

- ◆ Employeename
- ◆ Designation
- ◆ Powerhead

Output information:

- ◆ Billingdate
- ◆ Billnumber
- ◆ Amount

9. List of Budget control requests for a month

Input criteria:

- ◆ Fiscalyear
- ◆ Budgethead
- ◆ Department
- ◆ month

Output information:

- ◆ Particulars of transaction
- ◆ Amount
- ◆ Requested by
- ◆ Allocationcondition
- ◆ Allocated by

10. Yearly Budget Allocation for a certain head**Input criteria:**

- ◆ Fiscalyear
- ◆ Budgethead

Output information:

- ◆ Amountallocated
- ◆ Amountspent

11. Departmentwise Yearly Budget Allocation for a certain head**Input criteria:**

- ◆ Fiscalyear
- ◆ Budgethead
- ◆ Department

Output information:

- ◆ Amountallocated
- ◆ Amountspent

12. Monthly Budget Allocation for a certain head**Input criteria:**

- ◆ Fiscalyear
- ◆ Budgethead
- ◆ Department
- ◆ Month

Output information:

- ◆ Amountallocated
- ◆ Amountspent

b) Printer oriented Output

1. Profit control statement for U.S.Dollar Bonds

Output information:

- ◆ Bond#
- ◆ Investmentdate
- ◆ Tenure
- ◆ Facevalue
- ◆ Encashmentdate
- ◆ Profit
- ◆ Profit due date
- ◆ Physicallocation

2. Profit control statement for Regular Income Certificates

Output information:

- ◆ Ric#
- ◆ Investmentdate
- ◆ Tenure
- ◆ Facevalue
- ◆ Encashmentdate
- ◆ Profit
- ◆ Profit due date
- ◆ Physicallocation

3. Toplevel chart of accounts

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Acctype

4. Level2 chart of accounts for Detail accounts

Output information:

- ◆ Referenceacct#
- ◆ Referenceacctname
- ◆ Subacct#
- ◆ Subacctname

5. Level2 chart of accounts for General accounts**Output information:**

- ◆ Referenceacct#
- ◆ Referenceacctname
- ◆ Subacct#
- ◆ Subacctname

6. Level3 chart of accounts for Detail accounts**Output information:**

- ◆ Referenceacct#
- ◆ Referenceacctname
- ◆ Subacct#
- ◆ Subacctname

7. Level3 chart of accounts for General accounts**Output information:**

- ◆ Referenceacct#
- ◆ Referenceacctname
- ◆ Subacct#
- ◆ Subacctname

8. Level4 chart of accounts for Detail accounts**Output information:**

- ◆ Referenceacct#
- ◆ Referenceacctname
- ◆ Subacct#
- ◆ Subacctname

9. Toplevel accounts balance**Output information:**

- ◆ Acct#
- ◆ Acctname
- ◆ Acctype
- ◆ Debit
- ◆ Credit

10. Level2 Detail accounts balance

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Debit
- ◆ Credit

11. Level2 General accounts balance

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Debit
- ◆ Credit

12. Level3 Detail accounts balance

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Debit
- ◆ Credit

13. Level3 General accounts balance

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Debit
- ◆ Credit

14. Level4 Detail accounts balance

Output information:

- ◆ Acct#
- ◆ Acctname
- ◆ Debit
- ◆ Credit



15. Employees Salary Report by Year, Month**Output information:**

- ◆ Employee name
- ◆ Department
- ◆ Designation
- ◆ Month
- ◆ Year
- ◆ Basic pay
- ◆ Arrears
- ◆ Honourarium
- ◆ Recoveries
- ◆ Net salary

16. Employees Allowances Report by Year, Month**Output information:**

- ◆ Employee name
- ◆ Department
- ◆ Designation
- ◆ Month
- ◆ Year
- ◆ Allowance name
- ◆ Amount

17. Employees Debits Report by Year, Month**Output information:**

- ◆ Employee name
- ◆ Department
- ◆ Designation
- ◆ Month
- ◆ Year
- ◆ Debit description
- ◆ Amount

18. Yearly Budget Report by Fiscal Year**Output information:**

- ◆ Budget head
- ◆ Allocated amount
- ◆ Spent amount

19. Headwise Yearly Budget Report by Fiscal Year, Department**Output information:**

- ◆ Budgethead
- ◆ Departmentname
- ◆ Allocatedamount
- ◆ Spentamount

20. Monthly Budget Report by Fiscal Year, Month**Output information:**

- ◆ Budgethead
- ◆ Allocatedamount
- ◆ Spentamount
- ◆ Balance

21. Budget comparison Report for two Fiscal Years**Output information:**

- ◆ Fiscalyear
- ◆ Budgethead
- ◆ Allocatedamount
- ◆ Spentamount

3.2 INPUT DESIGN

Input design is as much important for any information system as its output design. It also determines the generation of correct or erroneous information. Different methods are used for input design.

CODE DESIGN

A code is a small combination of characters used to represent a large data item. Codes are used when there is a chance of entering incorrect information. The present system uses following codes:

- ◆ Ricpolicycode
- ◆ Bondpolicycode
- ◆ Partspolicycode
- ◆ Servicespolicycode
- ◆ Journalcode
- ◆ Employeecode
- ◆ Debitcode

- ◆ Desginationcode
- ◆ Allowancecode
- ◆ Departmentcode
- ◆ Leavecode
- ◆ Powerheadcode
- ◆ Budgetheadcode
- ◆ Budget code

ENTRY FORMS DESIGN

Various input forms have been designed for correct entry of information. Different forms designed for this purpose are:

- ◆ Bondforms
- ◆ Certificateforms
- ◆ Voucherforms
- ◆ Transactionforms
- ◆ Employeeleaveforms
- ◆ Overtimeforms
- ◆ Employeemedicalforms
- ◆ Employeefinancialpowerbillforms
- ◆ Budgetcontrolforms
- ◆ Journalforms
- ◆ Ledgerforms
- ◆ Departmentforms
- ◆ Designationforms
- ◆ Payrolldebitforms
- ◆ Allowanceforms
- ◆ Taxpolicyforms
- ◆ Taxlimitsand credits forms
- ◆ Leavepolicyforms
- ◆ Financialpowerheadsforms
- ◆ Employee's salaryforms
- ◆ Budgetheadforms
- ◆ Yearrbudgetforms
- ◆ Departmentwisemonthlybudgetforms
- ◆ Departmentwiseyearlybudgetforms

3.3 FILE DESIGN

File Design is concerned with how data is organized into files. In a relational database data is organized into tables. Each table consists of fields. A table can have fields that can be used to identify the rows of the table called key fields. Key fields can be used to form a link to some other table so that related information can be linked together. This technique of design is called database design. A diagram called Bachmann Diagram usually represents it.

BACHMANN DIAGRAM

It tells the fields in the table, key fields and links of a table with the other tables.

RIC POLICY

<u>PolicyCode</u>	MinimumTenure	MaximumTenure	RateofProfit	ProfitPeriod
-------------------	---------------	---------------	--------------	--------------

RIC MASTER

<u>Ric#</u>	Investment Date	FaceValue	PhysicalLocation	Encashed	EncashmentDate	PolicyCode
-------------	-----------------	-----------	------------------	----------	----------------	------------

RIC DETAIL

<u>Ric#</u>	Profit due date	Profit	Profit_ret
-------------	-----------------	--------	------------

BOND POLICY

<u>PolicyCode</u>	MinimumTenure	MaximumTenure	ProfitPeriod
-------------------	---------------	---------------	--------------

BOND MASTER

<u>Bond#</u>	Investmentdate	FaceValue	PhysicalLocation	Encashed	EncashmentDate	RateofProfit	PolicyCode
--------------	----------------	-----------	------------------	----------	----------------	--------------	------------

BOND RATES

<u>Bond#</u>	Profit due date	RateofProfit
--------------	-----------------	--------------

BOND DETAIL

<u>Bond#</u>	Profit due date	Profit	Profit ret
--------------	-----------------	--------	------------

PARTSPOLICY

<u>PolicyCode</u>	TaxRate
-------------------	---------

SERVICESPOLICY

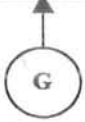
<u>PolicyCode</u>	TaxRate
-------------------	---------

VOUCHER MASTER

<u>Voucher#</u>	NamePayee	AdressPayee	LessDiscount	PartsPolicyCode	ServicesPolicyCode
-----------------	-----------	-------------	--------------	-----------------	--------------------

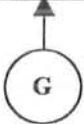
VOUCHER DETAIL

<u>Voucher#</u>	Invoice#	DateofIssue	Description	Parts	Services
-----------------	----------	-------------	-------------	-------	----------



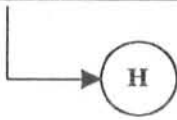
VOUCHER AMOUNT

<u>Voucher#</u>	Taxwithheld	Netpaid
-----------------	-------------	---------



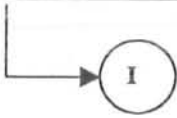
JOURNAL INFO

<u>Journal code</u>	Journal_Name
---------------------	--------------



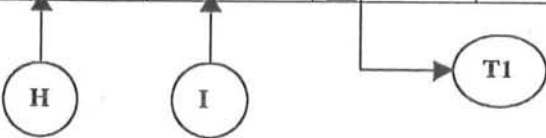
ACCOUNT INFO

<u>Acct#</u>	Acct_name
--------------	-----------



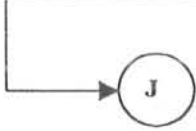
TRANSACTION INFO

<u>Journal_c ode</u>	<u>Acct#</u>	<u>Transactio n#</u>	Transaction Date	Debit	Credit	Posted
--------------------------	--------------	--------------------------	---------------------	-------	--------	--------



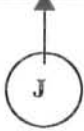
TOPLEVEL GENERAL MASTER

<u>Acct#</u>	Acct_name	Acct_type
--------------	-----------	-----------



TOPLEVEL GENERAL BALANCE

<u>Acct#</u>	Debit	Credit
--------------	-------	--------



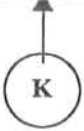
LEVEL2 GENERAL MASTER

<u>Pacct#</u>	<u>Acct#</u>	Acct_name
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LEVEL2 GENERAL BALANCE

<u>Acct#</u>	Debit	Credit
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LEVEL2 DETAIL MASTER

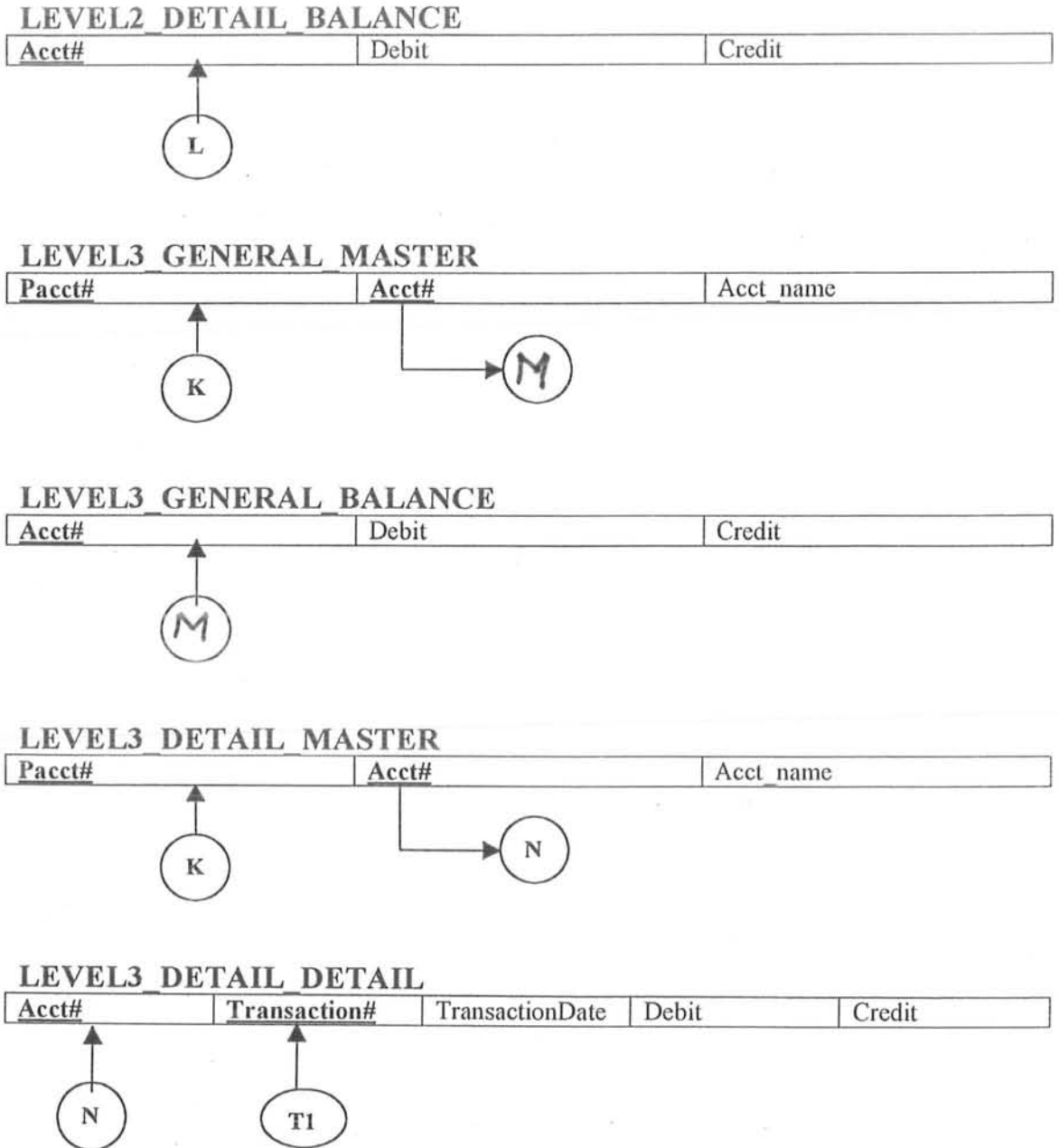
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LEVEL2 DETAIL DETAIL

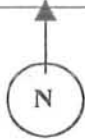
<u>Acct#</u>	<u>Transaction#</u>	TransactionDate	Debit	Credit
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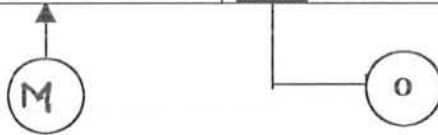
LEVEL3 DETAIL BALANCE

<u>Acct#</u>	Debit	Credit
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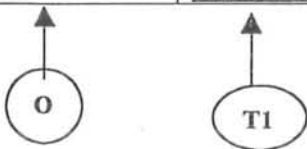
LEVEL4 DETAIL MASTER

<u>Pacct#</u>	<u>Acct#</u>	Acct name
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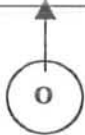
LEVEL4 DETAIL DETAIL

<u>Acct#</u>	<u>Transaction#</u>	TransactionDate	Debit	Credit
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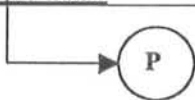
LEVEL4 DETAIL BALANCE

<u>Acct#</u>	Debit	Credit
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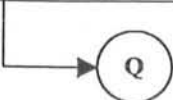
DEPARTMENTS

<u>Department code</u>	Department name
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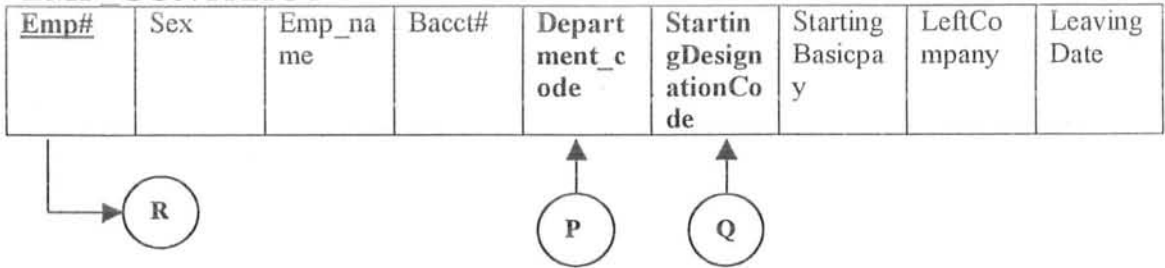


DESIGNATIONS

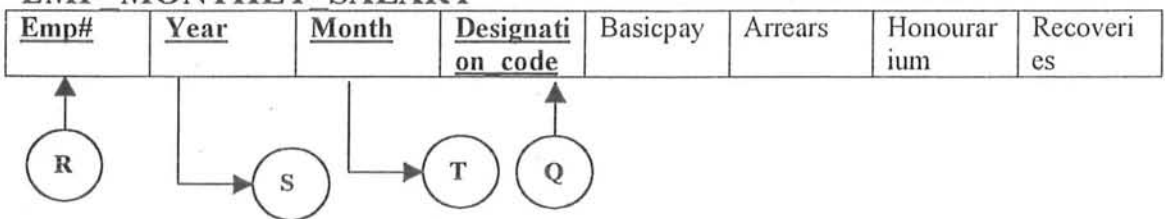
<u>Designation cod</u>	Designation	OvertimeAllowe	Finished	FinishingDate
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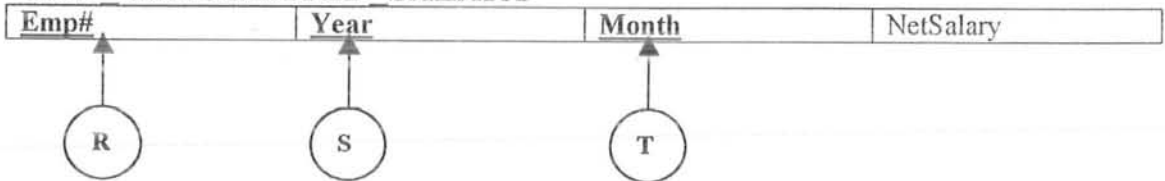
EMP CONTRACT



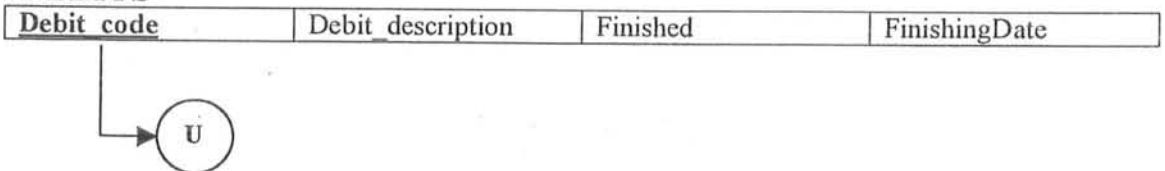
EMP MONTHLY SALARY



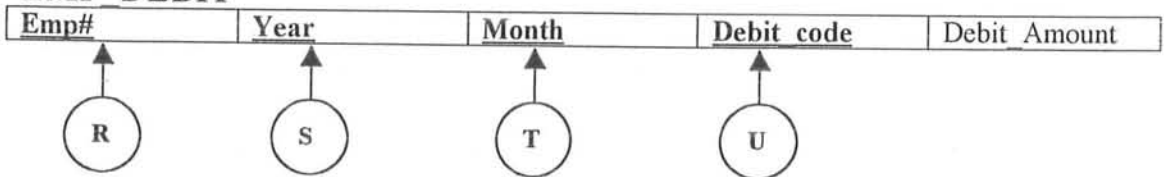
EMP CALCULATED SALARY



DEBITS

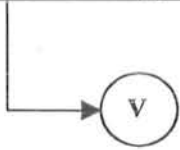


EMP DEBIT



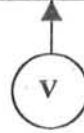
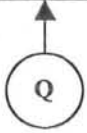
ALLOWANCE POLICY

<u>Allow_code</u>	Allow_descri ption	Rate	Percentage	Finished	FinishingDate
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DESIGNATION WISE ALLOWANCE

<u>Designation_code</u>	<u>Allow_code</u>
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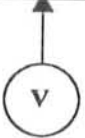
INCOME TAX POLICY BELOW 300000

<u>Allow_c ode</u>	Exempt ed	Include d	Fullallo wance	Percenta ge	Rate	Amount	Change d	Changin gDate
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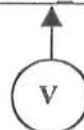
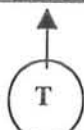
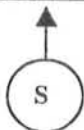
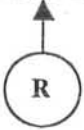
INCOME TAX POLICY ABOVE 300000

<u>Allow_c ode</u>	Exempt ed	Include d	Fullallo wance	Percenta ge	Rate	Amount	Change d	Changin gDate
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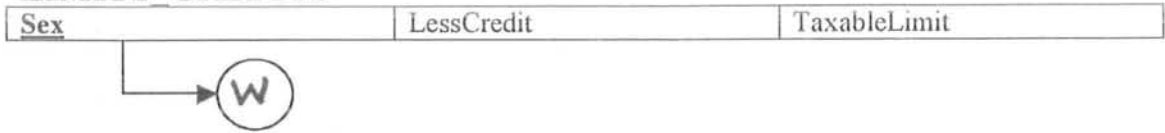


EMP ALLOWANCE AMOUNT

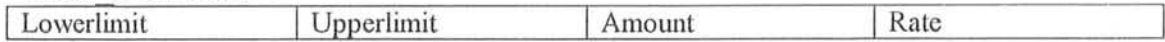
<u>Emp#</u>	<u>Year</u>	<u>Month</u>	<u>Allow_code</u>	Amount
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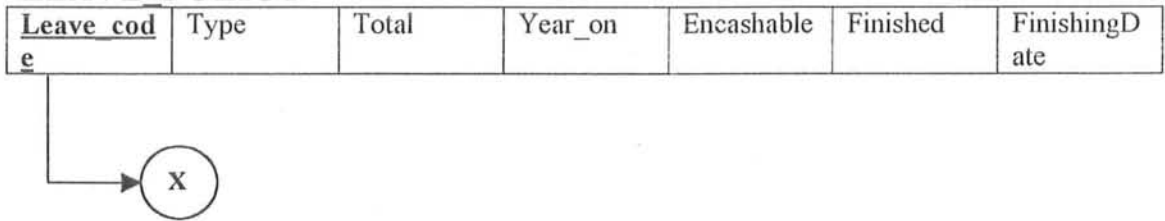
LIMITS CREDITS



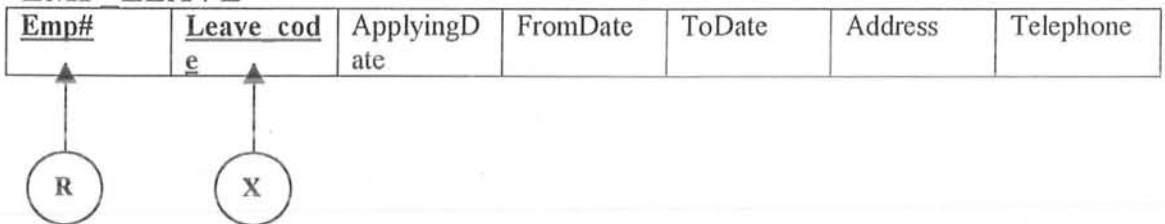
TAX POLICY



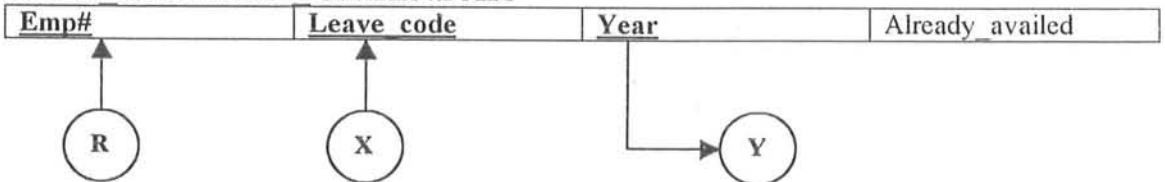
LEAVE POLICY



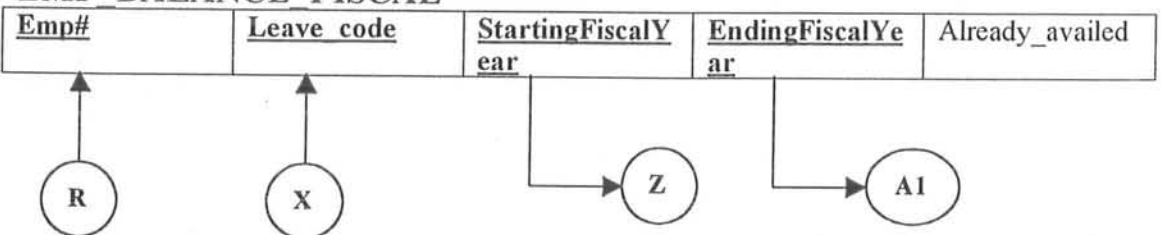
EMP LEAVE

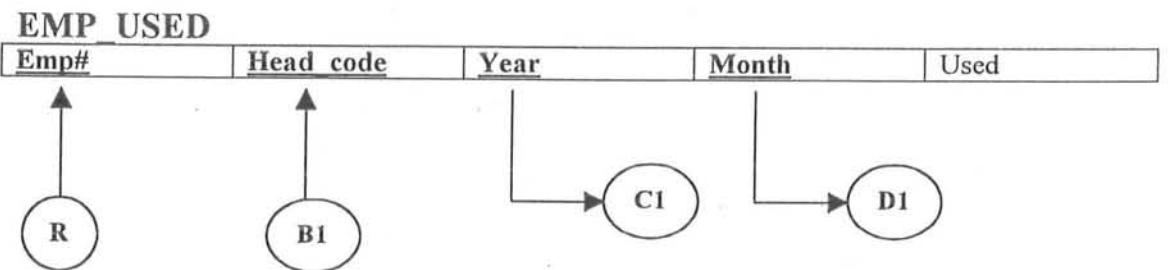
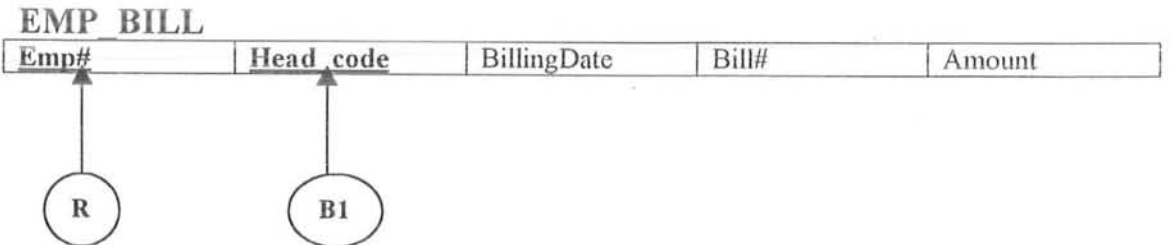
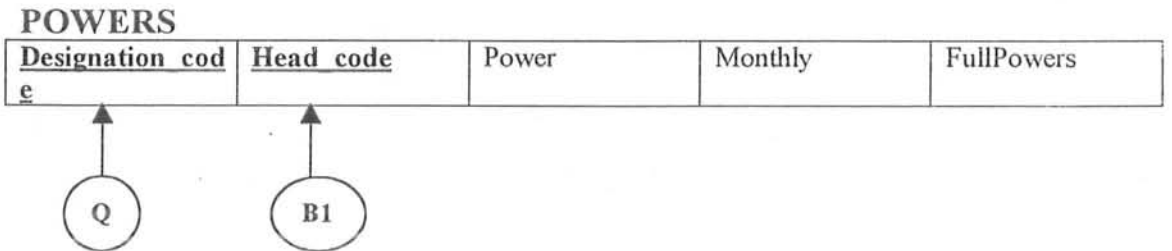
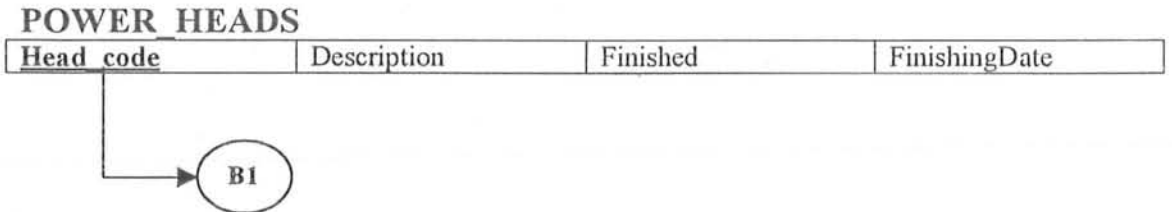
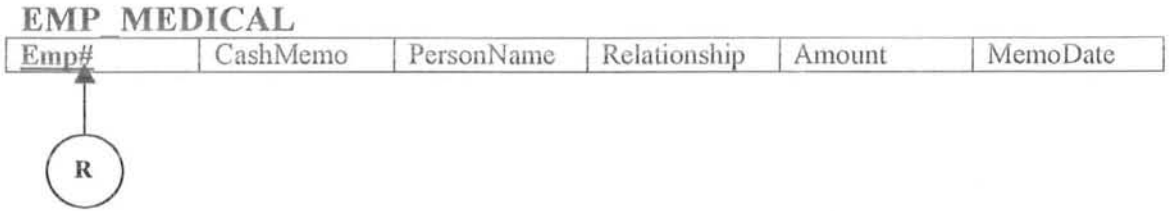


EMP BALANCE CALENDAR



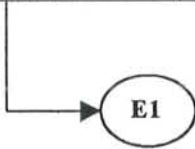
EMP BALANCE FISCAL





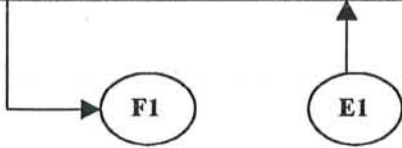
BUDGET HEADS

<u>Bhead code</u>	Description	Finished	FinishingDate
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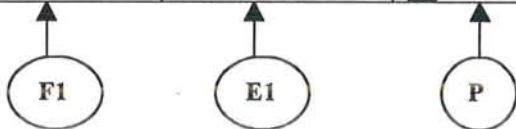
YEARLY BUDGET

<u>Budget code</u>	<u>Bhead code</u>	Amount_allocated	Amount_spent
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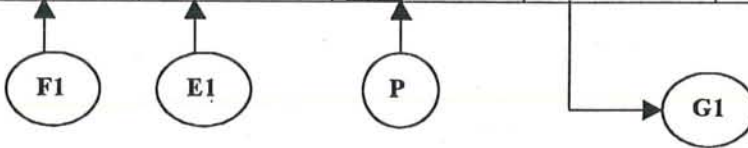
BUDGET DETAIL

<u>Budget code</u>	<u>Bhead code</u>	<u>Department code</u>	Amount_allocated	Amount_spent
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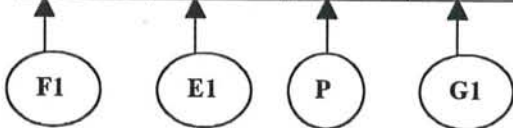
DEPARTMENT MONTH ALL

<u>Budget code</u>	<u>Bhead code</u>	<u>Department code</u>	<u>Month</u>	Allocated	Spent
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BC-2 FORM

<u>Budget code</u>	<u>Bhead code</u>	<u>Department code</u>	<u>Month</u>	Description	Amount	Requested by	Allocated	Allocated by
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CHAPTER 4

SOFTWARE DEVELOPMENT

After the system has been designed, the software development phase begins. The software is developed to meet the proposed system specification. The project contains two types of programs:

- ◆ One, which takes, input from the user and store that input in the tables. These form the front-end of software and are developed using Microsoft Visual Basic 6.0
- ◆ Other type of programs are different type of procedures which are invoked by the front-end tool and also triggers which are invoked automatically whenever a database transaction takes place in any table. These are back-end programs. Database tables and these programs are made in Microsoft SQL Server 7.0 and are written using the Structured Query Language.

During the development phase testing of the system is also done and personnel are trained to make this software operational.

4.1 Software Selection

The choice of the software is very important and because of various facilities provided by different languages and packages and keeping in view the cost as an important factor also Microsoft Visual Basic 6.0 and Microsoft SQL Server 7.0 were already chosen as a requirement for front-end and back-end programming respectively.

PPIB has purchased Microsoft SQL Server 7.0 and Microsoft Visual Basic 6.0 from Microsoft and hence developer has to choose these tools for development.

4.2 Table Design

The data in Microsoft SQL Server is stored in tables that contain columns or fields. Each field is reserved for a particular data type that is decided upon table creation. The tables are designed in such a way that redundancies are minimized and faster data retrieval is possible.

While designing tables following were the considerations:

- ◆ Each table should be indexed wherever possible for fast data retrieval.
- ◆ Each field should be long enough to contain complete information.
- ◆ Unnecessary fields should not be defined.
- ◆ The type of field must match the actual data.

The specifications of different tables are as follows:

Table Number: 1
Table Name: RIC_POLICY
Purpose: Stores the policy for Regular Income Certificates
Primary Key: PolicyCode

Field Name	Type	Width	Constraint	Description
PolicyCode	Numeric	3	Not Null	Policy code
MinimumTenure	Numeric	4	Not Null	Minimum number of months before which Certificate cannot be Encashed
MaximumTenure	Numeric	4	Not Null + Must be greater than Minimum Tenure	Maximum number of months after which Certificate will be Encashed
Rateof Profit	Decimal	4,2	Not Null	Rate of Profit for Certificate
ProfitPeriod	Numeric	2	Not Null + Must be less than the Maximum Tenure	Numer of months after which profit will be received

Table Number: 2
Table Name: RIC_MASTER
Purpose: Stores the Investment information for Regular Income Certificates
Primary Key: Ric#
Foreign Key: PolicyCode

Field Name	Type	Width	Constraint	Description
Ric#	Char	20	Not Null	Regular Income Certificate number
InvestmentDate	Datetime	-	Not Null	Investment Date for Ric

FaceValue	Decimal	12,2	Not Null	Face value for Ric
Physical Location	Char	20	Not Null	Physical Location where Ric is Placed
Encashed	Bit	-	Not Null	
EncashmentDate	Datetime	-	Must be greater than InvestmentDate	Date at which Ric is Encashed
PolicyCode	Numeric	3	Not Null	Policy Identifier

Table Number: 3

Table Name: RIC_DETAIL

Purpose: Stores the Profit details for Regular Income Certificates

Primary Key: Ric#

Foreign Key: Ric#

Field Name	Type	Width	Constraint	Description
Ric#	Char	20	Not Null	Regular Income Certificate number
Profit_due_date	Datetime	-	Not Null	Date on which profit gets due
Profit	Decimal	12,2	Not Null	
Profit_ret	Bit	-	Not Null	Determines whether Profit is returned or not

Table Number: 4

Table Name: BOND_POLICY

Purpose: Stores the policy for U.S.Dollar Bonds

Primary Key: PolicyCode

Field Name	Type	Width	Constraint	Description
PolicyCode	Numeric	3	Not Null	Policy code
MinimumTenure	Numeric	4	Not Null	Minimum number of months before which Bonds cannot be Encashed
MaximumTenure	Numeric	4	Not Null + Must be greater than Minimum Tenure	Maximum numberofmonths after whichbonds willbe Encashed

ProfitPeriod	Numeric	2	Not Null + Must be less than the Maximum Tenure	Numer of months after which profit will be received
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Table Number: 5

Table Name: BOND_MASTER

Purpose: Stores the Investment information for U.S.Dollar Bonds

Primary Key: Bond#

Foreign Key: PolicyCode

Field Name	Type	Width	Constraint	Description
Bond#	Char	20	Not Null	U.S.Dollar Bond number
InvestmentDate	Datetime	-	Not Null	Investment Date for Bond
FaceValue	Decimal	12,2	Not Null	Face value for Bond
Physical Location	Char	20	Not Null	Physical Location where Bond is Placed
RateofProfit	Decimal	4,2	Not Null	Rate of Profit at the time of Investment
Encashed	Bit	-	Not Null	
EncashmentDate	Datetime	-	Must be greater than InvestmentDate	Date at which Bond is Encashed
PolicyCode	Numeric	3	Not Null	Policy Identifier

Table Number: 6

Table Name: BOND_DETAIL

Purpose: Stores the Profit details for U.S.Dollar Bonds

Primary Key: Bond#

Foreign Key: Bond#

Field Name	Type	Width	Constraint	Description
Bond#	Char	20	Not Null	U.S.Dollar Bond number
Profit_due_date	Datetime	-	Not Null	Date on which profit gets due
Profit	Decimal	12,2	Not Null	
Profit_ret	Bit	-	Not Null	Determines whether Profit is returned or not

Table Number: 7
Table Name: BOND_RATES
Purpose: Stores the Profit rates for U.S.Dollar Bonds
Primary Key: Bond#
Foreign Key: Bond#

Field Name	Type	Width	Constraint	Description
Bond#	Char	20	Not Null	U.S.Dollar Bond number
Profit_due_date	Datetime	-	Not Null	Date on which profit gets due
RateofProfit	Decimal	4,2	Not Null	

Table Number: 8
Table Name: PARTSPOLICY
Purpose: Stores the Tax rates for Parts
Primary Key: PolicyCode

FieldName	Type	Width	Constraint	Description
PolicyCode	Numeric	3	Not Null	Policy Identifier
TaxRate	Decimal	4,2	Not Null	Parts Tax rate

Table Number: 9
Table Name: SERVICESPOLICY
Purpose: Stores the Tax rates for Services
Primary Key: PolicyCode

FieldName	Type	Width	Constraint	Description
PolicyCode	Numeric	3	Not Null	Policy Identifier
TaxRate	Decimal	4,2	Not Null	Services Tax rate

Table Number: 10
Table Name: VOUCHER_MASTER
Purpose: Stores the Voucher specific details of a Payable Voucher
Primary Key: Voucher#
Foreign Key: PartsPolicyCode ServicesPolicyCode

FieldName	Type	Width	Constraint	Description
Voucher#	Numeric	12	Not Null	Voucher number
NamePayee	Char	30	Not Null	

AddressPayee	Char	70	Not Null	
PartsPolicyCode	Numeric	3	Not Null	Policy Identifier for Parts Tax Rate
ServicesPolicyCode	Numeric	3	Not Null	Policy Identifier for Services Tax Rate
LessDiscount	Decimal	7,2	Not Null	Discount given on the Voucher

Table Number: 11

Table Name: VOUCHER_DETAIL

Purpose: Stores all the Invoices for a certain Voucher

Primary Key: Voucher#

Foreign Key: Voucher#

FieldName	Type	Width	Constraint	Description
Voucher#	Numeric	12	Not Null	Voucher number
Invoice#	Char	20	Not Null	Invoice number of the vendor
DateofIssue	Datetime	-	NotNull	Date of Invoice
Description	Char	30	Not Null	Description of Invoice
Parts	Decimal	8,2	Not Null	Parts received
Services	Decimal	8,2	Not Null	Services received

Table Number: 12

Table Name: VOUCHER_AMOUNT

Purpose: Stores the Taxwithheld and Netamountpaid for a Voucher

Primary Key: Voucher#

Foreign Key: Voucher#

FieldName	Type	Width	Constraint	Description
Voucher#	Numeric	12	Not Null	Voucher number
Taxwithheld	Decimal	11,2	Not Null	Tax cut for this Voucher
Netpaid	Decimal	12,2	Not Null	Net amount payable

Table Number: 13

Table Name: JOURNAL_INFO

Purpose: Stores the Journal names

Primary Key: Journal_code

FieldName	Type	Width	Constraint	Description
Journal_code	Numeric	4	Not Null	Journal Identifier
Journal_name	Char	30	Not Null	Name of Journal

Table Number: 14

Table Name: ACCOUNT_INFO

Purpose: Stores the Ledger Account details where transaction is possible

Primary Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct_name	Char	30	Not Null	Name of Ledger Account

Table Number: 15

Table Name: TRANSACTION_INFO

Purpose: Stores the Transaction details of a certain transaction

Primary Key: Transaction#

Foreign Key: Journal_code Acct#

FieldName	Type	Width	Constraint	Description
Journal_code	Numeric	4	Not Null	Journal Identifier
Acct#	Numeric	6	Not Null	Ledger Account number
Transaction#	Numeric	28	Not Null	
Transactiondate	Datetime	-	Not Null	
Debit	Decimal	12,2	Not Null	
Credit	Decimal	12,2	Not Null	
Posted	Bit	-	Not Null	

Table Number: 16

Table Name: TOPLEVEL_GENERAL_MASTER

Purpose: Toplevel Ledger Accounts are stored

Primary Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct_name	Char	30	Not Null	Account name
Acct_type	Char	10	Not Null	Account type

Table Number: 17
Table Name: TOPLEVEL_GENERAL_BALANCE
Purpose: Stores the balance of Toplevel Ledger Accounts
Primary Key: Acct#
Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 18
Table Name: LEVEL2_GENERAL_MASTER
Purpose: Level2 General Ledger Accounts are stored
Primary Key: Pacct# Acct#
Foreign Key: Pacct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct name	Char	30	Not Null	Account name
Pacct#	Numeric	6	Not Null	Account number of Toplevel ledger

Table Number: 19
Table Name: LEVEL2_GENERAL_BALANCE
Purpose: Stores the balance of Level2 General Ledger Accounts
Primary Key: Acct#
Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 20
Table Name: LEVEL3_GENERAL_MASTER
Purpose: Level3 General Ledger Accounts are stored
Primary Key: Acct# Pacct#
Foreign Key: Pacct#



FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct_name	Char	30	Not Null	Account name
Pacct#	Numeric	6	Not Null	Account number of Level2 General ledger

Table Number: 21

Table Name: LEVEL3_GENERAL_BALANCE

Purpose: Stores the balance of Level3 General Ledger Accounts

Primary Key: Acct#

Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 22

Table Name: LEVEL2_DETAIL_MASTER

Purpose: Level2 Detail Ledger Accounts are stored

Primary Key: Acct# Pacct#

Foreign Key: Pacct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct_name	Char	30	Not Null	Account name
Pacct#	Numeric	6	Not Null	Account number of Toplevel ledger

Table Number: 23

Table Name: LEVEL2_DETAIL_BALANCE

Purpose: Stores the balance of Level2 Detail Ledger Accounts

Primary Key: Acct#

Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 24
Table Name: LEVEL2_DETAIL_DETAIL
Purpose: Stores the transactions in Level2 Detail Ledger Accounts
Primary Key: Acct# Transaction#
Foreign Key: Acct# Transaction#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Transaction#	Numeric	28	Not Null	
Transactiondate	Datetime	-	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 25
Table Name: LEVEL3_DETAIL_MASTER
Purpose: Level3 Detail Ledger Accounts are stored
Primary Key: Acct# Pacct#
Foreign Key: Pacct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct_name	Char	30	Not Null	Account name
Pacct#	Numeric	6	Not Null	Account number of Level2 General ledger

Table Number: 26
Table Name: LEVEL3_DETAIL_BALANCE
Purpose: Stores the balance of Level3 Detail Ledger Accounts
Primary Key: Acct#
Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 27
Table Name: LEVEL3_DETAIL_DETAIL

Purpose: Stores the transactions in Level3 Detail Ledger Accounts

Primary Key: Acct# Transaction#

Foreign Key: Acct# Transaction#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Transaction#	Numeric	28	Not Null	
Transactiondate	Datetime	-	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 28

Table Name: LEVEL4_DETAIL_MASTER

Purpose: Level4 Detail Ledger Accounts are stored

Primary Key: Acct# Pacct#

Foreign Key: Pacct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	Account Identifier
Acct name	Char	30	Not Null	Account name
Pacct#	Numeric	6	Not Null	Accountnumber of Level3General ledger

Table Number: 29

Table Name: LEVEL4_DETAIL_BALANCE

Purpose: Stores the balance of Level4 Detail Ledger Accounts

Primary Key: Acct#

Foreign Key: Acct#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 30

Table Name: LEVEL4_DETAIL_DETAIL

Purpose: Stores the transactions in Level4 Detail Ledger Accounts

Primary Key: Acct# Transaction#

Foreign Key: Acct# Transaction#

FieldName	Type	Width	Constraint	Description
Acct#	Numeric	6	Not Null	
Transaction#	Numeric	28	Not Null	
Transactiondate	Datetime	-	Not Null	
Debit	Decimal	13,2	Not Null	
Credit	Decimal	13,2	Not Null	

Table Number: 31
Table Name: DEPARTMENTS
Purpose: Stores the Departments
Primary Key: Department_code

FieldName	Type	Width	Constraints	Description
Department_code	Numeric	2	Not Null	
Department_name	Char	30	Not Null	

Table Number: 32
Table Name: DESIGNATIONS
Purpose: Stores the designations
Primary Key: Designation_code

FieldName	Type	Width	Constraint	Description
Designation_code	Numeric	5	Not Null	Designation identifier
Designation	Char	20	Not Null	
OvertimeAllowed	Bit	-	Not Null	Determineas whether overtime is allowed or not
Finished	Bit	-	Not Null	
FinishingDate	Bit	-		

Table Number: 33
Table Name: EMP_CONTRACT
Purpose: Stores the employee's Contract information
Primary Key: Emp#
Foreign Key: Department_code StartingDesignationCode

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	Employee number
Sex	Char	1	Not Null	
Emp_name	Char	30	Not Null	

Department_code	Numeric	2	Not Null	
Bacct#	Char	25	Not Null	Bank Account number
StartingBasicpay	Decimal	9,2	Not Null	
StartingDesignationcode	Numeric	5	Not Null	
LeftCompany	Bit	-	Not Null	
LeavingDate	Datetime	-		

Table Number: 34

Table Name: EMP_MONTHLY_SALARY

Purpose: Stores the employee's monthly salary information

Primary Key: Emp# Designation_code Year Month

Foreign Key: Emp# Designation_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Year	Numeric	4	Not Null	Salary year
Month	Numeric	2	Not Null	Salary month
Designation_code	Numeric	5	Not Null	
Basicpay	Decimal	9,2	Not Null	
Arrears	Decimal	9,2	Not Null	
Honourarium	Decimal	9,2	Not Null	
Recoveries	Decimal	9,2	Not Null	

Table Number: 35

Table Name: EMP_CALCULATED_SALARY

Purpose: Stores the employee's net salary for the month

Primary Key: Emp# Year Month

Foreign Key: Emp# Year Month

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Year	Numeric	4	Not Null	
Month	Numeric	2	Not Null	
Netsalary	Decimal	12,2	Not Null	

Table Number: 36

Table Name: DEBITS

Purpose: Stores the monthly salary Debits

Primary Key: Debit_code

FieldName	Type	Width	Constraint	Description
Debit_code	Numeric	5	Not Null	
Debit_Description	Char	20	Not Null+Upper	
Finished	Bit	-	Not Null	
FinishingDate	Datetime	-	Not Null	

Table Number: 37

Table Name: EMP_DEBIT

Purpose: Stores the employee's monthly debits

Primary Key: Emp# Debit_code Year Month

Foreign Key: Emp# Debit_code Year Month

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Year	Numeric	4	Not Null	
Month	Numeric	2	Not Null	
Debit_code	Numeric	5	Not Null	
Debit_amount	Decimal	9,2	Not Null	

Table Number: 38

Table Name: ALLOWANCE_POLICY

Purpose: Stores the allowance policy

Primary Key: Allow_code

FieldName	Type	Width	Constraint	Description
Allow_code	Numeric	5	Not Null	
Allow_description	Char	20	Not Null	
Rate	Decimal	8,2	Not Null	
Percentage	Bit	-	Not Null	Determines whether this allowance is a percentage of Basicpay or fixed amount
Finished	Bit	-	Not Null	
FinishingDate	Datetime	-		

Table Number: 39

Table Name: INCOME_TAX_POLICY_BELOW_300000

Purpose: Stores the Income tax policy below 300000

Primary Key: Allow_code

Foreign Key: Allow_code

FieldName	Type	Width	Constraint	Description
Allow_code	Numeric	5	Not Null	
Exempted	Bit	-	Not Null	Determines whether this allowance is Exempted from tax or not
Included	Bit	-	Not Null	Determines whether this allowance is included in the taxable income or not
Fullallowance	Bit	-	Not Null	
Percentage	Bit	-	Not Null	Some percentage of basicpay or fixed amount should be included or exempted
Rate	Decimal	8,2	Not Null	Amount or percentage to be included or exempted
Amount	Decimal	9,2	Not Null	Amount in case whichever of the two is less condition arises
Changed	Bit	-	Not Null	Policy has Changed or not
ChangingDate	Datetime	-		

Table Number: 40

Table Name: INCOME_TAX_POLICY_ABOVE_300000

Purpose: Stores the Income tax policy above 300000

Primary Key: Allow_code

Foreign Key: Allow_code

FieldName	Type	Width	Constraint	Description
Allow_code	Numeric	5	Not Null	
Exempted	Bit	-	Not Null	Determines whether this allowance is Exempted from tax or not

Included	Bit	-	Not Null	Determines whether this allowance is included in the taxable income or not
Fullallowance	Bit	-	Not Null	
Percentage	Bit	-	Not Null	Some percentage of basicpay or fixed amount should be included or exempted
Rate	Decimal	8,2	Not Null	Amount or percentage to be included or exempted
Amount	Decimal	9,2	Not Null	Amount in case whichever of the two is less condition arises
Changed	Bit	-	Not Null	Policy has Changed or not
ChangingDate	Datetime	-		

Table Number: 41

Table Name: DESIGNATION_WISE_ALLOWANCE

Purpose: Stores which allowances are allowed to which designations

Primary Key: Designation_code Allow_code

Foreign Key: Designation_code Allow_code

FieldName	Type	Width	Constraint	Description
Designation_code	Numeric	5	Not Null	
Allow_code	Numeric	5	Not Null	

Table Number: 42

Table Name: EMP_ALLOWANCE_AMOUNT

Purpose: Stores the Monthly allowances given to an Employee

Primary Key: Emp# Allow_code Year Month

Foreign Key: Emp# Allow_code Year Month

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Year	Numeric	4	Not Null	Salary's Year
Month	Numeric	2	Not Null	Salary's Month

Allow_code	Numeric	5	Not Null	
Amount	Decimal	9,2	Not Null	

Table Number: 43

Table Name: LIMITS_CREDITS

Purpose: Stores the minimum taxableincome limit and taxcredit

Primary Key: Sex

FieldName	Type	Width	Constraint	Description
Sex	Char	1	Not Null	
LessCredit	Decimal	7,2	Not Null	TaxCredit given
Taxablelimit	Decimal	8,2	Not Null	Minimum Taxable Income

Table Number: 44

Table Name: TAX_POLICY

Purpose: Stores the Income tax policy

FieldName	Type	Width	Constraint	Description
Lowerlimit	Decimal	9,2	Not Null	
UpperLimit	Decimal	9,2	Not Null	
Amount	Decimal	9,2	Not Null	Amount to be added
Rate	Decimal	4,2	Not Null	Tax Rate

Table Number: 45

Table Name: LEAVE_POLICY

Purpose: Stores the Leave Policy

Primary Key: Leave_code

FieldName	Type	Width	Constraint	Description
Leave_code	Numeric	2	Not Null	Leave idenntifier
Type	Char	20	Not Null	Leave type
Total	Numeric	3	Not Null	Total number of leaves allowed
Year_on	Char	1	Not Null	Counted on Fiscal Year or Calendar Year
Encashable	Bit	-	Not Null	Encashable or not
Finished	Bit	-	Not Null	
FinishingDate	Datetime	-		

Table Number: 46

Table Name: EMP_LEAVE

Purpose: Stores the Leaves taken by an Employee

Primary Key: Emp# Leave_code

Foreign Key: Emp# Leave_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Leave_code	Numeric	2	Not Null	
ApplyingDate	Datetime	-	Not Null	
FromDate	Datetime	-	Not Null	
ToDate	Datetime	-	Not Null	
Address	Char	70	Not Null	Address while on leave
Telephone	Char	21	Not Null	Telephone while on Leave

Table Number: 47

Table Name: EMP_BALANCE_CALENDAR

Purpose: Stores the number of calendar year leaves already availed by a certain Employee against

Primary Key: Emp# Leave_code Year

Foreign Key: Emp# Leave_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Leave_code	Numeric	2	Not Null	
Year	Numeric	4	Not Null	
Already_availed	Numeric	3	Not Null	

Table Number: 48

Table Name: EMP_BALANCE_FISCAL

Purpose: Stores the number of fiscal year leaves already availed by a certain Employee against

Primary Key: Emp# Leave_code StartingFiscalYear
EndingFiscalYear

Foreign Key: Emp# Leave_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Leave_code	Numeric	2	Not Null	
StartingFiscalYear	Numeric	4	Not Null	
EndingFiscalYear	Numeric	4	Not Null	
Already_availed	Numeric	3	Not Null	

Table Number: 49
Table Name: OVERTIME
Purpose: Stores the Overtime details of a certain employee
Primary Key: Emp#
Foreign Key: Emp#

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Overtimedate	Datetime	-	Not Null	
Time_in	Datetime	-	Not Null	
Time_out	Datetime	-	Not Null	

Table Number: 50
Table Name: EMP_MEDICAL
Purpose: Stores the medical claims by a certain Employee
Primary Key: Emp#
Foreign Key: Emp#

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
CashMemo	Char	15	Not Null	Cash memo number
PersonName	Char	25	Not Null	Person who received the treatment
Relationship	Char	25	Not Null	Relationship with the claimant
Amount	Decimal	7,2	Not Null	
MemoDate	Datetime	-	Not Null	

Table Number: 51
Table Name: POWER_HEADS
Purpose: Stores the Financial power heads
Primary Key: Head_code

FieldName	Type	Width	Constraint	Description
Head_code	Numeric	3	Not Null	Power Head identifier
Description	Char	100	Not Null	
Finished	Bit	-	Not Null	
FinishingDate	Datetime	-		

Table Number: 52
Table Name: POWERS
Purpose: Stores the financial powers against different heads
Primary Key: Designation_code Head_code
Foreign Key: Designation_code Head_code

FieldName	Type	Width	Constraint	Description
Designation_code	Numeric	5	Not Null	
Head_code	Numeric	3	Not Null	
Power	Decimal	10,2	Not Null	Financial Power allowed
Monthly	Bit	-	Not Null	Monthly or not
FullPowers	Bit	-	Not Null	

Table Number: 53
Table Name: EMP_BILL
Purpose: Stores the financial power bills by a certain Employee
Primary Key: Emp# Head_code
Foreign Key: Emp# Head_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Head_code	Numeric	3	Not Null	
BillingDate	Datetime	-	Not Null	
Bill#	Char	25	Not Null	
Amount	Decimal	10,2	Not Null	

Table Number: 54
Table Name: EMP_USED
Purpose: Stores the financial power bills already used by a certain Employee
Primary Key: Emp# Head_code Year Month
Foreign Key: Emp# Head_code

FieldName	Type	Width	Constraint	Description
Emp#	Numeric	7	Not Null	
Head_code	Numeric	3	Not Null	
Year	Numeric	4	Not Null	
Month	Numeric	2	Not Null	
Used	Decimal	11,2	Not Null	

Table Number: 55
Table Name: BUDGET_HEADS
Purpose: Stores the Budget heads
Primary Key: Bhead_code

FieldName	Type	Width	Constraint	Description
Bhead_code	Numeric	3	Not Null	Budget head identifier
Description	Char	50	Not Null	Budget head
Finished	Bit	-	Not Null	
FinishingDate	Datetime	-		

Table Number: 56
Table Name: YEARLY_BUDGET
Purpose: Stores the yearly budget
Primary Key: Budget_code Bhead_code
Foreign Key: Bhead_code

FieldName	Type	Width	Constraint	Description
Budget_code	Char	14	Not Null	Budget identifier for a certain fiscal year
Bhead_code	Numeric	3	Not Null	Budget head identifier
Amount_allocated	Decimal	15,2	Not Null	
Amount_spent	Decimal	15,2	Not Null	

Table Number: 57
Table Name: BUDGET_DETAIL
Purpose: Stores the Departmentwise yearly budget
Primary Key: Budget_code Bhead_code Department_code
Foreign Key: Budget_code Bhead_code Department_code

FieldName	Type	Width	Constraint	Description
Budget_code	Char	14	Not Null	Budget identifier for a certain Fiscal year
Bhead_code	Numeric	3	Not Null	Budget head identifier
Department_code	Numeric	2	Not Null	Department identifier
Amount_allocated	Decimal	14,2	Not Null	
Amount_spent	Decimal	14,2	Not Null	

Table Number: 58
Table Name: DEPARTMENT_MONTH_ALL
Purpose: Stores the Departmentwise monthly budget
Primary Key: Budget_code Bhead_code Department_code Month
Foreign Key: Budget_code Bhead_code Department_code

FieldName	Type	Width	Constraint	Description
Budget_code	Char	14	Not Null	Budget identifier for a certain Fiscal year
Bhead_code	Numeric	3	Not Null	Budget head identifier
Department_code	Numeric	2	Not Null	Department identifier
Month	Numeric	2	Not Null	Budget month
Allocated	Decimal	14,2	Not Null	
Spent	Decimal	14,2	Not Null	

Table Number: 59
Table Name: BC-2_FORM
Purpose: Stores the budget control requests
Primary Key: Budget_code Bhead_code Department_code Month
Foreign Key: Budget_code Bhead_code Department_code

FieldName	Type	Width	Constraint	Description
Budget_code	Char	14	Not Null	Budget identifier for a certain Fiscal year
Bhead_code	Numeric	3	Not Null	Budget head identifier
Department_code	Numeric	2	Not Null	Department identifier
Month	Numeric	2	Not Null	Budget month
Description	Char	50	Not Null	Request description
Amount	Decimal	13,2	Not Null	Amount requested
Requestedby	Char	40	Not Null	Person who requested it
Allocated	Bit	-	Not Null	Allocated or not
Allocatedby	Char	40	Not Null	Person Who allocated it

Table Number: 60
Table Name: USERS
Purpose: Stores the users system has
Primary Key: Loginid

FieldName	Type	Width	Constraint	Description
Loginid	Char	20	Not Null	Login id for a user
Password	Char	15	Not Null	Password for the user
Insertpriv	Bit	-	Not Null	Insert privilege given or not
Updatepriv	Bit	-	Not Null	Update privilege given or not
Viewpriv	Bit	-	Not Null	View Privilege given or not
Administrator	Bit	-	Not Null	Administrator or not

4.3 Forms Development

Forms are used so that in case of input all the related information can be taken from the user easily and similarly for output all related information can be displayed on screen in a concise manner. Microsoft Visual Basic 6.0 helps one design forms quickly for entering, querying, updating and deleting data. Different forms are:

1. New Certificate Form

Description: This form is used for entering a new Regular Income Certificate

Tables Involved: RIC_POLICY, RIC_MASTER

2. Change and Delete Certificates Form

Description: This form is used for Updation and Deletion of Previous Regular Income Certificates

Tables Involved: RIC_POLICY, RIC_MASTER, RIC_DETAIL

3. New Bond Form

Description: This form is used for entering a new U.S.Dollar Bond

Tables Involved: BOND_POLICY, BOND_RATES, BOND_MASTER

4. Change and Delete Bonds Form

Description: This form is used for Updation and Deletion of Previous U.S. Dollar Bonds

Tables Involved: BOND_POLICY, BOND_MASTER, BOND_DETAIL, BOND_RATES

5. New Voucher Form

Description: This form is used for entering a new Payable Voucher

Tables Involved: PARTSPOLICY, SERVICESPOLICY, VOUCHER_MASTER, VOUCHER_DETAIL, VOUCHER_AMOUNT

6. Change and Delete Vouchers Form

Description: This form is used for Updation and Deletion of Previous Vouchers

Tables Involved: PARTSPOLICY, SERVICESPOLICY, VOUCHER_MASTER, VOUCHER_DETAIL, VOUCHER_AMOUNT

7. New Transaction Form

Description: This form is used for entering a new Transaction

Tables Involved: TRANSACTION_INFO

8. Change and Delete Transactions Form

Description: This form is used for Updation and Deletion of Previous Transactions

Tables Involved: TRANSACTION_INFO

9. Employee Leave Form

Description: This form is used for entering a new Leave Request

Tables Involved: LEAVE_POLICY, EMP_LEAVE, EMP_BALANCE_CALENDAR, EMP_BALANCE_FISCAL

10. Change Employee Leaves Form

Description: This form is used for Updation and Deletion of Previous Leave Requests

Tables Involved: LEAVE_POLICY, EMP_LEAVE, EMP_BALANCE_CALENDAR, EMP_BALANCE_FISCAL

11. Overtime Form

Description: This form is used for entering a new Overtime Request

Tables Involved: OVERTIME

12.Change Employees Overtime Form

Description: This form is used for Updation and Deletion of Previous Overtime Requests

Tables Involved: OVERTIME

13.Employee Medical Form

Description: This form is used for entering a new employee medical requests

Tables Involved: EMP_MEDICAL

14.Change Employees Medical Form

Description: This form is used for Updation and Deletion of Previous Medical Requests

Tables Involved: EMP_MEDICAL

15.Employees Financial Power Bill Form

Description: This form is used for entering a new Financial Power Bill

Tables Involved: POWER_HEADS, POWERS, EMP_BILL, EMP_USED

16.Change Employee Financial Power Bills Form

Description: This form is used for Updation and Deletion of Previous Financial Power Bills

Tables Involved: POWER_HEADS, POWERS, EMP_BILL, EMP_USED

17.Budget Control Form

Description: This form is used for entering a new Budget Control Request

Tables Involved: BC-2_FORM, BUDGET_HEADS, YEARLY_BUDGET, BUDGET_DETAIL, DEPARTMENT_MONTH_ALL

18.Change Budget Control Requests Form

Description: This form is used for Updation and Deletion of Previous Budget Control Requests

Tables Involved: BC-2_FORM, BUDGET_HEADS, YEARLY_BUDGET, BUDGET_DETAIL, DEPARTMENT_MONTH_ALL

19.New Journal Form

Description: This form is used for making a new Journal

Tables Involved: JOURNAL_INFO

20. New Ledger Account Form

Description: This form is used for making a new Ledger Account

Tables Involved: TOPLEVEL_GENERAL_MASTER,
LEVEL2_GENERAL_MASTER, LEVEL2_DETAIL_MASTER,
LEVEL3_GENERAL_MASTER, LEVEL3_DETAIL_MASTER,
LEVEL4_DETAIL_MASTER

21. Delete and Update Ledger Accounts Form

Description: This form is used for Updation and Deletion of Previous Ledger Accounts

Tables Involved : TOPLEVEL_GENERAL_MASTER,
LEVEL2_GENERAL_MASTER, LEVEL2_DETAIL_MASTER,
LEVEL3_GENERAL_MASTER, LEVEL3_DETAIL_MASTER,
LEVEL4_DETAIL_MASTER

22. New Department Form

Description: This form is used for making a new Department

Tables Involved: DEPARTMENTS

23. Change Department name Form

Description: This form is used for changing Previous Department name

Tables Involved: DEPARTMENTS

24. Delete Department Form

Description: This form is used for Deletion of Previous Departments

Tables Involved: DEPARTMENTS

25. New Designation Form

Description: This form is used for making a new Designation

Tables Involved: DESIGNATIONS

26. Change Designation Properties Form

Description: This form is used for changing Previous Designation properties

Tables Involved: DESIGNATIONS

27. Finish Designation Form

Description: This form is used for Deletion of Previous Designations

Tables Involved: DESIGNATIONS

28. New Payroll Debit Form

Description: This form is used for making a new Payroll Debit

Tables Involved: DEBITS

29. Change Payroll Debit Form

Description: This form is used for changing Previous Payroll Debit name

Tables Involved: DEBITS

30. Finish Payroll Debit Form

Description: This form is used for Deletion of Previous Payroll Debits

Tables Involved: DEBITS

31. New Allowance Form

Description: This form is used for making a new Allowance

Tables Involved: ALLOWANCE_POLICY,
DESIGNATION_WISE_ALLOWANCE,
INCOME_TAX_POLICY_BELOW_300000,
INCOME_TAX_POLICY_ABOVE_300000

32. Change Allowance Properties Form

Description: This form is used for changing Previous Allowance Properties

Tables Involved: ALLOWANCE_POLICY,
DESIGNATION_WISE_ALLOWANCE,
INCOME_TAX_POLICY_BELOW_300000,
INCOME_TAX_POLICY_ABOVE_300000

33. Finish Allowance Form

Description: This form is used for Deletion of Previous Allowances

Tables Involved: ALLOWANCE_POLICY,
DESIGNATION_WISE_ALLOWANCE,
INCOME_TAX_POLICY_BELOW_300000,
INCOME_TAX_POLICY_ABOVE_300000

34. Tax Policy Form

Description: This form is used for making a new Tax Policy

Tables Involved: TAX_POLICY

35. Change Tax Policy Form

Description: This form is used for changing Previous Tax Policy

Tables Involved: TAX_POLICY

36. Tax Limits and Credits Form

Description: This form is used for changing Taxable Income Limit and TaxCredit

Tables Involved: LIMITS_CREDITS

37. Leave Policy Form

Description: This form is used for making a new Leave Policy

Tables Involved: LEAVE_POLICY

38. Change Leave Properties Form

Description: This form is used for changing Previous Leave Policy

Tables Involved: LEAVE_POLICY

39. Finish Leaves Form

Description: This form is used for Deletion of Previous Leave Policy

Tables Involved: DEBITS

40. New Financial Power Heads Form

Description: This form is used for making a new Financial Power Head

Tables Involved: POWER_HEADS, POWERS

41. Change Financial Power Head Properties Form

Description: This form is used for changing Previous Financial Power Head Properties

Tables Involved: POWER_HEADS, POWERS

42. New Employee Form

Description: This form is used for making a new Employee

Tables Involved: EMP_CONTRACT, DESIGNATIONS, DEPARTMENTS

43. Change Employee's initial information Form

Description: This form is used for changing Employee's initial information

Tables Involved: EMP_CONTRACT, DESIGNATIONS, DEPARTMENTS

44. Finish Employee's Record Form

Description: This form is used for finishing employee's Record

Tables Involved: EMP_CONTRACT

45. Change Employee's Monthly Salary Form

Description: This form is used for changing Employee's monthly salary information

Tables Involved: EMP_MONTHLY_SALARY, EMP_CALCULATED_SALARY, EMP_DEBIT, EMP_ALLOWANCE_AMOUNT, DESIGNATIONS, DESIGNATION_WISE_ALLOWANCE, DEBITS

46. Budget Heads Form

Description: This form is used for making a new Budget head

Tables Involved: BUDGET_HEADS

47. Change Budget Head Form

Description: This form is used for changing Previous Budget head's name

Tables Involved: BUDGET_HEADS

48. Finish Budget Heads Form

Description: This form is used for Deletion of Previous Budget heads

Tables Involved: BUDGET_HEADS

49. Allocate Yearly Budget Form

Description: This form is used for making a new Yearly Budget

Tables Involved: BUDGET_HEADS, YEARLY_BUDGET

50. Change Yearly Budget Allocation Form

Description: This form is used for changing Previous Yearly Budget allocation

Tables Involved: BUDGET_HEADS, YEARLY_BUDGET

51. Departmentwise Yearly Budget Allocation Form

Description: This form is used for making and changing Departmentwise Yearly Budget allocation

Tables Involved: BUDGET_HEADS, YEARLY_BUDGET, BUDGET_DETAIL

52. Departmentwise Monthly Budget Allocation Form

Description: This form is used for making and changing Departmentwise Monthly Budget allocation

Tables Involved: BUDGET_HEADS, YEARLY_BUDGET, BUDGET_DETAIL, DEPARTMENT_MONTH_ALL

4.4 OUTPUT DEVELOPMENT

Output development shows how the inputs are converted into outputs. Various select clauses were written to get printed and screen oriented output.

Printed output

Reports were generated using Crystal Reports, a third party tool from Seagate Software that is shipped with Microsoft Visual Basic 6.0 for generating efficient and beautiful reports with the help of Structured Query Language.

Screen oriented output

Output was generated using select clause of SQL.

4.5 Testing

Testing is a process of executing a program with the intent of finding an error. The system testing was performed, errors were reported and fixed. Following tests were conducted with 100 records.

Unit Testing

In Unit testing, different modules of the developed system were tested independently. The purpose of this testing was to determine, that each individual module is functioning properly and to locate logical and coding errors.

This testing enables module wide error correction and hence these won't come in the final system testing that results in much easier error detection.

Integration Testing

After Unit testing, Integration testing were conducted again on 100 records. Several errors were reported and corrected. The main objective is to detect the inconsistencies in the system.

4.6 Conversion

Conversion is the process of changing from old system to the new one. Various techniques are available:

- ◆ Parallel System
- ◆ Direct Change Over
- ◆ Pilot Approach
- ◆ Phase in Approach

Proposed System Conversion

Since in PPIB, a manual system already exists so Parallel system conversion should be used so that the efficiency and accuracy of both systems can be compared.

CHAPTER 5

SYSTEM EVALUATION AND FUTURE ENAHANCEMENTS

The system evaluation phase is the final phase for the developer after implementing the system. The developer reviews the system and determines whether the objectives are achieved or not. A major factor during system evaluation is to evaluate the system with the perspective of the user. The main objectives of the system evaluation are:

- ◆ To determine whether the system goals and objectives have been achieved.
- ◆ To determine whether user-operating activities have been improved.
- ◆ To determine whether user requirements have been met, while simultaneously reducing errors and cost.

The major goal of the developer is to succeed in all aspects though come tradeoff's are worth considering for instance, if the rate of errors is to be kept extremely low, then the speed of performance may have to be sacrificed.

Thus in software development there is no guarantee of a perfect system or a unique interface, for there is always room for improvement. All these factors were kept in mind when developing the proposed system but as mentioned earlier, one has to do away with some factors, so that the merits of a system are accompanied with some demerits too. After a cognitive walk-through following merits, demerits were found and future enhancements were recommended.

5.1 Merits of the system

The merits of the system are:

- ◆ Data retrieval was one of the main problems encountered in Manual systems. Now it is possible to retrieve information about investments, salary, budget or balance of accounts in no time. The development of a computerized system gave way to online information retrieval and storage of data was made efficient.
- ◆ In the newly developed system rate of errors is considerably reduced. Appropriate error messages have also been provided in order to refrain from making errors.
- ◆ Data validation checks have been provided to ensure correct entry and storage of data.
- ◆ A list of values is also provided wherever needed. Now the user does not have to remember Ledger account numbers, names or their level.

- ◆ Username and Password are required for entry into the system. Moreover privileges can also be given to different users for restricting the user's motives.
- ◆ The system is developed in such a way that there is always room for accomodating small level of change.

5.2 Demerits of the system

Following may be considered as demerits of the system:

- ◆ If user does not know about the manual working of the system, it is very combursome to understand this system.
- ◆ Knowledge of accounting is a must for using this system. Accounting includes ledger, Journal maintenance and tax calculation etc.
- ◆ Training of the users is must to use this system
- ◆ Some of the accounting reports are not made by it and still have to be prepared manually.

5.3 Future Enhancements

Through the design and developmen of his system, the main objective has been, to meet the all possible future and presen user requirements, but as already said there is always room for improvement.

For future expansions of this system it is recommended that

- ◆ After some research reports like Trial Balance, Income Statement can be made directly.
- ◆ More queries can be generated.
- ◆ In case of change only a little change will be required because all files can be changed easily.

5.4 Precautions and Recommendations

It is recommended that a regular schedule of backup should be followed to avoid problems causing from system breakdown.

Microsoft SQL Server's Backup utility can be used directly from the database or the backup facility is also provided by the software itself, which uses Microsoft SQL Server's backup command.

Users of this software must already be familiar with the windows environment and working of the existing system.

This software should preferably be run on a system which has:

500 MB Hard Disk
32 MB RAM

1 Keyboard
1 Monitor
Microsoft SQL Server 7.0
1 Printer

APPENDIX A

DATA FLOW DIAGRAMS

APPENDIX B

**DATA DICTIONARY
AND
DATA STRUCTURES**

Name	Certificate info
Data Type	Structure
Alias	Regular Income Certificate info / Investment info
Description	Details of Investment of a Regular Income Certificate
Condition	Pre-Condition:-Regular Income Certificate must exist

Name	Profit Control Statement for Regular Income Certificates
Data Type	Structure
Alias	No
Description	This report gives details of Investment and Profit of Regular Income Certificates
Condition	Pre-Condition:- 1.Regular Income Certificate must exist 2.Regular Income Certificate must not be encashed before minimum tenure

Name	Bonds info
Data Type	Structure
Alias	U.S.Dollar Bonds info / Investment info
Description	Details of Investment of a U.S.Dollar Bond
Condition	Pre-Condition:-U.S.Dollar Bond must exist

Name	Profit Control Statement for U.S.Dollar Bonds
Data Type	Structure
Alias	No
Description	This report gives details of Investment and Profit of U.S.Dollar Bonds
Condition	Pre-Condition:- 1.U.S.Dollar Bond must exist 2.U.S.Dollar Bond must not be encashed before minimum tenure

Name	Voucher info
Data Type	Structure
Alias	No
Description	Details of Payable (Service or Part)
Condition	Pre-Condition:-Service or Part must be received

Name	Transaction info
Data Type	Structure
Alias	No
Description	Details of Transaction in a certain Ledger account
Condition	Pre-Condition:-Journal must exist Post-Condition:-Transaction can be either Debit or Credit

Name	Ledger Accounts info
Data Type	Structure
Alias	No
Description	Details of Balance of a Ledger account
Condition	Pre-Condition:-Ledger account must exist

Name	Balance of Accounts Report
Data Type	Structure
Alias	No
Description	This Report is made to check the Balance of ledger accounts at a certain level
Condition	Pre-Condition:- 1.Ledger account must exist 2.Level of Ledger must be given 3.Detail or General accounts must be given

Name	Contract info
Data Type	Structure
Alias	Employee Contract info
Description	Details of Employee's initial contract
Condition	Pre-Condition:-Employee must exist in the company

Name	Employee Designation info
Data Type	String
Alias	No
Description	Employee's Designation
Condition	Pre-Condition:- 1.Employee must exist 2.Designation must exist

Name	Employee Basicpay info
Data Type	Decimal
Alias	No
Description	Employee's Basicpay
Condition	Pre-Condition:-Employee must exist

Name	Leave Request
Data Type	Structure
Alias	No
Description	Leaves request for a certain employee
Condition	Pre-Condition:- 1.Employee must exist 2.Leave type must be given 3.Leaves should be remaining in the employee's quota for that leave type

Name	Overtime Request
Data Type	Structure
Alias	No
Description	Overtime request for a certain employee
Condition	Pre-Condition:- 1.Employee must exist 2.Overtime must be allowed to that employee

Name	Medical Charges Request
Data Type	Structure
Alias	No
Description	Medical Charges reimbursement request by a certain employee
Condition	Pre-Condition:-Employee must exist

Name	Employee Financial Power Bill
Data Type	Structure
Alias	No
Description	Financial power bill for a certain employee
Condition	Pre-Condition:- 1.Employee must exist 2.Employee must have financial power 3.In case of monthly power, financial power must be remaining for that month

Name	Monthly Salary Report
Data Type	Structure
Alias	No
Description	This report contains employee's monthly salary information
Condition	Pre-Condition:- 1.Employees must exist in the company 2.Employees must have received the salary

Name	Monthly Tax Summary
Data Type	Structure
Alias	No
Description	This report contains the employee's monthly income tax
Condition	Pre-Condition:- 1.Employees must exist in the company 2.Employees must have received the salary

Name	Yearly Budget Allocation
Data Type	Structure
Alias	Yearly Budget
Description	Details of Yearly Budget Allocation
Condition	None

Name	Departmentwise Yearly Budget Allocation
Data Type	Structure
Alias	Departmentwise Yearly Budget
Description	Details of Departmentwise Yearly Budget Allocation
Condition	Pre-Condition:-Yearly Budget Allocation must exist for that fiscal year

Name	Monthly Budget Allocation
Data Type	Structure
Alias	Monthly Budget
Description	Details of Departmentwise monthly budget allocation
Condition	Pre-Condition:- 1. Yearly Budget Allocation must exist for that fiscal year 2. Departmentwise Yearly Budget Allocation must exist for that fiscal year

Name	Bc-2 Form
Data Type	Structure
Alias	Budget Control Form
Description	Budget Control Request
Condition	Pre-Condition:- 1. Yearly Budget Allocation must exist for that fiscal year 2. Departmentwise Yearly Budget Allocation must exist for that fiscal year 3. Monthly Budget Allocation must exist for that fiscal year

Name	Yearly Budget Allocation Report
Data Type	Structure
Alias	No
Description	This Report is made for checking yearly budget allocation
Condition	Pre-condition:-Yearly budget allocation must exist

Name	Departmentwise Yearly Budget Allocation Report
Data Type	Structure
Alias	No
Description	This Report is made for checking Departmentwise Yearly Budget Allocation
Condition	Pre-Condition:- 1. Yearly Budget Allocation must exist for that fiscal year 2. Departmentwise Budget Allocation must exist for that fiscal year

Name	Monthly Budget Allocation Report
Data Type	Structure
Alias	No
Description	This Report is made for checking monthly budget allocation
Condition	Pre-Condition:- 1. Yearly Budget Allocation must exist for that fiscal year 2. Departmentwise Yearly Budget Allocation must exist for that fiscal year 3. Monthly budget allocation must exist for that fiscal year

DATASTRUCTURES

Certificate info

Element	Type	Length	Domain	Units	Constraints	Format
Certificate no.	String	15	All Valid Certificate numbers	NA	NA	NA
Minimum Tenure	Number	4	NA	Months	Less than Maximum Tenure	NA
Maximum Tenure	Number	4	NA	Months	Greater than Minimum Tenure	NA
Rateofprofit	Number	4,2	NA	NA	NA	NA
Profitperiod	Number	2	NA	Months	Less than Maximum Tenure	NA
Investment Date	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY
Facevalue	Number	12,2	NA	Rs.	NA	NA
Physicallocation	String	20	All Valid Physical Locations	NA	NA	NA
Encashment Date	Date	10	All Valid Dates	NA	Greater than Investment Date and will be used only if the certificate is Encashed	DD/MM/YY YY

Bonds info

Element	Type	Length	Domain	Units	Constraints	Format
Bond no.	String	15	All Valid Bond numbers	NA	NA	NA
Minimum Tenure	Number	4	NA	Months	Less than Maximum Tenure	NA
Maximum Tenure	Number	4	NA	Months	Greater than Minimum Tenure	NA
Rateofprofit	Number	4,2	NA	NA	NA	NA
Profitperiod	Number	2	NA	Months	Less than Maximum Tenure	NA

Investment Date	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY
Facevalue	Number	12,2	NA	Rs.	NA	NA
Physicallocation	String	20	All Valid Physical Locations	NA	NA	NA
Encashment Date	Date	10	All Valid Dates	NA	Greater than Investment Date and will be used only if the bond is Encashed	DD/MM/YY YY

Voucher info

Element	Type	Length	Domain	Units	Constraints	Format
Voucher no.	Number	12	NA	NA	NA	NA
Name Payee	String	30	All Valid Names	NA	NA	NA
Address Payee	String	70	All Valid Addresses	NA	NA	NA
Parts	Number	7,2	NA	Rs.	NA	NA
Services	Number	7,2	NA	Rs.	NA	NA
Partstaxrate	Number	4,2	NA	NA	NA	NA
Servicestaxrate	Number	4,2	NA	NA	NA	NA
Taxwithheld	Number	11,2	NA	NA	NA	NA
LessDiscount	Number	7,2	NA	Rs.	NA	NA
Netpaid	Number	12,2	NA	Rs.	NA	NA

Transaction info

Element	Type	Length	Domain	Units	Constraints	Format
Journal	String	30	All Valid Journal names	NA	NA	NA
Transaction#	Number	10	NA	NA	NA	NA
Account#	Number	6	NA	NA	NA	NA
Transactiondate	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY
Condition	Enumerated	-	[Debit Credit]	NA	Can be one of the given	NA
Amount	Number	12,2	NA	Rs.	NA	NA

LedgerAccounts info

Element	Type	Length	Domain	Units	Constraints	Format
Account#	Number	6	NA	NA	NA	NA
Account name	String	30	All Valid Acct Names	NA	NA	NA
Accttype	Enumerated	-	[Capital Asset Liability Revenue Expense]	NA	Can be only one of the given	NA
Balanceype	Enumerated	-	[Debit Credit Balanced]	Rs.	Can be only one of the following	NA
Balance	Number	13,2	NA	Rs.	NA	NA

Contract info

Element	Type	Length	Domain	Units	Constraints	Format
Employee name	String	30	All Valid Names	NA	NA	NA
Sex	Enumerated	-	[Male Female]	NA	Can be only one of the given	NA
Department	String	30	All Valid Departments	NA	NA	NA
Bankaccount number	String	25	All Valid Bank Account numbers	NA	NA	NA
Designation	String	20	NA	NA	NA	NA
Basicpay	Number	9,2	NA	Rs.	NA	NA

Leave Request

Element	Type	Length	Domain	Units	Constraints	Format
Employee name	String	30	All Valid Employee names	NA	NA	NA
Leavetype	Enumerated	-	All Valid leave types	NA	NA	NA
Applying date	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY

From	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY
To	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY
Address while on Leave	String	70	All Valid Addresses	NA	NA	NA
Telephone while on leave	Enumerated	-	NA	NA	Should be according to the given format	(999)- (9999)- 99999999

Overtime Request

Element	Type	Length	Domain	Units	Constraints	Format
Employee name	String	30	All Valid names	NA	NA	NA
Overtime date	Date	10	All Valid dates	NA	Should be according to the given format	DD/MM/YY YY
Timein	Time	10	All Valid Times	NA	Should be according to the given format and must be greater than 3 PM except Sunday	HH:MM:SS [AM PM]
Timeout	Time	10	All Valid Times	NA	Should be according to the given format and greater than Timein	HH:MM:SS [AM PM]

Medical Charges Request

Element	Type	Length	Domain	Units	Constraints	Format
Employee name	String	30	All Valid Names	NA	NA	NA
Cashmemo	String	15	NA	NA	NA	NA
Person who received the treatment	String	25	All Valid Names	NA	NA	NA

Relationship with the claimant	Enumerated	-	[Self Mother Father Wife Husband Daughter Son]	NA	Can be only one of the given	NA
Memodate	Date	10	All Valid Dates	NA	Should be according to the given format	DD/MM/YY YY

Financial Power Bill

Element	Type	Length	Domain	Units	Constraints	Format
Employee name	String	30	All Valid names	NA	NA	NA
Designation	String	20	All Valid Designations	NA	NA	NA
Powerhead	String	50	All valid Financial Power heads	NA	NA	NA
Billingdate	Date	10	NA	NA	Should be according o the given format	DD/MM/YY YY
Billnumber	String	25	NA	NA	NA	NA
Amount	Number	10,2	NA	Rs.	NA	NA

Yearly Budget Allocation

Element	Type	Length	Domain	Units	Constraints	Format
Fiscalyear	Enumerated	-	All Valid Fiscal Years	NA	According to the given format	9999-9999
Budgethead	String	50	All Valid Budgetheads	NA	NA	NA
Amountallocated	Number	15,2	NA	Rs.	NA	NA



Departmentwise Yearly Budget Allocation

Element	Type	Length	Domain	Units	Constraints	Format
Fiscalyear	Enumerated	-	All Valid Fiscal Years	NA	According to the given format	9999-9999
Department	Enumerated	-	[Legal Project MIS Admin Accounts]	NA	Can be only one of the given	NA
Budgethead	String	50	All Valid Budgetheads	NA	NA	NA
Amountallocated	Number	14,2	NA	Rs.	NA	NA

Monthly Budget Allocation

Element	Type	Length	Domain	Units	Constraints	Format
Fiscalyear	Enumerated	-	All Valid Fiscal Years	NA	According to the given format	9999-9999
Department	Enumerated	-	[Legal Project MIS Admin Accounts]	NA	Can be only one of the given	NA
Month	Enumerated	-	[Jan Feb Mar Apr May Jun July Aug Sep Oct Nov Dec]	NA	Can be only one of the given	NA
Budgethead	String	50	All Valid Budgetheads	NA	NA	NA
Amountallocated	Number	13,2	NA	Rs.	NA	NA

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