HUMAN RESOURCES MANAGEMENT SYSTEM FOR OVERHAUL DIVISION AT HAL.

A DISSERTATION SUBMITTED TO

KUMARA GURU COLLEGE OF TECHNOLOGY

(AFFILIATED TO BHARATHIAR UNIVERSITY,COIMBATORE)

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BY

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CERTIFICATE

This is to certify that the project work entitled **HUMAN RESOURCE MANAGEMENT (HURES)** for Overhaul Division, Hindustan Aeronautics limited, Bangalore done by PRASANTH CHANDRAN, submitted in partial fulfilment of requirements of ***Master of Computer Application*** degree has been carried out in our organisation under our supervision from December'96 to May'97 for a period of six months.

Due to confidentially of the information pertaining to the project the student is not permitted to take the source code and database outside our organisation.

We wish him success in all his endeavours.

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This is to certify that the project work was done under my guidance and dissertation entitled " HUMAN RESOURCES MANAGEMENT SYSTEM " for Over haul Division at HAL submitted by PRASANTH CHANDRAN, Reg.no.9438m0202, in partial fulfillment of the requirements of the MCA degree is the original work of the candidate done during the academic year 1996-97

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SYNOPSIS

Information is the backbone of any organisation. Therefore, it has to be made available at all times to ensure proper decision making and towards this end, information has to be accurate, current , timely, relevant and usable. In other words, an affective information system should be able to provide information to those in need of it, at the time they need it and in the way they need it.

The need for managing and retrieving information led to an extensive use of computers in the business world. The computers have convinced the management that computerised the system is preferable to existing manual system. Most organisations had computerised their application area using the traditional file processing concepts. In a computerised system by itself, does not guarantee effective information retrieval. The effectiveness of a system by an large depends on the way in which the data is organised and managed.

The realization that data is a major management resource has led to the invention of various means of managing data efficiently. Out of this Relational Database Management System (RDBMS) has become popular model and has been used extensively for database management applications.

The report presented here is **HUMAN RESOURCE MANAGEMENT (HURES)).** This has been undertaken for Hindustan Aeronautics Limited, Bangalore. The project was developed in ORACLE 7.0 under HP-UX 9000 platform.

Human Resource Management system involves automation of various activities being carried out and services being offered by Human Resource Development, department of a company. Information is the vital resource required by the firm for effective planning and efficient implementation of various projects in all areas of activities, irrespective of its nature. Human Resource is the most valuable

asset as far as modern progressive establishments are concerned. To make effective and efficient use of this resource careful planning and control methodologies are required. Broad features of human resource system cover the following

- Eliminates manual Compilation of standard reports by personnel department staff. .
- Provides a powerful tool for decision making in areas such as Manpower planning, Profiling on age, qualification/experience for recruitment, promotion details and answers ad-hoc queries.
- System is fully on-line ,user can interact with in the system through terminals.

  Input requirements of Hures are General information such as name, grade, age, state of belonging, cast, religion ,Qualification details, Training details, Family planning and nomination details, Service details such as promotion, demotion and remustering etc....

CONTENTS

INTRODUCTION

1.1 ORGANISATION PROFILE

In December 1940, a far-sighted industrialist late Walchand Hirachand set up a company called Hindustan Aircraft Limited in association with the Government of Mysore. The company was registered on 23rd December, 1940 as a private limited Company with an authorised capital of Rs. Four Crores. The production line was established in collaboration with the International Aircraft Company of U. S. A for the manufacture of Harlow Trainer, Curtiss Hawk Fighter and Vultee Bomber. The first flight of the Harlow Trainer took place on 17th July, 1941. HAL became the principle overhaul base for the South East Asia command of the Allied Forces in the Second World War. At the end of the Second World War, Government of India took over the management of HAL and it was rechristened as Hindustan Aeronautics Limited. With the dawn of independence, HAL refined its objectives to work as an instrument of the national policy of achieving self-reliance and took up design and development of aircraft and aeronautical equipment with licence production. HAL is a organisation where integrated air borne weapon platforms are developed, manufactured and serviced. It is one of the few corporate giants in Asia whose capabilities span the entire range of activity from product conception to after sales support. HAL is also involved in the manufacture and assembly of system for India's Space Programme. Since the company has found it has produced over 3000 aircraft and overhauled over 5600 aircraft's. HAL is a leading public sector organisation coming under the Defence Ministry of India. HAL is engaged in the manufacturing, designing and overhauling of variety of products from basic trainer aircraft's to highly sophisticated aircraft's, their power plants, avionics and aerospace products. Over the years HAL grew into a high technology vertically integrated aeronautical industry with twelve manufacturing divisions and a Design & Development complex with a capability of design, manufacture and overhaul of aircraft's, helicopters, engines and wide range of accessories and avionics. The technological base of HAL is also used to play a

significant path in its diversification and growth. A variety of complex castings, forging and machined parts made in HAL are used in diesel locomotives, naval frigates, earth movers and armoured vehicles. A wide variety of precision items equipment's and assemblies are exported by HAL to leading aircraft and airborne equipment manufactures in the U. K, France, Canada, U. S. A and the C. I. S.

Core business of the company is to manufacture, maintenance, repair and overhaul of fighter, transport, trainer aircraft, helicopters, aeroengines, avionics, accessories, ground support equipment manufacture of structural components for satellites and launch vehicles, software development for aerospace applications.

Today **HAL is the largest Aerospace complex in Asia and the fourth largest aircraft manufacturer in the World**. It plays a crucial role in India's ambitious plans for broad based industrialisation, with growing emphasis on not only self-reliance in defence production, but also to become an international partner in Civil Aircraft Manufacturing and Maintenance.

HAL has four complexes. They are

- **Design Complex**
- **Bangalore Complex**
- **Accessories Complex**
- **MIG Complex**

The Design Complex and Bangalore Complex are located at Bangalore. The Accessories Complex is located at Lucknow, Howrah, Hyderabad and Kanpur. The MIG Complex is situated in Nasik and Kanpur. In addition HAL has liaison offices in New Delhi, Mumbai, Chennai, Vishakapatanam, Moscow and London.

In Bangalore HAL has its registered office, its corporate office and two Complexes - the Bangalore Complex and the Design Complex.

In Bangalore HAL has its registered office, its corporate office and two Complexes - the Bangalore Complex and the Design Complex.

The Bangalore Complex has seven Divisions. They are:

- **Services Division**
- **Aircraft Division**
- **Foundry & Forge Division**
- **Engines Division**
- **Helicopter Division**
- **Aerospace Division**
- **Overhaul Division**

At the Bangalore Complex, the following works are carried out:

- **Aircraft Manufacturing**
- **Overhauling**
- **Engine Manufacturing**
- **Helicopter Designing, Manufacturing and Overhauling**
- **Manufacturing of Casting and Forging**
- **Manufacturing of Aerospace Structure**
- **Developing software for in-house and turnkey project.**

HAL has set up a 100% EOU in collaboration with British Aerospace-BAe HAL Software Private Limited, with its head office and development centre at Bangalore. Air Traffic Management Systems project will also be launching another joint venture company at Bangalore for the repair and maintenance of the aircraft's of all the Private Air Taxi operators currently operating in India.

1.2 ABOUT THE OVERHAUL PROCESS

Hindustan Aeronautics Limited, Bangalore Manufactures and Overhauls the JAGUAR and KIRAN aircraft's, while the MIRAGE-2000 series of aircraft have been imported from Dassault Aviation, France. Each one of these aircraft's have a set of manuals which are supplied by the respective manufacturer. These manuals contains information pertaining to all the serviceable parts of the aircraft All these documents are used to carry out the Major servicing or Overhaul. Each and every rotable of the aircraft is removed and serviced according to the specification out lined in the manuals. The aircraft is given a new lease of life after overhaul.

1.3 ABOUT THE PROJECT

Human Resource Management system involves automation of various activities being carried out and services being offered by Human Resource Development, department of a company. Information is the vital resource required by the firm foreffective planning and efficient information of various projects in all areas of activities, irrespective of its nature. Human Resource is the most valuable asset as far as modern progressive establishment are concerned. To make effective and efficient use of this resource careful planning and control metrologies are required. Broad features of human resource system cover the following

Eliminates manual Compilation of standard reports by Personnel department staff. Provides powerful tool for decision making in areas such as Manpower planning Profiling on age, qualification / experience for recruitment, promotion details

System is fully on-line ,user can interact with in the system through terminals and system is equiped with the facility for providing answers to ad-hoc queries.

SYSTEM ENVIRONMENT

2.1 THE COMPUTER SYSTEM :

SOFTWARE REQUIREMENTS :

OPERATING ENVIRONMENT	:	HP-UX9.0
RDBMS PACKAGE	:	ORACLE 7.0 TOOLS
		SQL * PLUS V2.0
		SQL* FORMS V3.0
		SQL* MENU V5.0
		SQL* REPORTWRITER V1.1
		PL/SQL V2.0
		PRO * C
		PRO * COBOL

HARDWARE REQUIREMENTS :

HARDWARE	:	HP-9000/807(G30)
PROCESSOR	:	68030
CLOCK SPEED	:	48 MHz
MEMORY(RAM)	:	16 MB
DISK SPACE	:	300 MB * 3
TERMINALS	:	MINIMUM 2 NOS.
CARTRIDGE TAPE DRIVE	:	525 MB(ONE)
SPOOL TAPE DRIVE	:	1600 BPI(ONE)
PRINTER	:	900 LPM LINE PRINTER

THE SYSTEM WHERE DEVELOPED :

HCL-HP 9000 SYSTEM CONFIGURATION :

SYSTEM	:	HP-9000/807(G30) 64 USER

SOFTWARE :

OPERATING SYSTEM	:	HP-UX 9.0
		PC-LINK
		COBOL COMPILER
		C / ANSI-C COMPILER
		ETHERNET S/W TCP/IP
		SUPER SORT/MERGE

ORACLE V 7.0 ENGINE WITH THE FOLLOWING :

- EXPORT/IMPORT
- SQL * LOADER
- TPO(Transaction Processing Operation)
- PL/SQL
- SQL * NET
- SQL * PLUS
- SQL * FORMS
- SQL * REPORT WRITER
- SQL * MENU
- PRO * C
- PRO * COBOL

HARDWARE :

CPU	:	HP-PA RISC CPU @ 48 MHz
CACHE	:	128 KB
FLOATING POINT PROCESSOR	:	1 NO
RAM	:	64 MB
MASS STORAGE	:	1*2 GB
		1*2 GB TOTAL : 4GB

SCSI CONTROLLERS	:	2 NO
CARTRIDGE TAPE DRIVE(CTD) 525 MB	:	1 NO
DIGITAL AUDIO TAPE DRIVE(DAT) 2GB	:	1 NO
SPOOL TAPE DRIVE(STD) 1600 BPI	:	1 NO
LINE PRINTER 900 LPM	:	2 NO
CONSOLE	:	1 NO
TERMINALS	:	32 NOS.
1.2 MB FLOPPY DISK DRIVE (THRU PC/AT)	:	1 NO
ETHERNET LAN INTERFACE	:	1 NO

2.2 THE OPERATING SYSTEM (HP-UX)

The HCL-HP 9000 system uses the HP-UX operating system. It represents improvisation and innovation in the face of need. The HP-UX system is a time sharing system. HP-UX is not structured as a single OS program. It is a modular integrated set of software.

The HP-UX system serves as an interactive interface between the user and the computer system. The use of software tools instead of single large program distinguishes the HP-UX system from other systems. The HP-UX is a combination of an OS program, utilities and specialised applications that works together to provide an time sharing system that allows multitasking. It differs from other systems in that it has a smaller kernel and relies on utilities to do most of the work.

SALIENT FEATURES OF HP-UX OPERATING SYSTEM :

- Multi-user, Multitasking, Communication Capabilities
- Hierarchical file structure
- Portability

- Text processing and Documentation aids
- Compiler construction aids
- I/O Independence
- I/O Redirection and Piping capability
- Modular Design
- Increased productivity

PREFACE OF HURES

3. PREFACE OF HURES

The role of management is to optimize the use of resources available at it's disposal. The role of manpower planning is to incorporate the planning so that all resources are used together in the best possible conjuction.

Human Resources are , and will continue to be universally recognized on the key to any organization's growth. The concept role and range of activities involved in Human Resource Management is how the efforts of the people who make up the enterprise can be so organized and developed on order to attain the highest level of efficiency, adaptability and productivity. The concept of HRD can help the organization to develop and utilize the potentials of it's people, so as to achieve quality of work life for them and also to enhance our collective contribution to the economy and society. The company has been moving towards comprehensive HRD system which aims at improvement in quality of life, work life and life as a whole.

Objectives

* Evolving appropriate system and policies to ensure a pervasive 'enabling' culture in the organization and individual capabilities.
* providing the right Human Resources to manage company's business plans,
* Initiating /Managing organization revitalization process on a continuing basis.
* Increase individual capabilities/effectiveness of the organization to recruit and motivate talented employees.

The organization plans to introduce **HRD** system in the following six phases.

- Formulation of Human Resource Strategy
- Action research project on selected location
- Extension of Role Analysis and Research projects from selected to all other locations in the organization.
- Implementation of **HRD** 's other subsystem such as selection ,induction and placement, career planning training and development, manpower planning, manpower forecasting etc.
- HRD for work men.
- HRD consolidation and innovation.

The HRD policy within a firm will therefore be an integral part other over all company policy concerning its activities and operation. Range of activities which can be regarded as coming within the sphere of human resource management are

Corporate Planning

Various activities that comes under corporate planning are reviewing company's forward objectives and plans. Integration of personnel function with other function in a achieving objectives.

Organizational Structure

Examining management structure and arrangements for authority and responsibility work organization, manning ratio , hours of work, shift and job enlargement.

Man Power Planning

Human Resource planning is done in accordance with organization's business plans. Based on man power needs we formulate recruitment plans.

First step in manpower forecasting is to assess how many people in various job categories or occupations need to be recruited annually. Then future plans for the firm will need to be analyzed to estimate the effect, they will have an impact on personnel requirements .This will serve as the basis for controlling the numbers of personnel employed in any department. Other activities that comes with in this domain are

Day to day administration of recruitment and selection.

Before selecting an employee for a post ,every attempt should be made to ensure that we know what we are looking for. For that standard reports ,that are being generated by the system can be used effectively.

Long term and immediate recruiting programs.

Labor turn over and absenteeism analysis.

Redundancy procedures.

Many employee are declared redundant way year. This problem can be avoided or lessened by careful planning. The system under development can be used as an effective tool for man power planning. If forecasts of future requirements reveals a reduction in personnel ,then the whole area of recruitment ,training ,promotion, transfer and recruitment can be reviewed in advance.

Man power Development

Every manager has a personnel responsibility to raise the level of skills of his employees and to increase their ability and readiness to meet changes in work and

organization. Establishment like industrial training boards and training opportunity schemes (tops) are used to impart technical and non technical skills to employees . the system under development is designed keeping in mind, the needs of HRD department to short list eligible candidates ,who are entitled to undergo training programs, by way of generating reports that provides a glimpse of an employee's educational and career charts.

Major training programs include

- Induction Training
- Operator Training
- Craft Apprentice Training
- Craft Apprentice Training
- Clerical and Commercial Training
- Technical and Technological Training
- Management and Supervisory Training

Last step is training evaluation and appropriate plan of action.

Remuneration

1) Development of appropriate wages and salaries structures.
2) Job evaluation and grading,
3) Incentive schemes,
4) Merit Rating,
5) Local and National surve

Industrial Relation

The application of employment legislation, Disciplinary , grievance and dispute procedures.

Employee Services

Family welfare

Family planning

Family nomination and particulars

Personnel Information System

Contains details regarding technical and non technical skills and man power inventory.

RECORDS AND STATISTICS.

Production of meaningful manpower forecasts and planning depends considerably on the availability of reliable and objective information about the firms employees. Type of records that the manager needs to keep will vary according to the extent of the personnel information's and the degree of statistical analysis required.

Basic information's that need to be kept about employees will probably include personnel history sheet, orginal application form, productivity evaluation report records of internal movement such as Transfer, Demotions and Promotions. This should be designed to give an up to date picture of each member of the organization.

JOB EVALUATION

The policy of a firm is to reward it's employees according to the value of their job. A job evaluation excise is desirable , so that the relative works of the different jobs can be ascertained. System under development is capable enough to evaluate jobs in a more objective and systematic manner.

Some strategies are ranking, classification, points system and factor comparison. Under this system , jobs are arranged in order of importance or relative

value in list fascion. This is a simple method and quite suitable for denoting different levels of responsibility with in a department. Here job grades are defined first in the form of duties and various types of jobs, then jobs are compared and put in to appropriate grades.

Development of HURES

Before developing Human Resource Services System. It should be proceeded by a careful analysis of the needs and requirements of the organization and an assessment of the duties to be carried out.

Various activities such as ensuring regular diagnosis of organizational effectiveness and appropriate action plan. Organizational research and regular reports to top management. Organizational structure - periodic review of it's efficiency.

The functions and procedures involved in the above mentioned activities are keeping track of personnel records ,doing labour turn over etc. Another major responsibility of HRD department is conducting interviews and selection procedures smoothly. HRD department is concerned with people in a wide variety of occupations at all levels in this organization , including senior management.

HURES system can play a vital role in development of servicing and administration ,functions as well as supplying forecasts of it's own covering manpower needs ,requirement availability, training potential etc. To achieve long term and short term objectives , it is essential that the personnel function in the overhaul strategy.

Organizational structure of departments need to be examined to ensure that the system that we are going to develop will meet the needs of the organization and it's proposed objectives. By critically examining the work being carried out, we can develop

best methods under prevailing circumstances and by assessing the work involved , we develop a set of standards which can be used to control volume of work and number of people involved.

SYSTEM STUDY AND ANALYSIS

4.1 NEED FOR THE SYSTEM

In Today's fast moving world , automation has become the buzz word in all domains of modern day life. For the efficient and effective utilization of available resources, timing availability of accurate information is very important.

As far as Human Resource Management is concerned to achieve maximum utilization of skilled man power with out causing much overhead, automation of activities like storage and retrieval details such as basic data at recruitment, educational qualification ,service details(if any) ,before joining HAL, service details while he/she is working in HAL, details of Training received family planning and information regarding reward/punishment he received during his tenure in HAL.

Main objective of this system is elimination of manual compilation of standard reports by personnel department staff. Around 20 standard reports can be generated from the system at present. It can be used as a powerful tool for decision making in areas such as manpower planning profiling on age ,qualification/experience for recruitment ,promotion, demotion etc....

In addition to the standard reports , we can generate ad-hoc reports pertaining the various aspects of employees for short term operational level decision making. The proposed system is fully on-line, to avoid overhead of manual preparation of data and then making entry into the system. User can directly interact with system through nodes distributed among various departments spread along the length and breadth of the establishment varying from corporate office to divisional head quarters.

Existing System

The existing system is inadequate for the present requirements on it is being implemented on the univac 1100/60 Computer using the DMS1100 database management package and is proving it difficult to upgrade to the growing needs of the managers.

Limitations of existing system.

It is very difficult to upgrade the system to meet the growing needs of the manager. On-line enquiries are not possible which is very vital for the managers to monitor current status of the system.

Since the strategy adopted here is batch processing, errors in data cannot be found during the data entry stage and it is found only in the processing stage. Enforcing integrity constraints for validation purposes are complicated ,due to the basic nature of the package, which is being used to implement the system. To find out the errors , the data is processed and various validation reports and error listing are taken and corrective action. are

one based on it. It leads to the wastage of time and resources. One major drawback of existing system is ,it is not an on-line system. Keeping all these limitations in mind we have developed the new system.

Proposed System.

An on-line computerized system saves time and provides up-to-date information .Precise and accurate information is the most vital resource required by manages in the modern day industries. Various on line enquiries and reports are to be produced which helps them to make decision with least possible wastage of time.

* Maintenance of the status of the employees at any date, according to department wise, grade wise, qualification wise etc.
* Due to the on line nature of the proposed system identification of various bottleneck that can come in the way of decision making in are such as recruitment and promotion
* Monthly reports help manager to monitor current status of the activities of human resource department.
* Avoids data redundancy and thus save time and also errors are reduced considerably.
* Table security using table level locking.
* Record security using record level locking.
* Multiple locking.
* Capturing data through SQL & forms.
* Using special tools to develop reports.
* To give required information almost instantaneously

4.4 Selection of the software

This system is of integrated nature, data flows from tne module to another. This may result in postponing of entries and cause disturbances to regular work. An integrated system on UNIX environment is ideal due to its multi-user nature. **ORACLE** is flexible and application development is easy and is also portable. Hence **ORACLE** on **UNIX** environment is chosen for current project.

SYSTEM DESIGN

5.1 *Design Methodology*

The system design is the last phase that indicates the final system and the process of the file system. In the design phase of HURES ,the database tables ,input screen design and output record design etc. are designed.

- The database tables are designed by using all the necessary fields in a compacts manner. The redundancy and duplication of fields are avoided.
- All input screen in this system are user friendly and are designed in an understandable format. The size of all screens are standardized.
- Menu's designed in this system are brief compact and self explanatory. The menu's are sharp and any novice user can invoice the system. Pop-up menus are also used to invoice varying sub menus
- Reports generated here gives the minute information which helps manager to take vital decision.

The importance of software design can be stated with a single word-quality. Design is a place where quality is fostered in software development .Design is the only way where requirements are actually translated into a finished software product or system. On executing **HURES**, it prompts for the password and if it matches , the control passes to the main menu which consists of three sections.

* **DATA ENTRY**
* **REPORTS**
* **ENQUIRY**

DATA ENTRY:

It consists of fourteen sub Options

- **Basic data at Recruitment.**

This form is used to input personal details such as badge number, name, sex, marital status, date of birth, date of appointment etc.

- **Family particulars and nominations.**

This form is used to enter datas pertaining to an employee's family such as marital status, information regarding kith & kin and number of children.

- **Family planning details**

This form is used to input family planning details of an employee and if so the benefit is deriving out of that.

- **Training before joining HAL**

This form is used to input employees training details before joining HAL such as course. institution, duration etc.

Promotion

This form is used to input information regarding an employee's promotion.

- **Transfer**

This form is used to iput information regarding employees transfer (if any).

- **Demotion**

This form is used to input demotion details.

- **Remustering**

This form is used to keying mustering details of employees.

- **Educational qualification**

This form is used to input employees educational qualification details.

- **Training after joining HAL**

This form is used to input training details of employees after joining HAL

- **Service profile(before joining)**

This form is used to input service details of employees before joining HAL.

- **Termination**

This form is used to keying termination details of employees.

- **Seniority**

This form is used to input seniority details of employees.

- **Service profile(after joining)**

This form gives employees service details after joining HAL.

REPORTS

The system has got the capability to generate standard as well as ad-hoc reports on demand to facilitate management to take stock of the current employment status as well as it can be used as a decision making tool.

ENQUIRY

The system is designed in such a way that it can be used for the purpose of retrieving information on-line using enquiry forms.

5.2 INPUT DESIGN

The Input Design is the link that ties information system into the world of its users. Input Design consists of developing specification and procedures for data preparation steps necessary to put transaction data in a form that is usable for Computer Processing, Data entry, activity of putting data into computer processing

Main objectives that are guiding us in the design of input stage are

Controlling the amount of inputs.

Avoiding inordinate delay

Controlling errors

User friendly screen format that can reduce the burden on end users , who are not highly proficient in computers .An important step in input design stage is the design of source document. Source document is the form on which data are initially captured. Once the details pertaining to the data, that should be included are elicited ,next step is the design of document lay out. The layout organizes the document by placing important information where it will be noticed and establishing the appropriate sequence of item. The strategies adopted here in designing the data entry forms are in such a way that, it is possible for the user to provide information by following a logical sequence. Main features incorporated in the designing of important forms are ability to delete and modify the existing data and addition of new information.

Customized messages are given in place of system messages, while data manipulation is being carried out. Enforcing integrity constraints, data validation procedures are done in such a way that end user is free from such daily chores.

5.3 *Output Design*

Output design will show all the information and data after processing input data

Major components of output design are

- **Enquiry Screens**
- **Reports**

Since HURES is an on-line system, enquiries are being made regarding employees status such as Basic data recruitment, Educational profile, Designation, Training and Service details.

Similarly standard (around 20) as well as Ad-hoc reports can be generated on demand like

- **Bio - data**

This report gives details about personnel badge number, name, department to ich he/she belongs, date of birth, date of joining HAL ,date of promotion, designation, qualification profile experience profile etc. It can be used as a tool for decision making in areas such as recruitment, promotion etc....

- **Dept. / Grade wise strength distribution statement**

This report gives details about employee distribution in department wise as well as grade wise.

- **list of employees in overhaul division**.

This gives list of employees currently working in overhaul division.

- **Age profile**

This report provides a detailed age wise description of employees .

- **List of officers having Engineering Qualification.**

This report provides details regarding officers having Engineering Qualifications such as qualification, decipline, institution, year of passing and class etc..

- **Family details**

This reports provides information about an employee's family.

- **Service profile**

This reports provides detailed description regarding an employee's career span ranging from the date of joining to the current date.

- **Qualification profile**

This report gives us details regarding an employee's educational back ground.

- **Training Profile**

This report gives us a brief description of training an employee has received during his tenure in HAL. It contains decription of the course he has under gone.

- **Department/grade wise distribution of SC/St employees.**

This report gives the details regarding SC /St. employees according to the grade and department where the employee is working.

5.3 Data Base Design

Data Base Design are designed to manage large bodies to information. The management of data involves both the definition of structures for the storage of information and provision of mechanism for the manipulation of information. In addition, the data base system must provide for the safety of the information solved, despiye system crashes or due to attempts at unauthorized access for developing an efficient database, we have to fulfill certain condition such asControlled Redundancy

- Ease of use
- Data independence.
- Accuracy and Inegrity.
- Recovery from Failure.
- Privacy and Security.
- Performance.

For achieving the above mentioned Criteria's, we have to make use of various features that are available with the RDBMS padean for By enforcing integrity constraints, we can ensure data integrity and reduce data inconsistency to a great extend.

* Recovery from failures using back up failures.
* By using table level as well as row level locking facilities, we can avoid Concurrent access nomalies.
* Another important feature of RDBMS is the logical and physical data independence.
* In addition to the Security mechanism provided by RDBMS, we have provided system password to near system.
* To avoid data redundancy, we have used the concept of normalization extensively.

Normalization

Normalization is the term obtained from Latin word 'NORMA' which means that square used by the Carpenter. Normalisation is the process of simplifying the relationship between data elements in a record. Through normalization a collection of data in a record structure is replaced by successive record structures that are simpler and can be managed efficiently Normalization is being carried out for four reasons

- To structure the data so that any pertinent relationship between entities can be represented.
- To permit simple retrieval of data in response to Query and reports required.
- To simplify data maintaince procedures such as insertion, updataion and deletion.
- To reduce the need to be structure or reorganize data with new application requirements arise.

Major normalization strategies are

First Normal Form

First normal form is achieved when all repeating groups in a record are removed, so that record is of fixed length. A repeating group, reoccurance of a data item or group of data item within a records actually another relation. Hence ,it is removed from the record and treated as an additional record structure or relation.

Second Normal Form

Second normal form is achieved when a record is in first normal form and each item in the record is fully dependent on the primary record key for identification. In other words, analyst seeks functional dependency. A data item is functionally dependent if it's value is uniquely associated with a specific data item. To achieve second normal form every data item in a record that is not dependent on the primary key of the record should be removed and used to form a separate relation.

Third Normal Form

Third normal form is achieved when all transitive dependencies are removed from a record i.e,If A is functionally dependent in B and B is functionally dependent in C then A is functionally dependent in C.

TESTING AND IMPLEMENTATION

TESTING AND IMPLEMENTATION

The implementation is the final and important phase. It involves user training, system testing and successful running of the developed proposed system. The developed system is tested by the user and changes are made according to their needs. The testing phase involves the testing of developed system using various kinds of data.

An elaborate testing of data is prepared and the system is tested using that test data. While testing errors are noted and corrections are made. The correction are also noted for future use. The users are trained to operate the developed systems. Both the hardware and software securities are made to run the developed system successfully in future.

TESTING

System testing is the stage of implementation which is aimed at ensuring that the system works accurately and efficiently before live operation commences. Testing is vital to the success of the system. System testing makes a logical assumption that if all the parts of the system are correct, the goal will be successfully achieved. The candidate system is subject to an variety of tests: on line response, volume, stress, recovery and security and usability tests. A series of testing are performed for the proposed system before the system is ready for user acceptance testing.

The testing steps are :-

- **Unit Testing**
- **Integration Testing**
- **Validation**
- **Output Testing**
- **User Acceptance Testing**

❋ **Unit Testing :**

Unit testing focuses verification efforts on the smallest unit of software design the module. This is also known as "Module Testing". The modules of the POPS are tested separately. This testing was carried out during programming stage itself. In this testing step each module is found to be working satisfactorily as regards to the expected output from the module.

❋ **Integration Testing :**

Data can be lost across an interface ; one module can have an adverse effort on another ; subfunctions, when combined, may not produced the desired major functions. Integration Testing is a systematic testing for constructing the program structure, while at the same time conducting tests to uncover errors associated within the interface. The objective is to take unit tested modules and build a program structure. All the modules are combined and tested as a whole. Here correction is difficult because the isolation of causes is complicated by the vast expenses of the entire program. Thus in the integration testing step, all the errors uncovered are corrected for the next testing steps.

❋ **Validation Testing :**

At the culmination of integration testing, software is completely assembled as a package, interfacing errors have been uncovered and corrected and a final series of software tests begins - Validation test begins. Validation testing can be defined in many ways, but a simple definition is that validation succeeds when the software functions in a manner that can be reasonably expected by the customer. After validation test has been conducted, one of two possible conditions exists.

(i) The function or performance characteristics confirm to specification and are accepted.

(ii) A deviation from specification is uncovered and a deficiency list is created .

Proposed system under consideration has been tested by using validation testing and found to be working satisfactorily.

❋ **Output Testing :**

After performing the validation testing, the next step is output testing of the proposed system since no system could be useful if it does not produced the required output in the specific format. The output generated or displayed by the system under consideration are tested by asking the users about the format required by them. Here, the output format is considered into two ways. One is on screen and another is printed format. The output format on the screen is found to be correct as the format was designed in the system design phase according to the user needs. For the hard copy also, the output comes out as the specified requirements by the user. Hence output testing does not result any correction in the system.

❋ **User Acceptance Testing :**

User acceptance of a system is the key factor for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with the prospective system users at time of developing and making changes wherever required.

This is done in regard to the following point :

- ❋ Input screen design
- ❋ Output screen design
- ❋ On-line message to guide the user
- ❋ Menu driven system
- ❋ Format of ad-hoc reports and other outputs

TEST DATA :

The above testing are done by taking various kinds of test data. Preparation of test data plays a vital role in the system testing. After preparing the test data the system under study is tested using that test data. While testing the system by using test data errors are again uncovered and corrected by using above testing steps and corrections are also noted for future use.

USER TRAINING :

After the system is implemented successfully, training of the user is one of the most important sub tasks of the developer. For the purpose user system manuals are prepared and handed over to the user to operate the developed system. Here the users are trained to operate the developed system. Both the hardware and software securities are made to run the developed systems successfully in future.

IMPLEMENTATION :

Implementation is the process of converting a new or revised system design into an operational one. It is the key stage in achieving a successful new system because, usually it involves a lot of upheaval in the user department. It must therefore be carefully planned and controlled. Apart from planning the two major tasks of preparing for implementation are education and training of users and testing of the system. Education of users should really have taken place much earlier in the project when they were being involved in the investigation and design work. Training has to been given to the staff regarding the new system. Once staff has been trained, the system can be tested.

SYSTEM SECURITY

SYSTEM SECURITY

Security is critical in system development. Every candidate system must provide built-in features for security and integrity of data. Without safeguards against unauthorised access, fraud, embezzlement, fire and natural disasters, a system could be so vulnerable as to threaten the survival of the organisation.

To do an adequate job on security, the risks, exposure, costs and specific measures such as passwords should be analysed to provide protection. In addition, backup copies of software and recovery restart procedures must be available when needed.

The amount of PROTECTION depends on the sensitivity of the data, the reliability of the user and the complexity of the system. The motives behind security are to keep the organisation running, protect data as an asset and seek management support for more installations.

THREATS TO SYSTEM SECURITY :

The list of potential threats are :

- **Errors and omissions**
- **Disgruntled and dishonest employees**
- **Fire**
- **Natural disasters**
- **External attack**

SYSTEM SECURITY MEASURES

After system security risks have been evaluated, the next step is to select security measures. The measures are :

IDENTIFICATION :

It is scheme for identifying persons to the systems based on "Something you know" such as a password or a picture badge, "Something you are" such as a finger print or voice print or "Something you have" such as a credit card, key or special terminal.

ACCESS CONTROL :

Controlling access to the computer facility is secured through encoded cards or similar devices. Encryption prevents intruders from accessing data by scrambling messages across telephones to their destination.

AUDIT CONTROLS :

Auditing must be supported at all levels of management. Audit controls protect a system form external security breaches and internal fraud or embezzlement. Various software programs are available to help in the audit function.

SYSTEM INTEGRITY :

This line of defence safe guard and functioning of hardware, software, physical security and operating procedures. Proper backup of hardware and software are extremely important.

CONCLUSION

CONCUSION

The Human Resource Management System (Hures) has been developed for the present requirements. On-line computerization of activities that is being carried out in HRD department of Overhaul Division have been necessitated by increasing volumes and complex nature of the information that is to be processed.

On-line information gives the manager ,flexibility to act decisively and in time. The developed system has to a good extend succeeded in rectifying the problems ,that are present in the existing system. Reports generated within live data have proved to be informative. The system can be further enhanced to accommodate a host of

features, t hat are currently not included in the system.

The newly developed system consumes less processing time and productivity is increased. All transactions are processed and posted immediately. Since screens provide on-line help messages that are user friendly, any end ures get familiarized with it's usage. As it is developed in ORACLE , it provides all security features of relational data base.

The goals that have been achieved by the developed system are

- It simplifies the operation.
- It reduces the processing time and increase productivity.
- Transactions are processed immediately and subsequent posting is also done.
- User friendly screens to enter the data and enquire the data base tables.
- On-line help message to operate the system.
- The intermittent user can easily access the style without much problem.
- Provides hardware and Software securities.
- Portable and flexible for further enhancement.

APPENDIX

RDBMS - AN OVERVIEW

Data Base Management System (DBMS)

A database system is a collection of interrelated data that are to be stored together in a single location. It enables sharing of data among various users as and when required. A DBMS is software with capabilities of organise, manipulate and manage the data.

DBMS have evolved from hierarchical to network to relational models. Today the most widely accepted database model is the Relational model. The relational model has three aspects.

1. Structures:-

Structures are well defined objects that store the data of database. Structures and the data contained within them can be manipulated by operations.

2. Operations:-

Operations are clearly defined actions that allow users to manipulate the data and structures of a database. The operations on a database must adhere to a predefined set of integrity rules.

3. Integrity rules:-

Integrity rules are the laws that govern which operations are allowed on the data & structures of a database. Integrity rules protect the data and the structures of a database.

RDBMS offers benefits such as

- independence of physical data storage & logical database structure.
- variable & easy access to all data
- complete flexibility in database design.
- reduced data storage & redundancy.

RULES FOR RDBMS

Dr.E.F.CODD presented twelve rules that any database must obey if it is to be considered truly relational. The rules stream from a single rule called the **'Zero Rule'** or the **'Overall Rule'** which could be started as follows.

1. Information rule:

All information in a relational database including table names, column names are represented explicitly by values in tables.

2. Guaranteed Access rule:

Every piece of data in a relational database, can be accessed by using a combination of a table name, a primary key value that identifies the row and a column name that identifies the cell.

3. Systematic treatment of Null rule:

The RDBMS handle records that have unknown or inapplicable values in a predefined fashion. Also the RDBMS distinguishes between zeros, blanks and nulls in records and handles such values in a consistent manner that produces correct answers, comparisons & calculations.

4. Acting on-line catalogue based on the Relational model:

The description of a database and its contents are database tables and therefore can be queries on-line via the data language.

5. Comprehensive data sub language rule:

A RDBMS support several languages but at least one of them allows the user to do all of the followings: define tables/view, query and update data, set integrity constraints, set authorisation and define transactions.

6. View updating rule:

Any view that is theoretically up datable can be updated using the RDBMS. A view is theoretically up datable if changes can be made to the tables that effect the desired changes in the view.

7. High-level Insert, Update & Delete:

The RDBMS supports insertion, updation and deletion at a table level. For example, in SQL delete can be performed on a set of select records.

8. Physical data Independence:

The execution of ad hoc request and application programmes is not affected by changes in the physical data access and storage methods.

9. Logical data Independence:

Logical changes in tables and views of adding/deleting columns or changing field lengths do not necessitate modification in application programs or in the format of ad hoc requests.

10. Integrity Independence:

Like table/view definitions, integrity constraints are stored in the online catalogue and therefore can be changed without necessitating changes in application programs or in the format of ad hoc requests. Additionally, integrity constraints can not be by-passed.

11. Distribution Independence:

Application programs and ad hoc requests are not affected by change in the distribution of the physical data.

12. Non subversion rule:

If the RDBMS has a language that access the information of a record at a time this language can not be used to bypassed the integrity constraints. Inorder to adhere to this rule the RDBMS must have an define catalogue that contains the constraints must have logical data independence.

ORACLE - AN OVERVIEW

ORACLE is a comprehensive operating enviornment that packs the power of a mainframe Relational DBMS with your microcomputer. It provides functional programs that you can use as tools to build structure and perform tasks. Because applications developed on ORACLE are completly portable other versions, the programmer can create a complex application in a single-user enviornment and then move to a multi-user platform.

ORACLE accesses and manipulate the data stored in a relational database using the structured query language (SQL).

ORACLE'S data access tools include,

- **SQL * PLUS**
- **SQL * FORMS**
- **SQL * REPORT WRITER**
- **SQL * MENU**
- **SQL * GRAPH**
- **PL/SQL**

and it also includes a lot of utilities such as EXPORT/IMPORT , SQL * LOADER etc. and programming tools include the series of PRO * programming interface like PRO * C, PRO * COBOL etc. An application developed on ORACLE will be able to keep pace with growth and change.

SECURITY & CONTROL:

ORACLE has several features that ensure the integrity of the database. If an interruption occurs in processing, a roll back can reset the database is a pt. before the disaster. If a restore is neccessary, ORACLE has a roll forward command for recreating the database to its most recent safe point. ORACLE provides users with

several functions for securing data. Grant and Revoke commands limits access to information down to the row and column levels. Views are valuable features for limiting access to the primary levels in the database.

PERFORMANCE:

ORACLE has been constantly improved to perform competitively on the largest database. Because RDBMS have been hampered a reputation for slow access limits, ORACLE has had to prove itself continually. ORACLE has unique clustering techniques for storing data on the disk is another performance gain. The active data dictionary which automatically updates and logs modificaitons to the database provides modifications. ORACLE stores the DBMS kernel in extended memory. So main memory is available for other applications.

DATA ACCESS MANIPULATION TOOLS

The main data access manipulation tools are

SQL * PLUS:

This allows users, depending on their access grants, to create, to manipulate or to drop tables from the database. It permits generation of simple reports, capturing the results from a query and formating them, perform ad hoc query against the database. It is one of the easiest languages to use.

SQL * FORMS:

SQL * FORMS provides a convenient and easy method for non experts to query a database and update, delete or add information. SQL * FORMS offers the facility of incorporating PL/SQL statements and blocks in triggers.

SQL * REPORT WRITER:

This tool is a menu-driven report formatting tool that uses SQL to create proffesional loadging reports and merged specifically output. The developing of reports through, this is easy due to the menu driven nature.

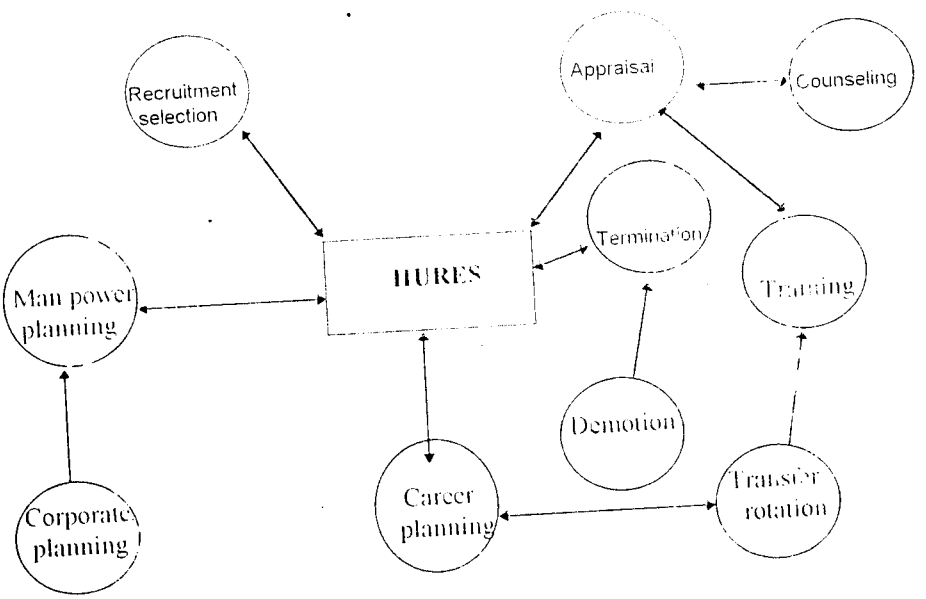
PL/SQL:

This tool permit a set of SQL commands to be clubbed together in a block and given to ORACLE. It provides conditional, looping, procedural capabilities which are traditionl to third generation languages. Thus it facilitates procedural capabilities in the RDBMS.

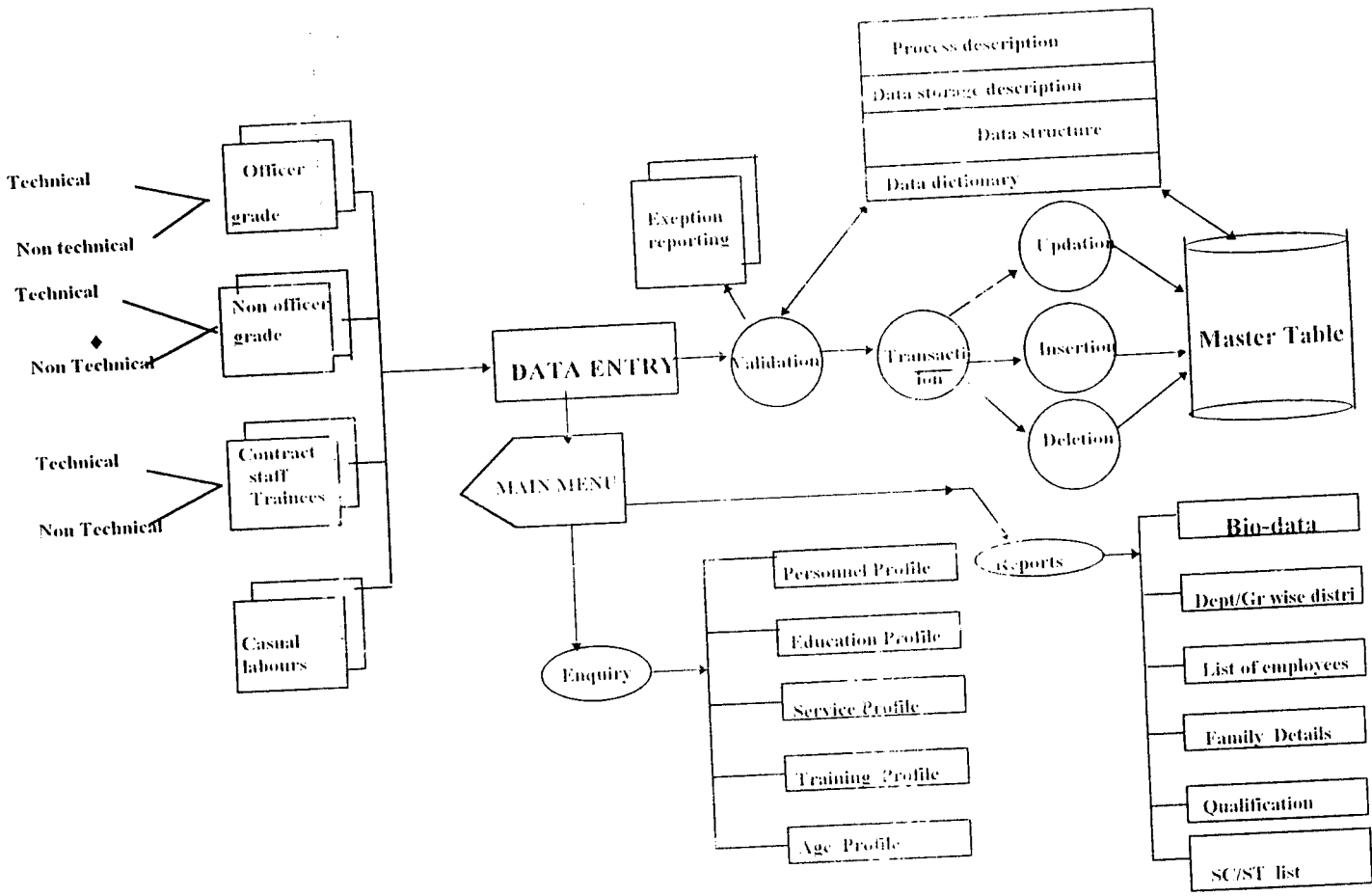
SYSTEM FLOW

AND DFD

BLOCK DIAGRAM.



DATA FLOW DIAGRAM



CODIFICATION

CODIFICATION

In this section , we take a look at the methodologies adopted in designing different codes and it's structures.

Pb.no.

This code stands for personnel badge number. It has get seven digit. To find the check digit ,which corresponds to the given number ,initially number is multiplied by 100 followed by the resulting number is divided by 97 then the remainder is subtracted from 97 to obtain the check digit.

4	6	4	8	1

Eg:

46481*100/97 = R
check digit is 97 - R.

NATIONALITY

Here people from different parts of the world got different codes that designates their nationality.

Such as

CODE	COUNTRY
101	INDIA
102	BRITAIN
103	AMERICA
104	EUROPE
105	CANADA
106	AFRICA
107	MIDDLE EAST
108	PAKISTAN

GRADE

It is a four digit code which depicts the various position in the organization.

Few examples are

6	1	0	1

Supervisor

5	4	8	4

Non supervisor

2	3	5	1

Mechanic

Department

Dept. is identified by four digit number .First digit corresponds to division code and from the second digit onwards ,code corresponds to dept.

1	3	2	1

1 Aircraft Division
321 Machine Shop.

Division code

Division is identified by single numeric integer. The following are the codes for all division in HAL(BC)

DC	DESCRIPTION
0	Service
1	Aircraft
2	Overhaul
3	Foundry & Forge
4	Aeroengine

TERMINATION

Termination code range from 01 to 14.

Termination code	Type
01	Super annuation
02	Voluntery Premative
03	Resignation.
04	Details
05	Medical Grounds
06	Dismissal
07	Loss of leave

EDUCATIONAL CODE

Educational Qualification is identified by a six digit code.
It can be divided in to three sections. First section consists of a single digit, usually the first one. It denotes the qualification. Second section consists of two digits, which stands for discipline.

4	0	1	2	3	5

Qualification code	Description
0	Doctorate
1	Post graduate
2	P G Diploma
3	Professional
4	Graduate

Discipline	Description
01	Engineering
02	Technology
03	Arts

Promotion

This is identified by a two digit code. First digit stands for the various types of movements with in the occupational hierarchy.

CODE	DESCRIPTION
0	Remustering
1	Job rotation
2	Promotion
3	Appointment
4	Transfer.
5	Review recategorisation
6	Deputation.

DEMOTION

There are three types of demotions. It is denoted by two digit number.

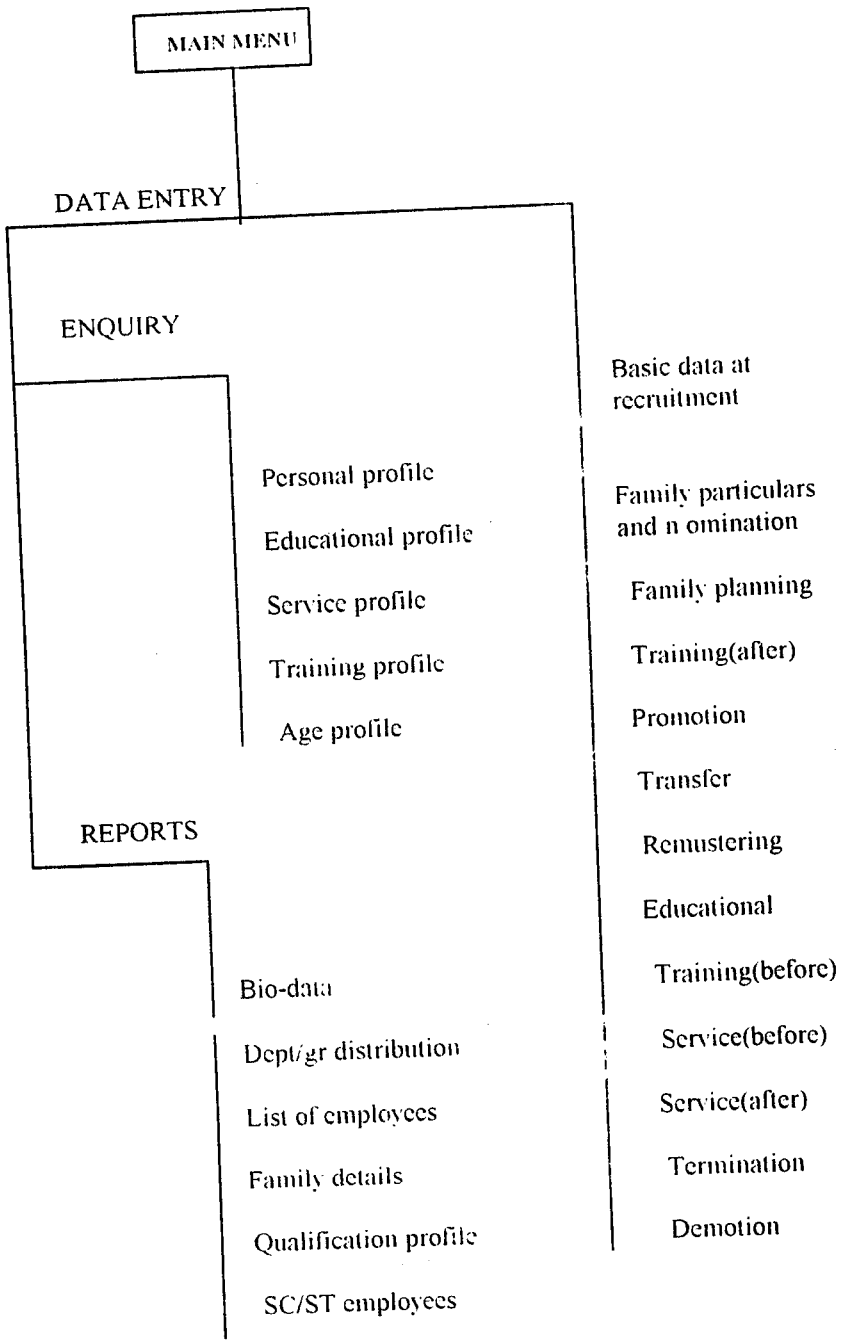
CODE	DESCRIPTION
00	Demotion
01	Disciplinary
02	Unsatisfactory probation

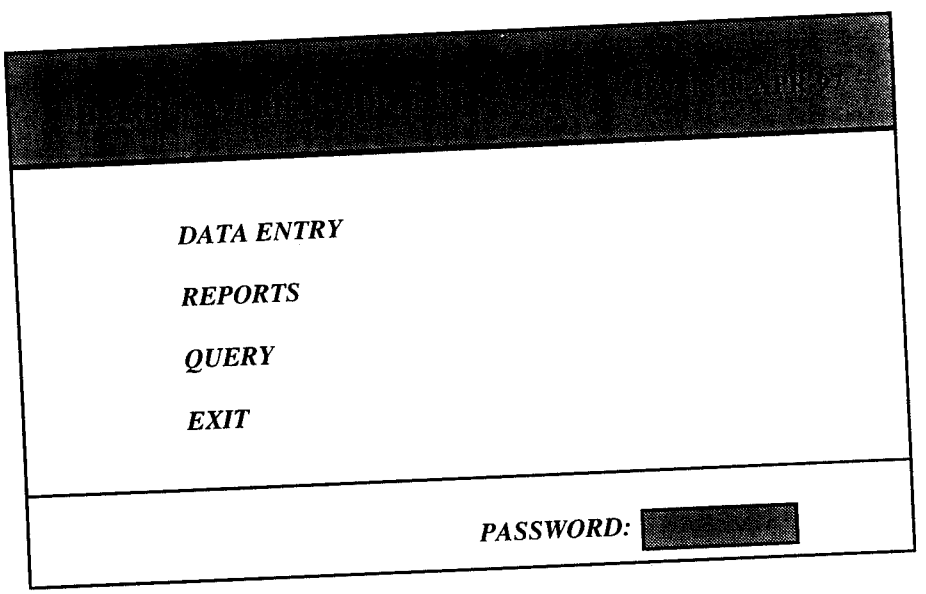
0	0

SCREEN DESIGN MENUS

AND REPORTS

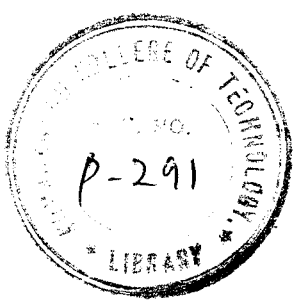
MENU STRUCTURE




DATA ENTRY
REPORTS
QUERY
EXIT
PASSWORD:

TRANSACTION MENU FOR DATA ENTRY	
01. BASIC DATA AT RECRUITMENT	02 EDUCATIONAL QUALIFICATIONS
03. FAMILY PARTICULARS & NOMINATION	04. TRAINING PRIOR JOINING HAL
05. FAMILY PLANNING DETAILS	06 SERVICE PROFILE
07. TRAINING AFTER JOINING HAL	08. DEMOTION
09. PROMOTION	10. TERMINATION
11. TRANSFER	12. SENIORITY
13. REMUSTERING	14 SERVICE DETAILS
00 EXIT	

From this form we can select which one is needed for keying the details of employees.This ca
select by applying arrow keys.



BASIC DATA AT RECRUITMENT					
PB_NO _____		EMPLOYEE NAME _____			
SEX _____		DATE_BIRTH _____		NATIONALITY _____	
SC/ST _____		STATE_BIRTH _____		PHY_DISABLE _____	
RELIGION _____		STATE_BELONG _____		EX_SERVICE _____	
TRAINEE TYPE ____		DESIGNATION _____		BATCH YEAR _____	
TYPE APPT ____		DISCIPLINE _____		DEPT ID _____	
DEPUTATIONIST ____		GRADE CODE _____		GRADE _____	
DATE SENIORITY _____		BLOOD GROUP ____			
CONTINUE (Y / N)					

This form is used to input personal details of employee's , such as Badge Number, Date Of Birth Etc.

HALIBC OVERHAUL DIVISION. DATE: 10-APR-97.

EDUCATIONAL DETAILS

PB_NO _____

EMPLOYEE NAME _____

INSTITUTION _____

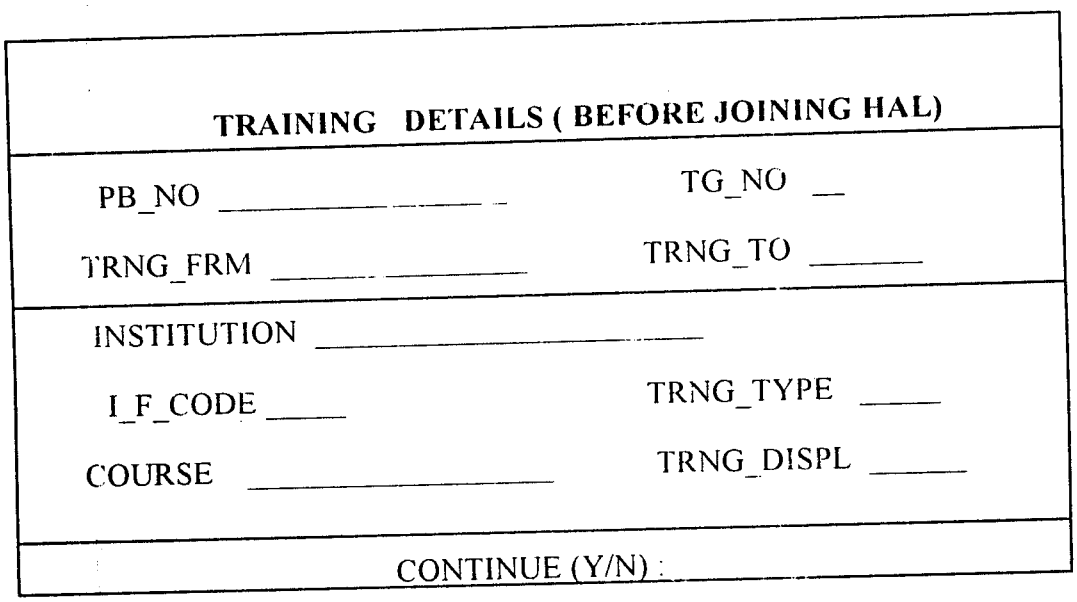
QUAL_SLNO _____ QUAL_CODE _____

CLASS _____ DURATION _____

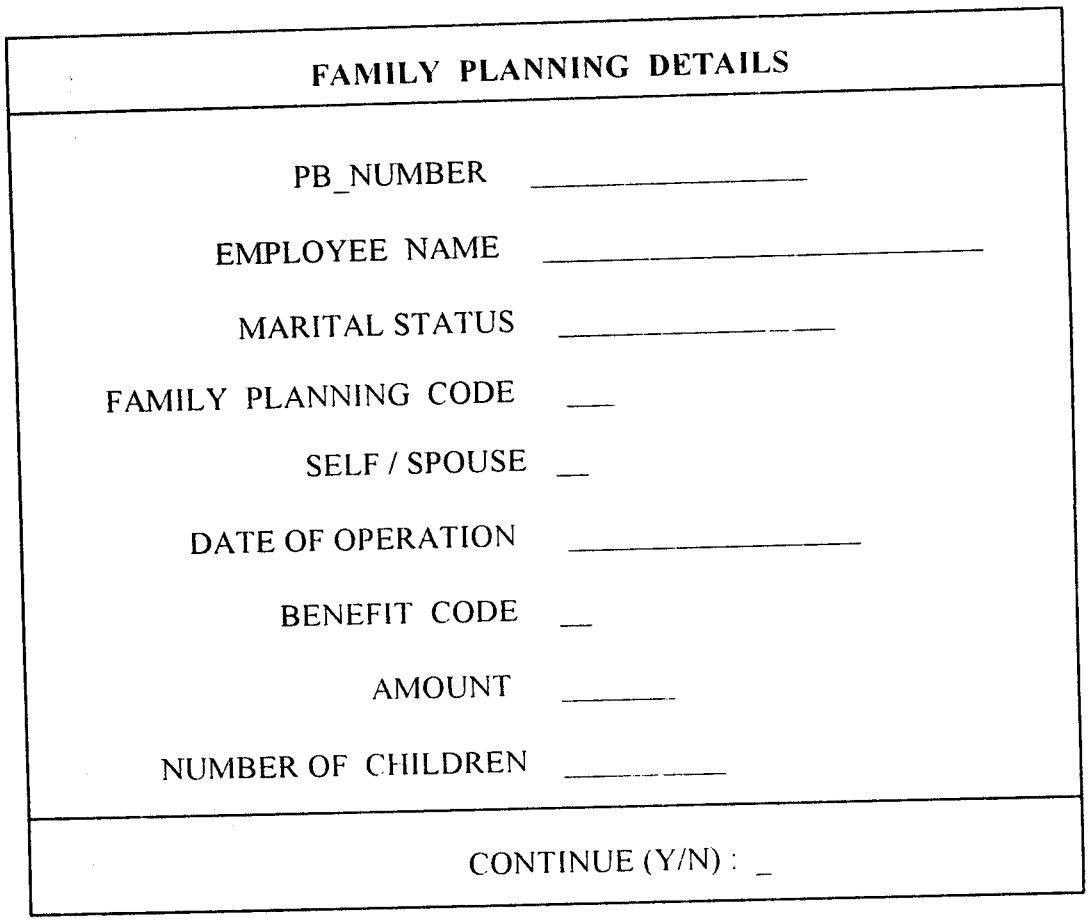
DATE_COMPLETE _____

CONTINUE (Y/N) : _

This gives employee's educational details such as qualification, duration, year of passing etc.



The above form is used to input the Training details of employees ,before joining HAL, such as course, institution ,duration etc.



This form is used to input family planning details of an employee and if so the benefit is that deriving out of that.

SERVICE DETAILS (BEFORE JOINING HAL)	
PB_NO _____	SENTRY_NO __
BFROM_DATE _____	BTO_DATE _____
ORG_NAME _____	
BDESIGNATION _____	
CONTINUE (Y/N) : _	

The above form gives the service details of employees before joining HAL.

HAL(BC) OVERHAUL DIVISION DATE 10-APR-97

TRAINING DETAILS (AFTER JOINING HAL)

PB_NO _____ TG_NO __

TRNG_FRM _____ TRNG_TO _____

INSTITUTION _____

I_F_CODE _ TRNG_TYPE _

COURSE _____ TRNG_DISPL _____

CONTINUE (Y/N) : _

This gives employee's training details after joining HAL.

HAL/BC/OVERHAUL DIVISION DATE: 11-APR-17

DEMOTION

PB_NUMBER _____

EMPLOYEE NAME _____

DEPARTMENT _____

DESIGNATION _____

DEMOTION TYPE ___ GRADE _____

DEMOTION DATE _____ DISCIPLINE _____

CONTINUE (Y/N) : _

HAL(BC) OVERHAUL DIVISION DATE 10-APR-97

PROMOTION

PB_NUMBER _____

EMPLOYEE NAME _____

DEPARTMENT _____

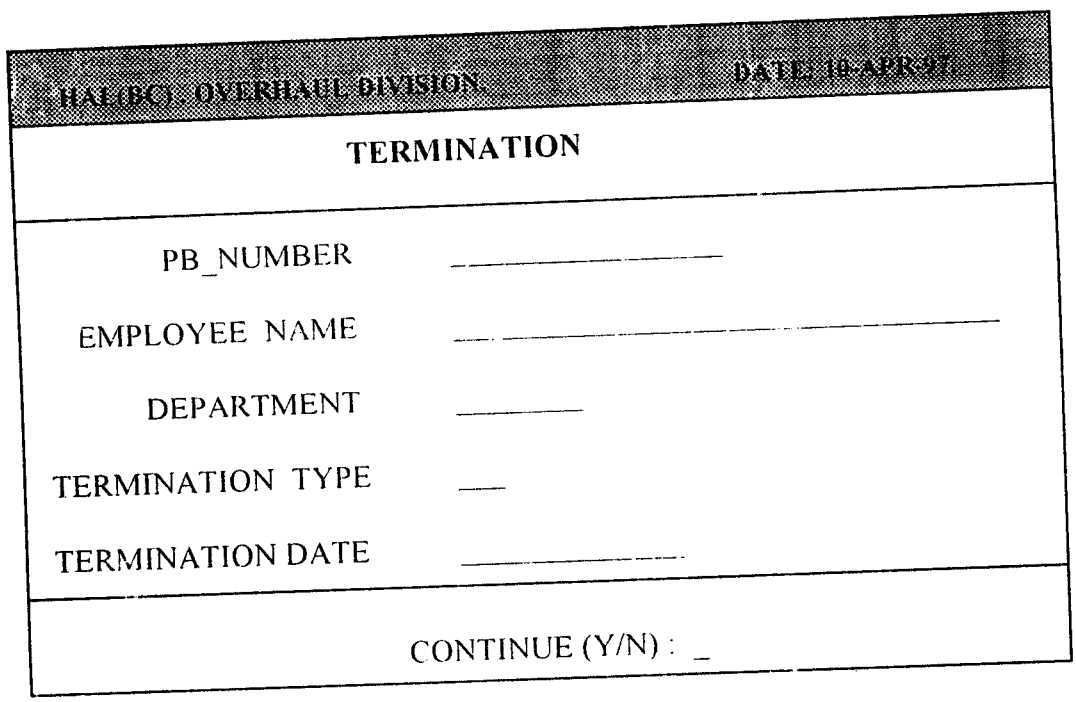
DESIGNATION _____

PROMOTION TYPE ___ GRADE _____

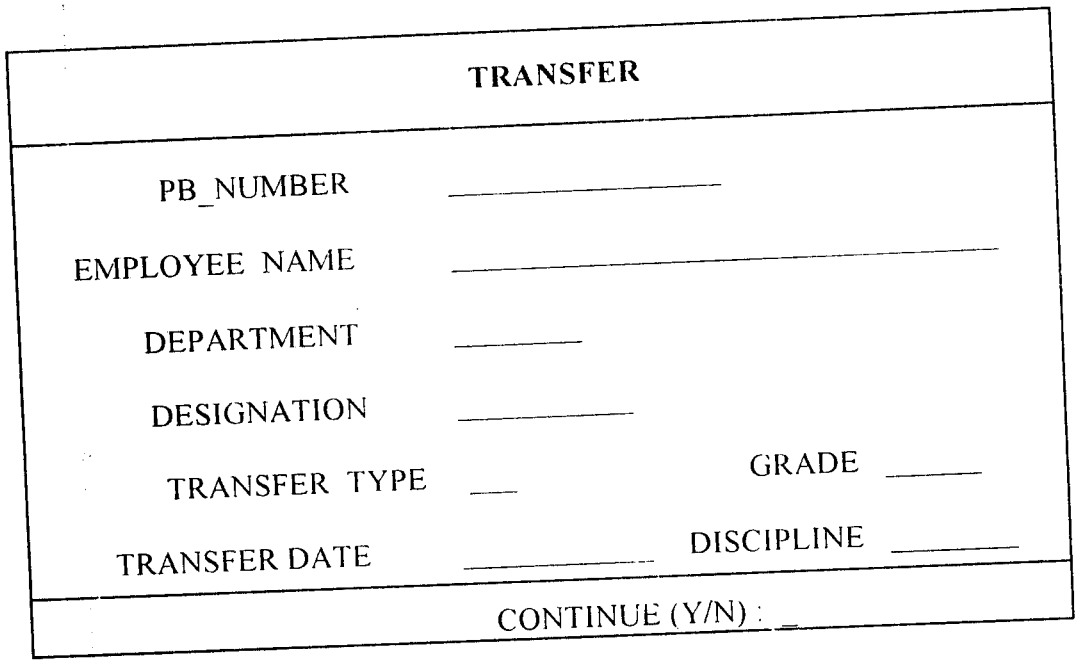
PROMOTION DATE _____ DISCIPLINE _____

CONTINUE (Y/N) : _

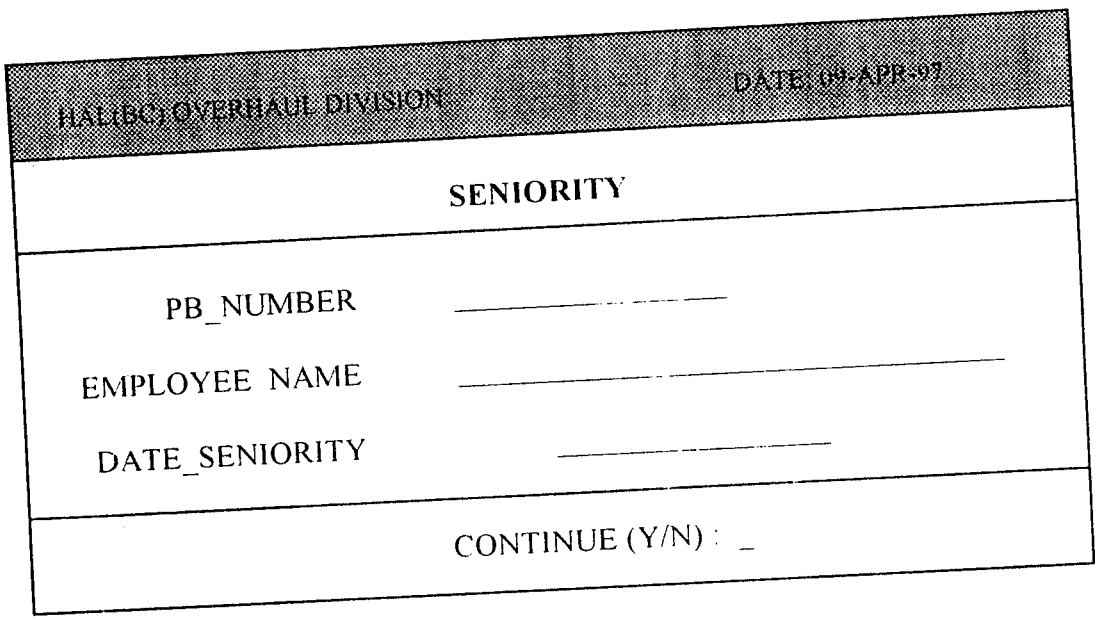
The above form is used to input employee's information regarding promotion, such as Promotion Type, Pbno, Name, Date etc.



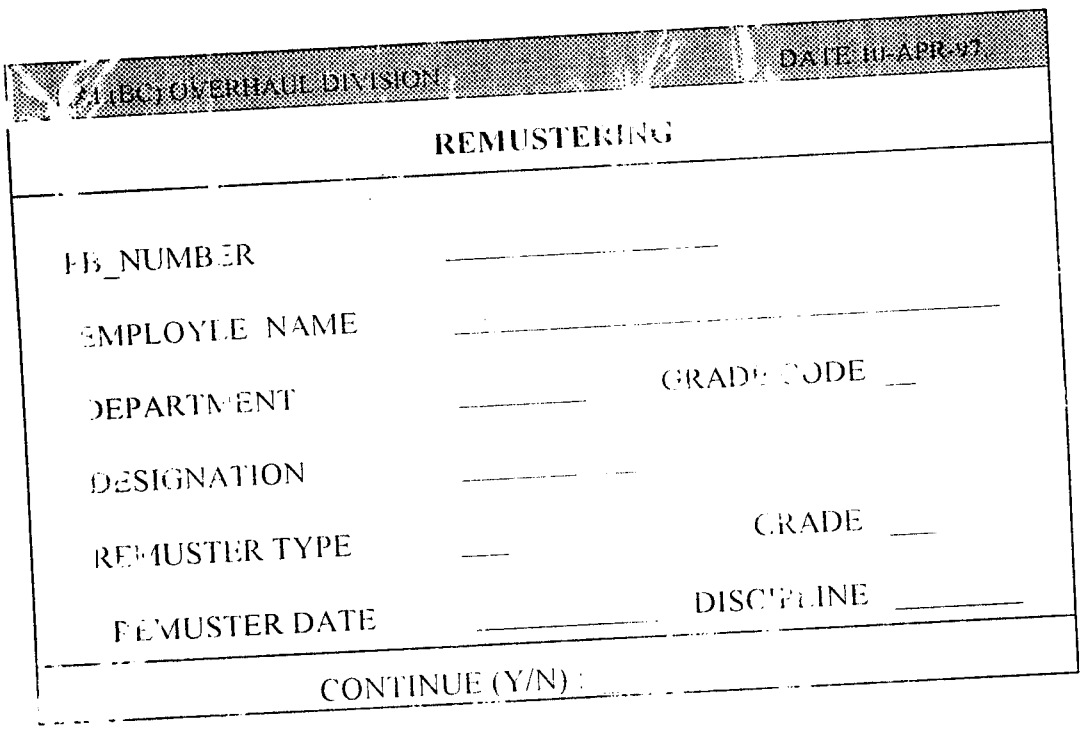
This form is used to keying employees Termination details , such as Date, Type etc



This form is used to input employees transfer details if any.



This form is used to input seniority details of employees such as seniority date, type, pbno etc.



This form gives the mustering details of employee's.

SERVICE DETAILS (BEFORE JOINING HAL)	
PB_NO _____	SENTRY_NO __
BFROM_DATE _____	BTO_DATE _____
ORG_NAME _____	
BDESIGNATION _____	
CONTINUE (Y/N) : _	

The above form gives the service details of employees before joining HAL.

HAL/BUT OVERHAUL DIVISION

DATE: 09-APR-97

LIST OF OFFICERS

PB_NO	DEPARTMENT	NAME	QUAL	DESIGNATION	DATE OF PROMOTION
VS 05049	LUCK	ARYA	BE	SAM	03-NOV-1978
DC 05018	LUCK	DAS	BE	ASST.MANAGER	04-APR-1984

BAL(BC) OVERHAUL DIVISION DATE : 27 MAR-97

FAMILY PLANNING AND NOMINATION DETAILS

PB_NO	DEPARTMENT	GRADE	DATE_BIR	DOAPHAL	DOAPP	QUAL	DESG
VS 05018	LUCK	VI	10-FEB-44	10-JAN-69	10-DEC-78	BE	DMD
NR 02065	HYDR	IV	15-SEP-45	10-FEB-76	11-FEB-89	BE	MANAGER

HAL (EC) OVERHAUL DIVISION. DATE :09-APR-97

BIO-DATA

EMP_NAME : V N KESHAV

PB_NO : VS 05098

DATE_BIRTH : 10-NOV-1929

DATE_APT_HAL : 23 - SEP- 1949

DESIGNATION : CHIEF ADMINISTRATIVE MANAGER

QUAL_DESCRIPTION	INSTITUTION	YEAR OF PASSING	CLASS
MA	MYSORE UNIVERSITY	1979	III
LLB	BANGALORE UNIVERSITY	1983	III

SERVICE DETAILS BEFORE JOINING HAL

DESIGNATION	ORGANISATION	FROM	TO
ASST_MANAGER	ADA	12-JUN-76	15-MAY-80
MANAGER	NAL	25-FEB-81	30-MAR-84

SERVICE DETAILS AFTER JOINING HAL

DESIGNATION	DEPARTMENT	FROM	TO
SENIOR MANAGER	COMPUTERS	30-DEC-84	30-FEB-86

DETAILS OF TRAINING RECEIVED AFTER JOINING HAL

COURSE	INSTITUTION	FROM	TO
JOB-ORIENTED	TRAINING DIVISION	25-JAN- 90	01-JUL-90

INDICATE WHETHER OFFICER BELONGS TO THE FOLLOWING CATEGORY

SIGNATURE : **DESIGNATION :** DMD

NAME : **DATE :09-APR-97.**

HAL(BC) OVERHAUL DIVISION DATE:-09-APR-97

DESIGNATION/GRADE WISE REPORT

DESIGNATION	GRADE	TOTAL
GM	1	3
MM	2	4
DM	3	2
AM	5	2

HALDIA OVERHAUL DIVISION

DATE:-09-APR-97

LIST OF OFFICERS HAVING ENGINEERING QUALIFICATION

PB_NO	DEPARTMENT	GRADE	DATE_BIR	DOAPHAL	DOAPP	QUAL	DESG
VS 05018	LUCK	VI	10-FEB-44	10-JAN-69	10-DEC-78	BE	DMD
NR 02065	HYDR	IV	15-SEP-45	10-FEB-76	11-FEB-89	BE	MANAGE

HALDIA OVERHAUL DIVISION

DATE :09-APR-97

TRAINING DETAILS OF EMPLOYEES

Slno	Pbno	Dob	Dept	Grade	Name	Dsnr	Dfrm	Dto	Inst / Course
01	61005	10-DEC-39	OL	I V	VASUDEV	17-NOV-52	16-NOV-51	16-NOV-54	TELCO Mail Testing
02	V4842	11-JAN-4[illegible]	OL	III	RAM	24-DEC-66	29-MAR-71	30-feb-75	NAL PRG Testing

DATA DICTIONARY

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : FAMILY

TABLE DESCRIPTION : Contains information regarding the family planning details of an employee.

NAME	NULL	TYPE	DESCRIPTION
PB_NO	NOT NULL	NUMBER(7)	Employee id_no
FAMILY_PLAN	NULL	NUMBER(2)	Family planning code
SELF_SPOUSE	NULL	VARCHAR2(1)	Marital status
DATE_OPERATE	NULL	VARCHAR2(8)	Date of surgery
BENEFIT_CODE	NULL	NUMBER(1)	Benefit code
BENEFIT_AMT	NULL	NUMBER(4)	Amount
NO_CHILDREN	NULL	NUMBER(2)	Number of children

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : EMP_DAT

TABLE DESCRIPTION : Contains various information's regarding education, career and personal details.

NAME	NULL	TYPE	DESCRIPTION
BDG_NO	NULL	NUMBER(7)	Employee id_no
E_NAME	NULL	VARCHAR2(32)	Employee name
SEX	NULL	VARCHAR2(1)	Gender
STATUS	NULL	NUMBER(1)	Marital status
D_BIRTH	NULL	DATE	Date of birth
NATION	NULL	NUMBER(3)	Nationality
ST_BIRTH	NULL	NUMBER(2)	State of birth
ST_BELONG	NULL	NUMBER(2)	Residing state
RELIGION	NULL	NUMBER(2)	Religion
CATEGORY	NULL	NUMBER(1)	Caste
CAST_CODE	NULL	NUMBER(4)	Code
CAT_EXSER	NULL	VARCHAR2(1)	Ex_service
CATEGORY_PHY_DIS	NULL	VARCHAR2(1)	Handicapped
QUALI	NULL	NUMBER(6)	Education qualification
TRN_TYPE	NULL	NUMBER(2)	Type of trainee
DD_OF_APP_HAL	NULL	DATE	Date of joining
D_PROMO	NULL	DATE	Date of last promotion
GRADE	NULL	NUMBER(2)	Grade
GRADE_CODE	NULL	VARCHAR2(1)	Code of grade

DESGI	NULL	NUMBER(4)	Post assigned to
DEP	NULL	VARCHAR2(4)	Department
DEP_ID	NULL	VARCHAR2(1)	Code
DEP_WORK	NULL	NUMBER(4)	Deputised to
DISCIPLINE	NULL	NUMBER(3)	Discipline
SAL	NULL	NUMBER(6)	Salary
D_SENIO	NULL	DATE	Date of seniority
TRAD_CODE	NULL	VARCHAR2(3)	Trade
DEPUTATION	NULL	VARCHAR2(1)	Under deputation
BLOOD_GP	NULL	VARCHAR2(2)	Blood group
BATCH_YR	NULL	VARCHAR2(6)	Year of joining
HOME_TOWN	NULL	VARCHAR2(25)	Native town
PROM_TYPE	NULL	NUMBER(2)	Mode of termination

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : TRNG_DET

TABLE DESCRIPTION : Contains information regarding the details of training, an employee has received during his entire tenure.

NAME	NULL	TYPE	DESCRIPTION
PB_NO	NOT NULL	NUMBER(7)	Employee's id_no
B_F_CODE	NULL	VARCHAR2(1)	Code
TRNG_SLNO	NULL	NUMBER(2)	Serial number
TRNG_FROM	NULL	VARCHAR2(8)	Date of commencement
TRNG_TO	NULL	VARCHAR2(8)	Date of termination
TINSTITUTION	NULL	VARCHAR2(22)	Name of institution
I-F-CODE	NULL	NUMBER(1)	Code
TRNG_TYPE	NULL	VARCHAR2(1)	Type of training
TRNG_DISPL	NULL	NUMBER(3)	Discipline
COURSE	NULL	VARCHAR2(22)	Course undergone

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : REMUSTER

TABLE DESCRIPTION : Contains information regarding the details of Remustering and Organization.

NAME	NULL	TYPE	DESCRIPTION
REMUST_TYPE	NOT NULL	NUMBER(2)	Remuster code
REMUST_DATE	NULL	DATE	Date of remustering
ORG_NAME	NULL	VARCHAR2(32)	Organisation
BDESIGNATION	NULL	VARCHAR2(20)	Posts previously assigned to

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : GRADE_DET

TABLE DESCRIPTION : Contains description of each grade according to it's grade code.

NAME	NULL	TYPE	DESCRIPTION
CODE	NULL	NUMBER(2)	Grade code
DESCR	NULL	VARCHAR2(4)	Grade description

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : TRANS

TABLE DESCRIPTION : Contains information regarding the details of transfer

NAME	NULL	TYPE	DESCRIPTION
TRANS_TYPE	NOT NULL	NUMBER(2)	Transfer code
TRANS_DATE	NULL	DATE	Date of transfer

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : TRAINEE

TABLE DESCRIPTION : Contains information regarding the details of a trainee.

NAME	NULL	TYPE	DESCRIPTION
PB_NO	NOT NULL	NUMBER(7)	Trainee's id_no
ADDRESS	NULL	VARCHAR2(20)	Residential address
DEPARTMENT	NULL	VARCHAR2(20)	Department
WAGES	NULL	NUMBER(5)	Stipend

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : EMP_DAT

TABLE DESCRIPTION : Contains various information's regarding education, career and personal details.

NAME	NULL	TYPE	DESCRIPTION
PB_NO	NOT NULL	NUMBER(7)	Employee id_no
EMP_NAME	NULL	VARCHAR2(32)	Employee name
SEX	NULL	VARCHAR2(1)	Gender
MARITAL_STAT	NULL	NUMBER(1)	Marital status
DATE_BIRTH	NULL	DATE	Date of birth
NATIONALITY	NULL	NUMBER(3)	Nationality
STATE_BIRTH	NULL	NUMBER(2)	State of birth
STATE_BELONG	NULL	NUMBER(2)	Residing state
RELIGION	NULL	NUMBER(2)	Religion
CATEGORY_SC_ST	NULL	NUMBER(1)	Caste
CAST_CODE	NULL	NUMBER(4)	Code
CATEGORY_EX_SCR	NULL	VARCHAR2(1)	Ex_service
CATEGORY_PHY_DIS	NULL	VARCHAR2(1)	Handicapped

QUALIFICATION	NULL	NUMBER(6)	Education qualification
TRAINEE_TYPE	NULL	NUMBER(2)	Type of trainee
DATE_APT_HAL	NULL	DATE	Date of appt at HAL
TYPE_APPT	NULL	NUMBER(3)	General or not
GRADE	NULL	NUMBER(2)	Grade
GRADE_CODE	NULL	VARCHAR2(1)	Code of grade
DESIGNATION	NULL	NUMBER(4)	Post assigned to
DEPT	NULL	VARCHAR2(4)	Department
DEPT_ID	NULL	VARCHAR2(1)	Code
WORKING_DEPT	NULL	NUMBER(4)	Deputed to
DISCIPLINE	NULL	NUMBER(3)	Discipline
SALARY	NULL	NUMBER(6)	Salary
DATE_SENIORITY	NULL	DATE	Date of seniority
TRADE_CODE	NULL	VARCHAR2(3)	Trade
DEPUTATIONIST	NULL	VARCHAR2(1)	Under deputation
BLOOD_GROUP	NULL	VARCHAR2(2)	Blood group
BATCH_YEAR	NULL	VARCHAR2(6)	Year of joining
HOME_TOWN	NULL	VARCHAR2(25)	Native town
TYPE_TERMIN	NULL	NUMBER(2)	Mode of termination
TERMIN_DATE	NULL	DATE	Date of termination

APPLICATION-ID : HURES

TYPE : TABLE

RETENTION PROCEDURE : PERMANENT

TABLE NAME : SERV_DETT

TABLE DESCRIPTION : Contains information regarding the service details of an employee.

NAME	NULL	TYPE	DESCRIPTION
PB_NO	NOT NULL	NUMBER(7)	Employees id_no
SERV_SLNO	NULL	NUMBER(2)	Service serial no
STARTING_DATE	NULL	DATE	Date of joining
END_DATE	NULL	DATE	Date of termination
SDEPT	NULL	VARCHAR2(4)	Service department
SDEPTS	NULL	VARCHAR2(1)	Department status
SGRADE	NULL	VARCHAR2(2)	Grade
SDESIGNATION	NULL	VARCHAR2(4)	Designation
STYPE_APPT	NULL	VARCHAR2(3)	Type of appointment
SDISCIPLINE	NULL	NUMBER(3)	Division

GLOSSARY

Glossary

HURES	Human Resources Management System
Demotion	It corresponds to the term de promotion.
Remustering	It contains data regarding re registration of an employee.
Termination	This explains type of retirement a person has chosen.

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