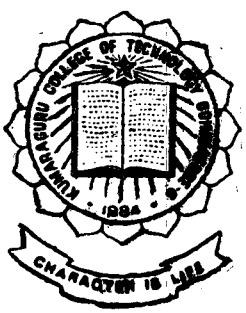
Vendor Information and Management System

Project Work



Submitted by

Binu Abraham
9338M0184

Under the Guidance of

Prof. P. SHANMUGAM, M.Sc.,(Engg),M.S.(Hawai)M.I.S.T.E.,
Prof. and H. O. D. of Computer Science and Engineering

In partial fulfilment of the requirements
for the award of the Degree of
MASTER OF COMPUTER APPLICATIONS
in the Department of Computer Science and Engineering of
Kumaraguru College of Technology
Affiliated to Bharathiar University, Coimbatore

Department of Computer Science and Engineering
Kumaraguru College of Technology
Coimbatore-641 006

1995 - 1996

DECLARATION

I hereby declare that this project entitled **VENDOR INFORMATION AND MANAGEMENT SYSTEM** submitted to the department of Computer Science and Engineering of Kumaraguru College of Technology affiliated to Bharathiar University, Coimbatore for the award of **MASTER OF COMPUTER APPLICATIONS** is a record of original work done by me under the supervision and guidance of **Mr. P. SHANMUGAM**, Head of the Department, Department of Computer Science and Engineering and this project work has not formed the basis for the award of any Degree/Diploma/Associateship /Fellowship or similar title to any candidate of any University.

Place : COIMBATORE
Date : 07/06/'96.

Binu Abraham

BINU ABRAHAM
REG. No. 9338MO184

Endorsed By :

P Shanmugam

Mr. P. SHANMUGAM
Head of the Department
Department of Computer
Science and Engineering
Kumaraguru College of
Technology
Coimbatore - 641 006.

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

It has been said that gratitude is the memory of the heart. Hence I take this opportunity to express my gratitude to all those, whose contribution in this project can never be forgotten.

I would like to thank ***Dr . S . SUBRAMANIAN*** *, Principal , Kumaraguru College of Technology ,Coimbatore, for his incomparable support and guidance.*

I am grateful to ***Mr. P. SHANMUGAM,*** *HOD,Computer Science and Engineering, for the help rendered in enabling me to complete my project work.*

I express my profound gratitude towards ***Mr. M. VISWANADHAN,*** *Chief Manager, Computer Service Centre, FACT, Udyogamandal for permitting me to carry out this project work at FEDO and also for providing all the necessary facilities.*

My sincere thanks to ***Mr. XAVIER ALEXANDER RAJAN,*** *Engineer, Computer Service Centre, FEDO, for his inspiring guidance and constant encouragement during this period, which enabled me to complete my work, successfully. I am really grateful to him for his invaluable assistance and support at all stages. I take this opportunity to thank all other staff members in computer service centre, FEDO, for their help.*

I wish to extend my deep sense of gratitude to ***Mrs. I. S. AMBIKA,*** *Deputy Manager, Computer Service Centre for her assistance in times of need.*

I express my hearty thanks to ***Mr. D. SAJJAN,*** *Purchase Manager, for his kind co-operation and valuable support in the successful completion of the project work.*

I sincerely thank ***Miss.MINIMOL M. A.*** *and all other friends who helped me to complete my project work.*

Words are inadequate to express my thankfulness to my parents for their excellent never ending co-operation.

Last but not the least, I humbly wish to express my gratitude to Lord Almighty, for showering his abundant blessings upon me.

BINU ABRAHAM

CONTENTS

CONTENTS

SYNOPSIS

CHAPTER 1

SYNOPSIS

The project entitled computerization of **VENDOR INFORMATION AND MANAGEMENT SYSTEM** deals with handling prequalified vendors of the company. A systematic approach is made towards vendor information, item information, maintenance of information and management of these vendors along with generating well formatted reports. The system is developed under the UNIX environment using INGRES.

The system takes in information about Vendors and Items of the organization and stores them in a normalized format.These information are used to produce reports,answer queries and if a limited aspect of management. Reduced complexity in data entry and querying helps the users to a great extent.

This system is very user friendly and is fully menu driven. Even a person having no knowledge of computers can operate this system with much ease and accuracy.

INTRODUCTION

CHAPTER 2

INTRODUCTION

2.1 ORGANIZATION - FACT

FERTILIZERS AND CHEMICALS TRAVANCORE LTD - FACT, a leader in the fertilizer industry had its origin as early as 1943, ushered a new era in Indian Agriculture. Today FACT is a large multi-product, multi-divisional corporation with a turnover of about Rs.1000 crore. FACT has a number of divisions including

FEDO (FACT Engineering and Design Organization)

FEW (FACT Engineering Works)

CD (Cochin Division)

PD (Petrochemical Division)

UD (Udyogamandal Division) etc.

FEDO was established to meet the emerging need for utilizing indigenous capabilities in the vital areas of Engineering Design and Consultancy for building large, modern fertilizer plants. FEDO was recently accredited with the covetous ISO-9001 Certificate.

COMPUTERIZATION OF FACT

The complexity of this Multi-Division Corporation has accelerated automation in Information Technology by introducing computers of adequate capabilities starting with IBM Unit Record equipment in 1965. Today computerization covers a wide range of activities including,

* Production Management
* Material Management
* Maintenance Management
* Marketing Management
* Human Resource Management
* Financial Management and Engineering etc.

2.2 COMPUTER SERVICE CENTRE

FACT has a full fledged computer centre which commenced its operation in 1965. A new information network by name FACTNET incorporating electronic mail facility was introduced in FACT. In Computer Service Centre (CSC), computer hardware ranges from PC's to mainframe computers. The mainframe currently used is series 39 running in VME Operating system, supplied by ICIM, a subsidiary of ICL Computers, U.K. The mainframe with its two level processing (Front end and Back end) provides excellent communication facilities in an ideal platform for data processing and related applications. The other resources

include DRS-6000 cluster controllers, ZEUS/486 mini computers, Work Stations, Personal Computers and terminals.

Milestones in Data Processing And Computerization :

1965 - Unit Record Machines for accounting applications.

1971 - IBM 1401 second generation computer for meeting additional Data Processing requirements.

1979 - Spectrum 7/31 of DCM data products for FEDO's design and detailed engineering activities.

1981 - IBM 1401 replaced with third generation TDC-316

1986 - Olympia/32, a mini computer was introduced at Udyogamandal.

1987 - Olympia/32 for FEDO's engineering activities. Olympia/32 at Cochin Division for integrated materials and maintenance management.

1988 - Introduction of CAD based PC-ATs at FEDO.

1989 - Commissioning of S-39 ICIM Fourth Generation mainframe computer as the appex dataprocessing support.

1990 - Introduction of FACTNET (Network) in all divisions.

1994 - Introduction of DRS - 6000 Systems in Udyogamandal, Petro Chemical and Cochin Divisions. Introduction of ZeUS - 486 at FEDO and RAP.

FEDO is committed to :

* Customer satisfaction through engineering excellence.
* Achievement of the state of total quality management.
* Accomplishment of the corporate objectives.

FEDO is equipped to take up

1. Techno-economic feasibility studies.
2. Market surveys.
3. Process selection and evaluation.
4. Process engineering.
5. Detailed engineering.
6. Architectural design and town planning
7. Equipment procurement, inspection and shipping.
8. Construction.
9. Site management and supervision.
10. Off site design.
11. Start-up and commissioning.
12. Turn-key contracts.
13. After sales service.
14. Refinancing on deferred payment schemes.
15. Operation and maintenance of personnel training.

PROBLEM DEFINITION

CHAPTER 3

PROBLEM DEFINITION

The Vendor Information And Management system has three distinct subsystems.

* Vendor information subsystem
* Vendor management subsystem
* Material information subsystem

Vendor information subsystem comprises of nothing but information regarding all vendors that are associated with the organization, ie those vendors that supply materials to FACT.

Material information subsystem, similar to vendor information system, stores all details of the items that are needed by company and provide the necessary information regarding items.

Vendor management subsystem is expected to use the information from the information subsystem and aid in selection of a prequalified vendor .

The problem is to automate the above subsystems. The new system should be capable of providing all the necessary information and periodic reports about vendors and materials and should help in vendor management. The new system also capable of providing answers to queries that are needed by company.

SYSTEM STUDY AND ANALYSIS

CHAPTER 4

SYSTEM STUDY AND ANALYSIS

4.1 STUDY OF THE EXISTING SYSTEM

The first objective of my project was to have a perfect and in depth understanding of the system which was absolutely necessary . Towards the set objective I had a long and detailed talk with the Chief Materials Manager of the organization. This was followed by talks with employees at various levels of the organization.The system as such dealt with the management of Vendors within the organization. This was a very critical issue since selection of appropriate Vendors whenever there is a request from the purchase department was a must. The system is completely responsible for efficient and flawless management of Vendors.It is also responsible for a number of reports and queries to be submitted to the top management or the respective departments. This was to assist decision making at different levels of the organization.

The data about the vendors that supply materials to FACT are stored in a register. For a vendor to supply items to FACT , the vendor should be registered as an authenticated vendor at FACT. At the time of registration the details of the vendors are entered into register. The register book contain columns like vendor name ,address, telephone number, telex,fax etc. There are two columns that are not filled at the time of registration. they are vendor holiday and vendor blacklisting.

Vendors are expected to supply the items on or before the due date. If they fail to do so repeatedly, they will be kept under holiday for a specified period or will be even removed from the prequalified list of vendors.

Vendors are blacklisted when the organization is not satisfied by their services or when they make continuous lapses in terms and conditions of supply, or required quality etc.

The vendors who are given register numbers are the actual vendors of the company. Those who do not,are not legal vendors they give only address to the Company and the Company enters their details into the appropriate records.

Like the vendor data, the data of the items that are used at FACT are also stored in a register book. The items used in the company are divided into group such as Machinery & material Handling Equipments, Piping Items, Process & Combustion Equipments, Electrical Items, Instrumentation Items.These items may or may not have subcategories.Each category may have separate vendors. The columns of the register book are item name, department name,the name of subcategory if any etc.

To keep track of the vendors who supply each item, they have a register that contain the item name and details of vendors supply that particular item. If company wants an item, they check above register and find vendors. The company give grade to vendors.This depends on amount of supply of a particular item.

Apart from these, the item register also contains prequalified list of vendors for each item or item subgroup. All these are entered in the item register manually. The problem arises when the information is to retrieve for reports or to answer queries . The queries are the likes of all blacklisted vendors, all vendors on

holiday, vendors supplying a particular item etc. The register books should be checked manually to get details of the vendors and items.

Need for Computerization.

The existing system is maintained manually. Hence it consumes more time to complete a single process. Adhoc queries and reports are almost impossible to handle. In a manual system, access to a particular record is very difficult and also such a system takes too much physical space to accommodate the files related to the system.

One of the main drawbacks of the existing system is that, there is no validation done anywhere in the system. In a manual system it is not easy to validate a record ,ie whether it is existing or not. So the duplication of records may occur which results in errors.

The updation of any one of the records is also very difficult to perform and it consumes too much time. The existing system needs more man power to complete each process. Manual maintenance causes a long time consumption for processing a single query. More difficulties arise when the vendors supply the items partially. The security of data is more complicated in the existing system and also backup of data are impossible. Any loss of data means a permanent loss. In the existing system report generation is also more complicated. Queries like items supplied by a particular vendor requires searching of all pages of the item register. The current system employs ten to fifteen man hours for this. This leads wastage of resources of the organization.

4.2 THE OBJECTIVES OF THE NEW SYSTEM

The main objectives of the required system are :

* To reduce the time taken to generate reports and answer queries. The management may need to get a query answer in short time . So a long time consumption is to be avoided.

* To provide a user friendly interface to do the report generation or to answer queries.

* To provide efficient utilization of the resources like storage space.

* To provide a base for further development of the computerization of organization.

4.3 REQUIREMENT SPECIFICATION.

Once the problem is clearly defined, the next step is to understand what the proposed system is required to do. It is important to generate a set of user requirements. Based on the requirements, the specification of the software should be drawn.The developer should state clearly ,

- What outputs are required,
- What processes are involved to produce these outputs,
- What inputs are necessary,
- what resources are required.

These specifications often serve as a reference to test the final product for its performance.

The above technique is applied to VIMS and the specifications are made. The inferences made at the first glance are given below:

Outputs:

* reports like list of all vendors, list of all items, list of all blacklisted vendors, etc.
* answers to queries like list of vendors who supply a particular item, list of items supplied by a vendor,details of a given item or vendor, etc.
* select a possible vendor or group of vendors for a given item.

Processes:

* Storing of data.
* Searching for data.
* Retrieving of data.
* Analysis of data.

Inputs:

* Vendor information.
* Item information.
* Relation information (ie, Vendors ←→ items).

Resources:

* Data storage device.
* Data processing device.
* I/O devices.

4.4 REQUIREMENT ANALYSIS.

The requirement analysis stage is an important stage in development of software. Various techniques have been developed for modeling the system. The method chosen here is Structured Analysis, developed by De Macro (1978). Since then , Structured Analysis is most useful for data processing systems which can be characterized as ones where data flows among activities or functions in the system. The activities create , output or transform the data into new forms and pass along the changed data. In this method, the main goal is to produce various models of the current system and the proposed system.The system model consists of:

* data-flow diagrams,
* data dictionary, and
* activity specifications.

Data flow diagrams enables to develop models of information domain and functional domain at the same time. DFD is refined into greater levels of details, resulting in a corresponding refinement of the data as it moves through the process that embody the applications.

Steps involved :

(1) The level 0 DFD should depict the S/W system as a single bubble.

(2) Primary I/P and O/P should be noted carefully.

(3) Refinement should start with isolating candidate processes,data items and data stores to be represented in the next level.

(4) All arrows and bubbles should be labeled with meaningful names.

(5) Information flow continuity to be maintained from level to level.

(6) One bubble at a time should be considered for further refinements.

Data dictionary is an organized list of all data items, that are important to the system, with precise and rigorous definitions so that the user and analyst will have common understanding of the inputs, outputs, components of data items and to some extent the calculations also.

Activity specifications describes the input to the bubble ,the algorithm that is applied to the input to the output that is produced. In addition it indicates restrictions and limitations imposed on the process, performance characteristics that are relevant to the process and design constraints that may influence the way in which the process will be implemented.

The Data Flow Diagrams are given in the appendix. The requirement analysis stage helps in identifying the objects. The objects identified are:

* Vendors

* Items

* Vendor - item relation.

There may be more objects that should be found in the system. they could be identified only at later stages.

4.5 PROPOSED SYSTEM

The proposed system for Vendor Information and Management System is a fully computerized one where the only manual process is data entry. The vendor and item data are organized into three distinct tables, one for the vendor details, one for the item details and the third one for the relation between the above two.

Each vendor is assigned a unique vendor code, that identify a particular vendor. Any further enquiry about the vendor should be made using this vendor code. The vendor code is generated by the system and is of the form vxxxxx. The details of all the vendors should be stored in the database.

Like wise the item details are also entered into an item database. Each item is identified by a unique item code which is a concatenation of the department code and the number of the item in the department. Since each item may or may not have subgroups, another database for the item subcategories are also maintained. The location of subcategories of particular item is stored alongside the item details in the main file.

The relation, ie which vendor supplies which item is stored in another database. This is different from the existing system which stores the details in the item register book itself which is not an efficient way of storage. The relation table will have fields like the item code and corresponding vendor code.

The whole system will be menu oriented. The user has to choose among the options like reports,queries data entry or edit. A few queries and reports

that are frequently required by the management are listed in the menu. If any further queries or reports are needed at any further point of time, we can include them.

PROGRAMMING ENVIRONMENT

CHAPTER 5

PROGRAMMING ENVIRONMENT

5.1 HARDWARE

SYSTEM: ICIM KRYPTON DRS 6000

PROCESSOR: SPARC RISC CPU @ 40 MHz.

128 KB CACHE

FLOATING POINT CO-PROCESSOR

MEMORY: 64 MB ECC MEMORY

HARD DISK CAPACITY : 3.6 GB

AUXILIARY STORAGE : CARTRIDGE DRIVE

: FLOPPY DISK

: OPTICAL DISK DRIVE

TERMINALS : VT 220 COMPATIBLE DIRECT TERMINALS

: PC-386SX TERMINALS

PRINTERS : TERMINAL PRINTER TVSE MSP-145

: HEAVY DUTY DOTMATRIX PRINTER

(make TVSE & MODEL CI-5000)

5.2 DATABASE DESCRIPTION

A database is a collection of related data. A database can be of varying size and complexity. Hence the information must be organized so that the users can append, search, retrieve and update data as required. The tool to achieve this is Data Base Management System.

ADVANTAGES OF DATABASES

1. Reduced Data Redundancy

In file management systems, data redundancy arises due to the fact that the same data has to be stored in physically separate locations. This may lead to Data Inconsistency and Data Insecurity. A DBMS overcomes this problem by allowing the users to share data. It also allows the creation of Views by which the end-user is enabled to see a part of the data and thus enforce security to a large extent.

2. Data Integrity

All DBMS has to enforce some level of data integrity on the database. This is done at the time database structuring is being defined. The user is given the facility to define what data type each cell can hold. Another common way is that data entered and saved in one database is checked against data held in another database.

Generally there are three kinds of data integrity enforced on a database.

1. Entity Integrity

2. Referential Integrity

3. Sharing of Data

A multiuser database must allow users to access the database at the same time. A concurrency control must be included to ensure that when several users are attempting to update the data in a centralized database, it is done in a controlled manner and that updates do not bring chaos or inconsistent data.

4. Restricting Unauthorized Access

The DBMS should be able to enforce security and authorization which has to be decided and administered by the DBA (Data Base Administrator).

5. Provide Multiple Interface

The DBMS must have several types of interfaces to provide access to the data, since there are different types of users.

6 . Complex Relationships Among Data

A DBMS must have the capability to represent a variety of complex relationships among database files as well as to retrieve and update data in such files based on these inter file relationships.

7. Backing Up and Recovery of Data

In case of an hardware or software failure, at the time of a complex update, the DBMS must have a built in recovery system that brings the database back to its original state.

8. Data Independence

The application program must be independent of the data file structure. Data independence is the immunity of applications to changes in storage structure and access strategy.

9. Multiple views of data

Database approach entails various users to view data in multiple formats in accordance with the requirements of the user.

There are three types of data base models :

1. HIERARCHICAL
2. NETWORK
3. RELATIONAL

RELATIONAL DATABASES

The relational model of data was formulated in the early 1970's by Dr. E.J. CODD at the San Jose Research Laboratory . Among the three data models,it has the simplest and the most uniform data structures and is formal in nature. It has been adopted by most database researchers as the best database model available, in spite of its imperfections.

It is based on the mathematical foundation - set theory. All database operations are performed on a set of data rather than on a single datum. The data is represented in the database as a collection of tables. The output of any query is also perceived as tables. It has an efficient and a simple Database Manipulation Language.

There is a clear sharp boundary between the physical organization of the database and the user requirements. Hence there are no design-built biases and is easy to alter unlike other models.

The grouping of data items represents a relationship between these data items, so a table is also referred to as a relation. Each column of the table represents an attribute . One column or a combination of some columns are used for assessing the data called primary key column.

Referential integrity means ensuring that a value that appears in one relation for a given set of attributes also appears for a certain set of attributes in another relation, i.e, limiting of a set of foreign key values to a set of primary key values.

Relational mathematics defines a variety of operators with which relations may be manipulated to achieve any desired tabular representation of the data. There are two types of operators. Unary-operand is a single relation Eg:- select,project. Binary- Two relations as operands. Eg :- union, difference, Cartesian product, join etc. These operations can be easily done using the SQL select statements.

When the integrity and accessibility of any company's data resources are at top priority, INGRES is one of the best Relational DataBase Management Systems available.

Acclaimed for its superior technology by major analysts, INGRES has been a RDBMS leader for over ten years introducing pioneering breakthroughs in the SQL based database architecture, application development tools and open connectivity solutions.

5.3 SELECTION OF SOFTWARE

SOFTWARE : INGRES RDBMS SOFTWARE V 6.4

OPERATING SYSTEM : UNIX SVR4 with unlimited user licence.

INTRODUCTION

INGRES is an RDBMS and has the advantages like sharing of data, restricting unauthorized access, providing multiple interface, complex relationship among data, backing up and recovery of data, data redundancy etc. INGRES is an acronym for INteractive Graphics and REtrieval System. It allows both end-users and programmers to store and retrieve data from database that are perceived as a collection of relations or tables.

Data is the basic building block of a database. The data types supported by INGRES includes,

1. character (fixed size or variable size)
2. integer (1 byte, 2 bytes or 4 bytes)
3. float (4 bytes or 8 bytes)
4. date (12 bytes)
5. money (6 bytes)

BASIC INGRES ARCHITECTURE

INGRES is divided into the following sections:

1. INGRES DATABASE
2. USER INTERFACE
   - The Terminal Monitor
   - INGRES tool set
   - Customized Application Program

The interface accepts instructions from users,converts these instructions to SQL statements and forward them to the Data Manager . After the operations required by the SQL statements are performed on the table user interface displays the results to the end user.

3. THE DATA MANAGER

The data manager accepts query language instructions and performs the specified operations on the data within the database. All the basic tasks such as data updates, retrievals etc. are performed directly by the data manager. The user never communicates directly with the data manager but must give instructions to the INGRES data manager via one of the INGRES tools.

4. THE QUERY LANGUAGE - 4GL & SQL

The query language is the medium of instruction that the user has to adopt, to communicate with the INGRES data manager so as to be able to manipulate

date held in an INGRES database. All communications with the DBA is via the INGRES query language called SQL.

INGRES AS A DISTRIBUTED DATABASE

The greatest advantage of INGRES is that it allows a system to be distributed across a network.

Distributed Access:

This means any user at any site can obtain access to data from an Ingres Table as if it were on their computer.

Distributed Storage:

Data stored at different network sites can be shared rather than duplicated at each site.

Distributed Processing:

Data from any site can be processed anywhere in a network and can be stored at any required site.

Interoperability:

To create a true distributed database environment, the tools available in Ingres are INGRES/NET, INGRES Gateway and INGRES/STAR.

INGRES NET:

Connects any number of sites using Ingres database including mainframes, minis and micros work stations & PCs. Users anywhere in the world using different computers can share the same database and the data held in its tables.

INGRES GATEWAYS:

This tool helps in access of non-Ingres data as if it were stored in an Ingres database.

INGRES STAR:

This tool enables the user to combine data held in different databases stored at different sites to a single database. Thus data is always available to those who require it, and data duplication is avoided.

Benefits of Using Ingres :

INGRES provides a multiple, multi-threaded Client/Server architecture, which is type of architecture that provides the following benefits :

* Very High Resource Utilization
* Full Multi-processor support
* No architectural bottle necks

5.4 CHARACTERISTICS OF INGRES

An INGRES database is a collection of tables. In INGRES you work with one database at a time. You can have one or mare tables stored in the database, normally the tables in the database is related. Whenever you need to perform a task on the data within the database , data is stored together in the database and then ,there are view definitions ,reports,forms,indexes,QBF objects,graphs etc. to operate on it.

1. TABLES:

Data are stored in tables or relations, a two dimensional matrix having rows and columns, where the horizontal dimension is user definable and hence column width is adjustable to take in whatever size of data that user requires. The intersection of a row and a column contain a data value. Ingres allows a maximum of 127 columns in a table.

Each column has a name that uniquely identifies the column in the table. Each column is assigned a data type to indicate the data to be stored and the length of the data. Each column can also be specified whether it can take null value or not.

A null value is a special value that represents unknown or unavailable data. A null value is treated differently with a blank or a zero.If the null value is zero, then we can specify whether the column should take default values when is not entered. The value 0 is taken in case of numeric field and blanks in the case of character fields. If the null value is 'No'and the default value is 'No' then the column becomes a mandatory column which means that the user has to enter data in the column.

2. INDEXES:

Data can be accessed at a much faster rate if the search of a record is done on the basis of a particular field. This field may be unique or non_unique and this field is specified as the key field. An index is created on this key field and each key field points to the record in the data page containing the value. INGRES use the index to go directly to the page within the table where the row with the key resides.

When one table needs more than one key ,secondary indexes provide a secondary key which are actually tables, automatically tied to the base table and updated when the base table is changed. There is a row in the secondary index for every row in the base table. There is also a column called tids. This is the tuple identifier of the row in the base table. There are two limits to number of secondary indexes that can be created on the table.

3. VIEW DEFINITIONS:

A view definition is a user defined choice of seeing data held within a table. A table may store data quite differently from the way in which the user may want to see it, a view definition is therefore is a INGRES tool which enables users to define the manner in which they wish to see the data stored in the table.

Views are database objects, especially helpful when the DBA wants to restrict the data that the user of an ingres table can actually see. Views can also be used for selecting the data that can be had in the report.

4. REPORTS:

A report is a database object that displays the data from a table or a view in a user defined format. You can produce an Ingres report on the monitor or in a file or on a printer.

5. FORMS:

A form is the Ingres method of giving the user of the system a familiar interface to use . Some forms are created automatically and others are user defined to fit the columns of an INGRES table.

INGRES FRONT ENDS

1. VIFRED

A forms-based system that allows developers to create forms for use in a customized forms-based system.

2. QBF

A forms-based system that enabled the user to append,retrieve and update data onto one or more tables. It also helps you crate join definitions.

3. TERMINAL MONITOR

A forms-based system that allows users to specify query language statements, execute the query statements and view the results.

4. VIGRAPH

A forms-based system to create, display and print graphs.

5. REPORT WRITER

A language that allows the developer to define custom reports.

6. RBF

A forms-based system that allows users to create default report specifications.

7. ABF

A forms-based application development system that allows developers to use INGRES/4GL to write ,compile,and execute programs.

8. VISION

A forms-based application code generator that allows user to build and test an application quickly by responding to prompts and choosing menu operations . The 4GL code is generated automatically and can be customized using other INGRES tools.

INGRES APPLICATION DEVELOPMENT TOOLS :

* Embedded Query Language
* VIFRED (Visual Forms Editor)
* Vision
* Application-By-Forms (ABF)
* Report Writer

INGRES USER INTERFACE TOOLS:

* Ingres/Menu
* Query-By-Forms (QBF)
* Report-By-Forms (RBF)
* Tables Utility
* Vision
* Interactive SQL or QUEL

INGRES / 4GL

INGRES/4GL is a fourth generation language. With 4GL you can specify what you want to be done, not how to do it. 4GL is generally non-procedural,allowing the application developers and the end user flexibility in choosing which operations takes place in a session.

INGRES / 4GL provides 3 major functions:

- Accessing databases in a number of ways.
- Provides control over screen management through FRS(Forms Runtime System)
- Provides control over how commands are executed.

INGRES / 4GL supports the standard SQL and INGRES proprietary QUEL. The INGRES 4GL source file is edited using an ASCII editor.

ABF , the INGRES application development tool, allows you to define, test and run fully developed applications without having to use a conventional programming language. Using ABF you can put together an entire application consisting of data entry, processing and report program. An ABF application uses standard INGRES forms and menus to access a database table and perform a series of operations like queries,updation and reports.

The highest object that ABF manipulates is an application. An ABF application is restricted to operations in a single database,since the important components of the application resides in the database itself. An ABF application may include these components :

1. FRAMES

The basic operational unit of application. A frame has two components attached to it i.e a form and an INGRES 4GL source code containing a set of menu items that lead to specific INGRES operations. Each of these menu items have blocks of statements performing a specific action. INGRES supports three types of Frames :

a. User-defined frame :

One that is defined by the developer of an application, i.e the has to specify the operations to be performed by each of the menu items on the menu of that frame and create a form using VIFRED.

b. QBF Frame :

The application uses Query- By- Forms to access the database. The user has to create a form using VIFRED, specify a table or a joindef and the command flags to be used by QBF when the frame is activated.

c. Report Frame :

A report in an application can be a default report created by RBF or an INGRES report using INGRES report-writer syntax. Any ASCII editor can be used to create a report specification file. A report frame usually consists of a report and a menu for running it. The frame may also include a form,created using VIFRED on which the user can enter one or more values in the report at run time.

2. PROCEDURES

Separate modules of INGRES/4GL or a host language code that perform specific operations. Procedures can be :

a. 4GL Procedure.

A 4GL procedure is written using 4GL code. It can be a standalone procedure (global) or embedded in a 4GL frame (local)

b. SQL/ Database Procedures.

A database procedure is a series of SQL statements and is stored as an object in the database.

c. Embedded SQL Procedures.

A ESQL procedure is written using SQL and a 3GL. These procedures allow you to connect to multiple databases.

d. 3GL Procedures.

A 3GL Procedure is written in 3GL only.

3. TABLES

Database Tables containing data on which the application operates.

4. REPORTS

Data formatted for display or printing.

5. FORMS

User's interface for performing operations on a database.

6. GLOBAL VARIABLES

Variables global to the scope of an application.

7. CONSTANTS

Names values global to the scope of an application.

8. RECORD TYPES

Named grouping of data types which can be treated as a single component.

Steps in Developing an Application

1. Create the application.
2. Create the database tables.
3. Define the forms in the application.
4. Define the global components and procedures.
5. Test the application during the definitionpostage.
6. Create an executable image of the application when testing is complete.
7. Run the executable image from the operating system.

STORAGE STRUCTURE

The data for each Ingres table is stored in a file on the disk. Tables are broken into 2048 byte pages, with approximately 2000 bytes available to store user data and 48 bytes reserved for use by Ingres. Each page stores a certain number of rows. The number of rows per page varies according to the row width, the storage structure of the table, whether or not the table is compressed an d how much data has been added or deleted since the table was last modified.

Rows never span pages, limiting the maximum row width to 2048 bytes. This limitation exists because of the 2048 pages in Ingress' unit of I/O, a write to disk involves a write to page. This is because Ingres access records at page level which means for every query fired, there is a swapping of at least one page in and out of the disk.

A storage structure is a file management providing a way to access data in a table. Keyed storage structure provides a way to get a particular row or a set of rows from database tables faster than would be possible if the table had no key.

The default storage structure for Ingres is HEAP

* It is the simplest storage structure
* No key, just a heap of data
* Storage and data access is sequential
* New data is added to the last page

INGRES 4GL:

An Ingres/4GL operation can be

1. Initialization:

This is the first block to be executed in a 4GL program. It is in this block the hidden variables are declared.

2. Field Activation:

Field activation can be a. Simple fields b. Table fields

A field activation causes a specific action to occur when a user enters or leaves a specific field.

3. Menu Activation:

Menu activation block gets triggered when the user selects the particular menu item.

4. Key Activation:

This is used along with the menu item in order to specify a key from the keyboard for that menu item. The operation is specified for an FRS (Forms Run-time Systems) key.

5. Time out Activation:

This feature enables to control how long the application should wait for requested input from the user. If the user fails to make a menu choice or respond to a message within the specified time, then a timeout occurs.

5.5 FEATURES OF OPERATING SYSTEM

UNIX is an interactive, multi tasking, multi user device dependent, portable operating system. It is rich in programming utilities that help users to get started with applications right away. It also enables programmers to utilize the work of previous users as a foundation on which recent applications and tools can be built. The utilities include several programming languages and aids for managing large amounts of program source text. UNIX is composed of three parts:

* the kernel which manages the resources of the computer system.
* the file system also known as a tree structure which is hierarchial.
* the shell which is a command interpreter that turns commands into requests to the underlying kernel to perform a particular job.

CHARACTERISTICS OF THE SYSTEM

1. INPUT/OUTPUT

Input and Output is essential to the operation of any computer. I/O allows the computer to store and retrieve data on disks or tapes , to interact with the user terminals and to print output on paper.This form of I/O is provided by the chosen operating system.

2. COMMAND INTERPRETER

The command interpreter reads the commands a user types in at a terminal and changes them into instructions the computer can understand.

3. DATA MANAGEMENT

Data Management allows the users to organize their data into logical grouping called "Files" . As the operating system is capable of providing data management, there exists no limitation to the system's flexibility and usefulness.

4. PROGRAM DEVELOPMENT TOOLS

Program development tools assist users in writing and maintaining programs. Compilers, assemblers,debuggers and software maintenance systems are the major tools which are part and parcel of the system.

5. TIME SHARING

Time sharing is a way of allowing several people to run programs on different terminals concurrently. This introduces the facility of enabling a group of people to simultaneously approach a problem on different levels , or at the same level, when the need arises. This can be picturised with the following example - while the primary user is updating a certain application the secondary user can pursue the application by activating it.

6. SECURITY

The operating system invokes security that protects one user from another and the operating system from all users. It's main function is to make sure only authorized users can gain access to the computer and it's data and that users do only things that they are authorized to do. As time sharing is available in the operating system, a large degree of security is provided.

7. COMMUNICATION

Communication refers to the ability of one computer to communicate with other computers and terminals to transfer programs and data.

8. WINDOW MANAGER

The Window manager that is available within the DRS enables the user to gain access to a system which is user friendly. This permits the user to perform the maximum possible functions within a single screen. As four windows appear on a single screen, the user can thus move from one window to another, with each window offering various facilities, which can be utilized to the hilt. The most distinct manipulations possible are the ones involving the menus - creation, deletion and edition of menus are done with ease.

SYSTEM DESIGN

CHAPTER 6

SYSTEM DESIGN

6.1 DATABASE DESIGN.

The main databases used in this system are

1. Vendor
2. Item_main
3. Item_sub
4. Ven_item

There are also other files used, such as index files.The attributes of these entities are given in the appendix.

NORMALIZATION

The normalization process is designed to eliminate several pathological problems that can creep into a database design. The problems are redundant data, lost data, and implied spurious connections.

A normalized design would provide the following advantages.

(1) Minimize amount of space required to stored data.

(2) Minimize the risk of data inconsistencies with in the database

Steps involved in data normalization

(1) Ensure that all entities are uniquely identifiable by a combination of attributes.

(2) Remove repeated attributes or a group of attributes, to place entities in the first normal form.

(3) Remove the attributes that are dependent on only part of unique identifier . This is also called making the nonkey attributes fully functionally dependent on primary key. This process places the entities in the second normal form.

(4) Remove attributes that are dependent on attributes which are not part of the unique identifier. This process called removing transitive dependency, places the entities in the third normal form.

DENORMALIZATION.

Denormalization brings in controlled redundancy for performance reasons. It is necessary when critical and frequent queries should perform well. Another reasons to bring in denormalization is that the design should cater to the full functionality of the application. The trade-off's is in terms of programming care and maintenance. This is called Modified Normal Forms.

The VIMS data base is designed based on the relational database concepts. The structure of the database is given in the appendix.

6.2 INPUT DESIGN

The input media used in the system are keyboard and mouse. The inputs required in the system are the database

items. the main data-entry screens are :

1. Vendor data entry screen.

2. Item data entry screen.

3. Relation data entry screen.

Apart from these there are other input screens which are concerned with the frontends, reports or queries rather than the database. They will be discussed later. Design of the data entry screens.

Each data entry screen will be enclosed in a box and will have the name of the screen on the top, as the title. The top left hand corner will contain the abbreviated name of the organization. Then the field names will be placed inside the box one after the other as per the number of fields of each screen. The formats of the data entry screens are given in the appendix.

Data validation and error handling through forms.

INGRES VIFRED has a sub-set of tools that allows the user to declare complex validations to be fired on data being keyed in. These validations are fired prior to the placing of such data in the table structure. If the validations are found true , the data is placed in the table structure. If false, a message is displayed to the user, the data is prevented from being loaded into the table, and the user is required to reenter the data on the form again. Thus Ingres helps to ensure both entity and referential integrity of the data being saved in the table.

Data validation and error handling through INGRES 4GL.

INGRES 4GL also provides facilities to ensure data validation before entering and after leaving a field, on selecting a menu option or a key, to show error messages with popup screens and reenter data if required. List choices menu option will

be given for fields wherever possible so that the user will be able to choose among the choices and thus reduce data entry. Help screen will be provided so that the user can refer to it, whenever he needs help.

6.3 OUTPUT DESIGN

The output devices used in the system are the printer and the Visual display unit. So the outputs can be both hard copy outputs as well as display outputs. The outputs required by the system in the form of reports and queries are given below:

1. List of all vendors with address.
2. Details of a particular vendor with address.
3. List of all vendors on enquiry holiday.
4. List of all black-listed vendors.
5. List of all items.
6. List of all items pertaining to a particular department.
7. Details of a particular item.
8. All vendors supplying a particular item.
9. All items supplied by a particular vendor.
10. List of all items and the vendors supplying the same.
11. List of all prequalified vendors.
12. List of all prequalified vendors supplying a given item.
13. Other queries about vendors or items.

Other queries include ones like all vendors from a given place, all vendor with names starting with a given letter, etc.

Design of hard copy outputs.

The management may need any or some of these queries or reports at any time. So the system user should be able to generate them as fast as possible. The user will be given the facility to specify the number of copies required. The reports will have the name of the organization at the top. Below it there will be the name of the system with the date on which the report is being taken. Next will be the name of the report being taken. The body of the report will differ according to the nature of the requirement. Each page may be braked with the field used for sorting, if any used.

INGRES REPORT WRITER provides a high level report language that allows you to quickly create sophisticated reports without having to write an application program.

Design of the output screens.

The outputs designed are used for monochrome monitors only. The format of the screens are similar to that of input screens. At the top there will be name of the system, the name of the output screen and the name of the organization. The forms will be created using INGRES VIFREDS. The reports and the output screens are given in the appendix.

6.4 PROCESS DESIGN

The objectives of data flow oriented design is to provide a systematic approach for the derivation of a program structure, and present especially a global view of the software and the underlying architectural design of the software. The data flow diagram is a useful representation of the information requirements. The data flow oriented design allows a convenient transition from this representation to a design description of the program structure.

This process is accomplished as part of a five step process.

(1) The type of information flow is established.

(2) Flow boundaries are indicated.

(3) DFD is mapped into program structure.

(4) The control hierarchy is defined by factoring.

(5) The resultant structure is refined.

The main processes involved in the VIMS are:

(1) Receiving inputs.

(2) Validating inputs.

(3) Assigning of information to the data base.

(4) Getting the type of report or query required.

(5) Retrieving the data.

(6) Outputting the data.

These processes are designed and coded after the DFDs and structure charts are constructed and analyzed. The charts are given in the appendix.

TESTING

CHAPTER 7

TESTING

Software testing is one element of a broader topic that is often referred to as verification and validation. Verification refers to the set of set of activities that ensure that software correctly implements a specific function. Validation refers to a different set of activities that ensure that the software that has been built is traceable to customer requirements.

A strategy for software testing from a procedural point of view, testing within context of software engineering is actually a series of three steps that are implemented sequentially.

1.Unit Testing

Tests focus on each module individually, ensuring that if functions properly as a unit. Unit testing makes heavy use of white box testing techniques, exercising specific path in a module's control structure to ensure complete coverage maximum error detection.

The tests that occur as part of unit testing are :

i. Module Interface

To ensure that information properly flows in and out of the program unit under test.

After software has been constructed, a set of highorder tests are conducted. Validation criteria must be tested.

3.Validation Testing

It provides the final assurance that software meets all functional, behavioral and performance requirements. Black box testing techniques are used exclusively during validation.

The system objectives, functional and performance requirements were looked to see whether all of the system were satisfied by the system.The system was then shown to user and also the reports generated by the system. The system was tested with sample test data provide them.

The last high-order testing falls outside the boundary of software engineering and into the broader context of computer system engineering. Software once validated must be combined with other system elements (e.g. hardware,people,databases). System testing verifies that all elements mesh properly that overall system function is achieved.

ii. Local Data Structure

To ensure that data stored temporarily maintains its integrity during all steps in an algorithm's execution.

iii.Boundary conditions

To ensure that the module operates properly at boundaries established to limit or restrict processing.

2.Integration testing

It address the issues associated with the dual problems of verification and program construction. Black box test case design techniques are most relevant during integration, although a limited amount of white box testing may be used to ensure coverage of major control paths. Integration testing is a systematic technique for constructing the program structure while at the same time conducting tests to uncover errors associated with interfacing. The objective is to take unit-tested modules and build a program structure that has been depicted by design.

Incremental Integration Strategies are

1. Top-Down Integration.
2. Bottom-Up Integration.

Test cases were designed so that all unit tested modules were expected from the main module and the reports were generated to check the results with the expected results.

IMPLEMENTATION

CHAPTER 8

IMPLEMENTATION

Implementation is the stage of the project when the theoretical design is converted into a working system. The stage consists of:

1. Testing the developed application with the sample data.
2. Correcting of errors.
3. Imparting training to users of the system
4. Getting the users to actually work with the system.
5. Making necessary changes as desired by the user.

This system has been tested with sample data and adequate corrections to the system were made as per the user requirements. The user has a very little chance of committing data entry errors since the program has been provided with validation checks. The end user, even with minimum knowledge of computers will find it easy to key-in-data and understand the error messages. Help facility is provided for wherever necessary.

For the purpose of implementing the system into the vendor cell of the organization, the first task is to get the recognition of the purchase manager. Test data will be entered and reports generated by the system will be shown to the purchase manager. If they are satisfied, the system can be handed over to the data-entry operator.

When the basic hardware requirements are satisfied, the system can be implemented.

Education and training.

Even though the system is very much user-friendly and could be understood by anyone who understands the functions of a menu, to be on the safer side, the users of the system should be properly educated and trained so that they can make efficient use of the system.

The user need not be aware of INGRES at all to be able to use the system. Still, he/she is made aware of the most basic concepts of INGRES, its advantages and how it differs from other languages. Then the user should be introduced to the system, like its aim, the outputs produced, etc.

Training

After the awareness part, the user has to trained to user the system. He/she should be taught about the functions of the different keys, even though an elaborate help system is provided.

During the training period, the most important thing to be taught is how to get out of and get into the system at any point. The system is so designed that the user could be trained to use the system efficiently in a few hours.

Changeover

Since the system has to handle a large amount of data at a time, it is safe to have a parallel changeover. We have to create different schedules to change

the existing manual system to the new automated one. At the end of each schedule, reports of performance of the system so far must will be useful to carry out the next schedule. At each stage the new computerized system should be compared with the manual system. If the results are similar to that obtained from the manual system, we can replace the existing one with the new one.

Documentation

After testing and training, the whole system was documented and presented in a readable form. This was to ensure that at any point, the user was not at a loss of ideas about what to do next. The documentation of the proposed system was handed over to the respective authorities.

The implementation of the system was completed successfully and is being used efficiently.

CONCLUSION

CHAPTER 9

CONCLUSION

VENDOR INFORMATION AND MANAGEMENT SYSTEM is a software developed for using Vendor cell of the Purchase department.The data is entered into the system through data entry forms.Reports are generated according to the requirements of the vendor cell.

The system is developed to allow all the work of the vendor cell to be computerized most efficiently. A lot of effort has gone into this project to make it as user-friendly as possible and to make the work of the users as little as possible. This assignment was not meant to be just a simple solution to the problem that was posed.It is meant to be the foundation stone for something that scales the highest pinnacles of excellence.

SCOPE FOR FURTHER DEVELOPMENT

CHAPTER 10

SCOPE FOR FURTHER DEVELOPMENT

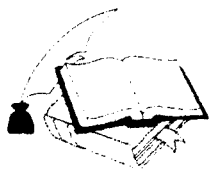
The Vendor Information and Management System, as such has a lot of room for improvement. A lot of features can be added to it. Other queries or reports, if needed by the Vendor cell in the future, can be incorporated in the software. One of my aims in development of this system was to give the user of the software an option where he/she could alter the format of the input/output screen according to his/her wish. ie, to give them the option for screen designing. It could be done with a little more effort by incorporating the Screen Designer Interface into the program. But the time factor in the project work did not allow me to do it. It could be done by any future programmer in the organization who is a little innovative.

The database of the items are maintained in this software. So this software, with enhancements could be used in the materials management system also.

BIBLIOGRAPHY

CHAPTER 11

BIBLIOGRAPHY



INGRES / SQL REFERENCE MANUAL.

INGRES / VIFRED REFERENCE MANUAL.

INGRES / ABF REFERENCE MANUAL.

INGRES / QBF REFERENCE MANUAL.

INTRODUCTION TO INGRES - IVAN BAYROSS, FAHIM SHAIKH, ARUNDHATIA. (BPB publications - 1993).

MASTERING INGRES - IVAN BAYROSS, FAHIM SHAIKH, ARUNDHATI A. (BPB Publications - 1993).

SYSTEM ANALYSIS AND DESIGN - ELLIAS M. AWAD

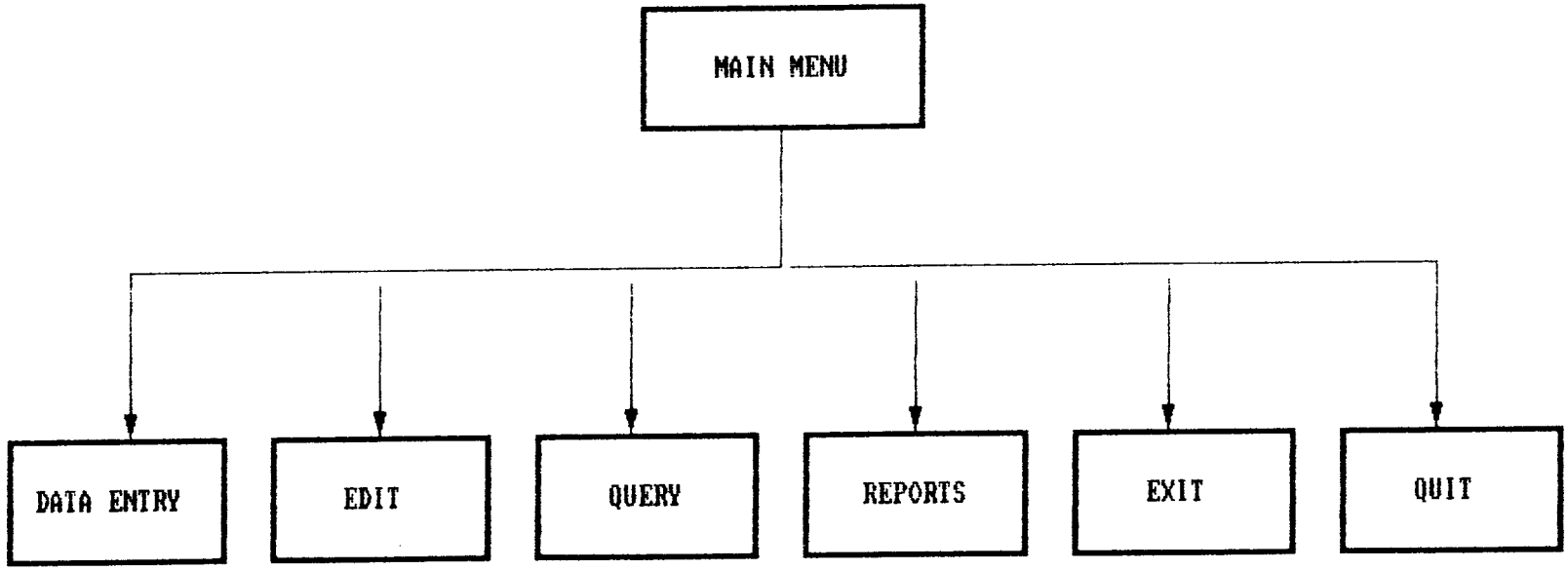
AN APPROACH TO DATABASE MANAGEMENT - C.J.DATE

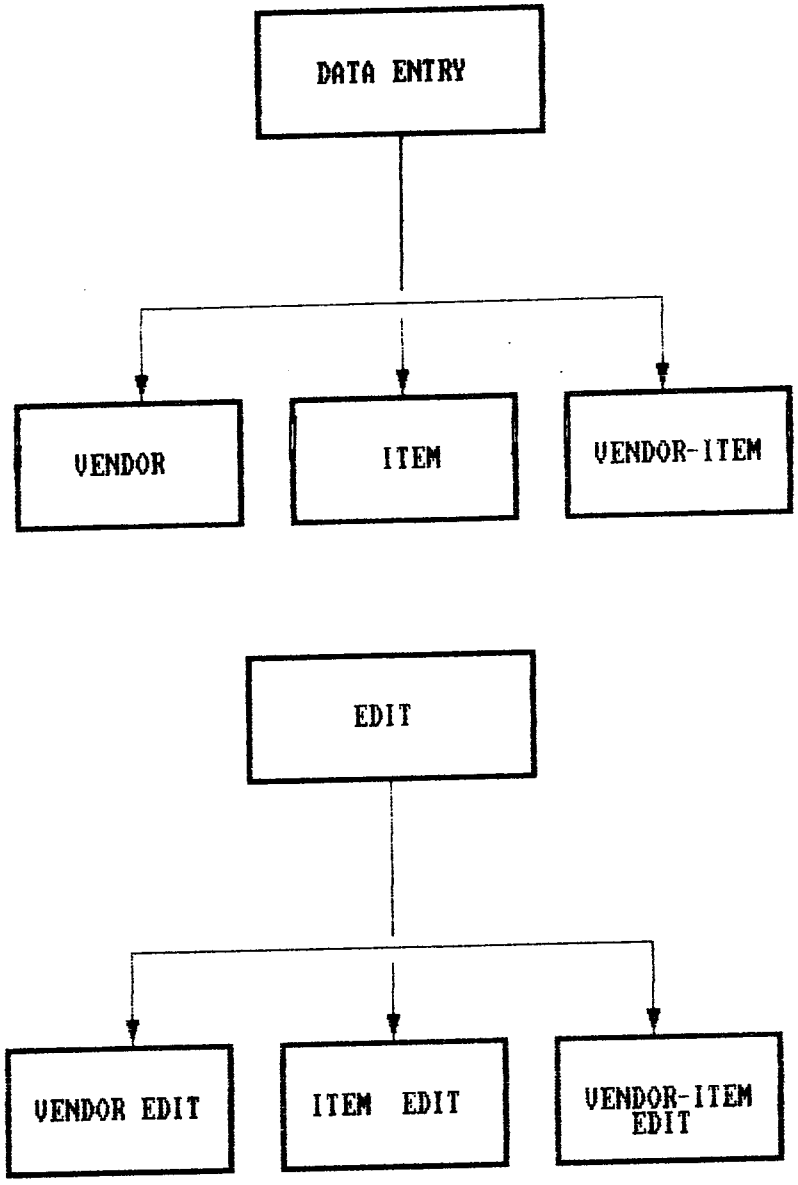
SYSTEM ANALYSIS AND DESIGN OF INFORMATION SYSTEM - JAMES A. SENN.

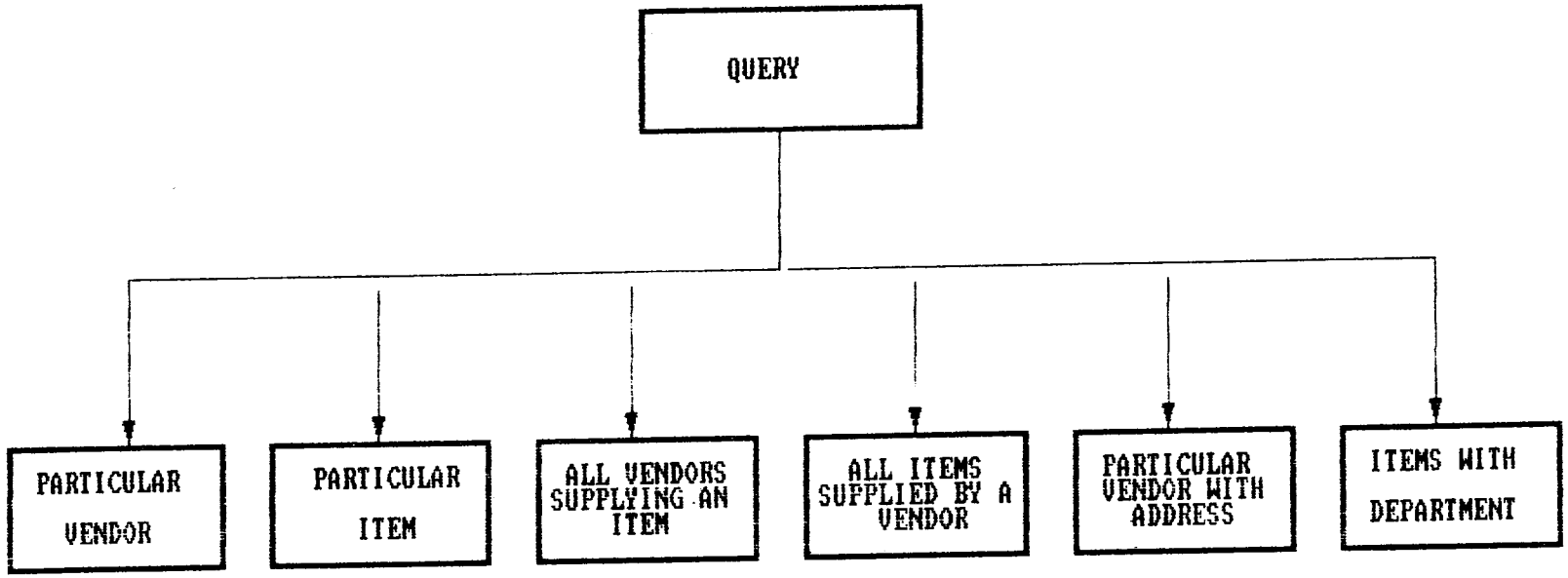
APPENDIX

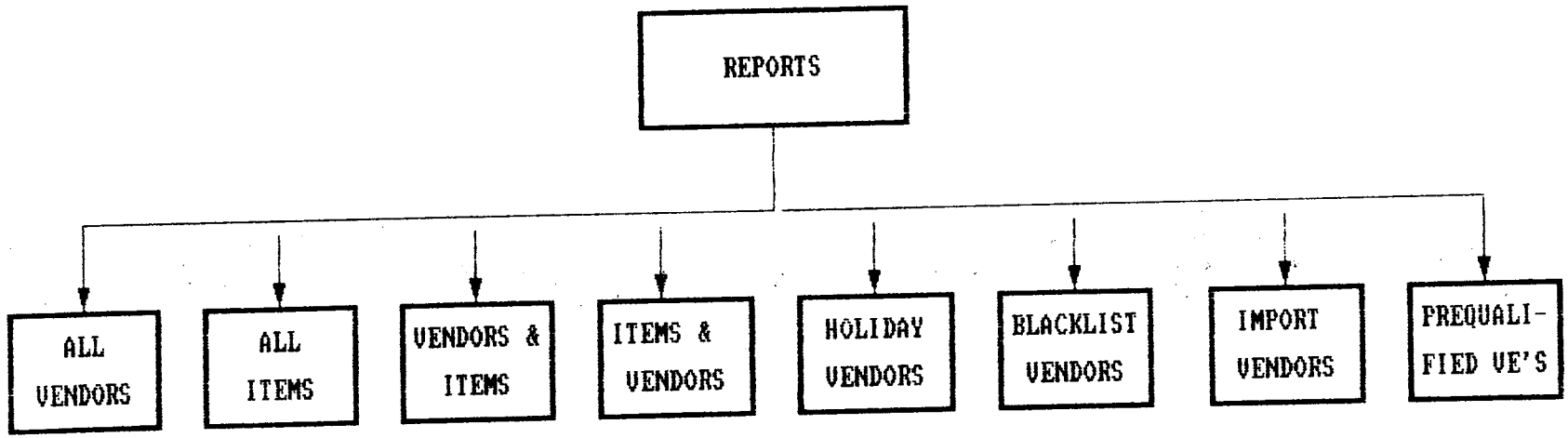
SYSTEM CHART

STRUCTURE CHART



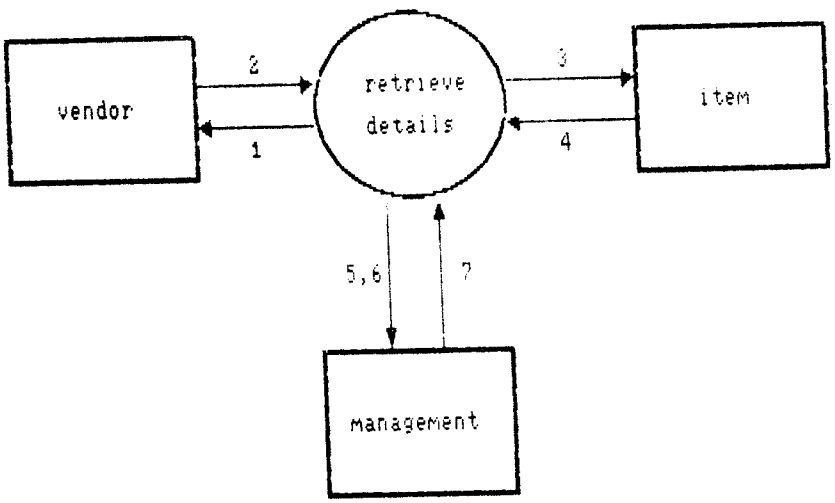

DATA ENTRY
VENDOR
ITEM
VENDOR-ITEM
EDIT
VENDOR EDIT
ITEM EDIT
VENDOR-ITEM EDIT


QUERY
PARTICULAR VENDOR
PARTICULAR ITEM
ALL VENDORS SUPPLYING AN ITEM
ALL ITEMS SUPPLIED BY A VENDOR
PARTICULAR VENDOR WITH ADDRESS
ITEMS WITH DEPARTMENT

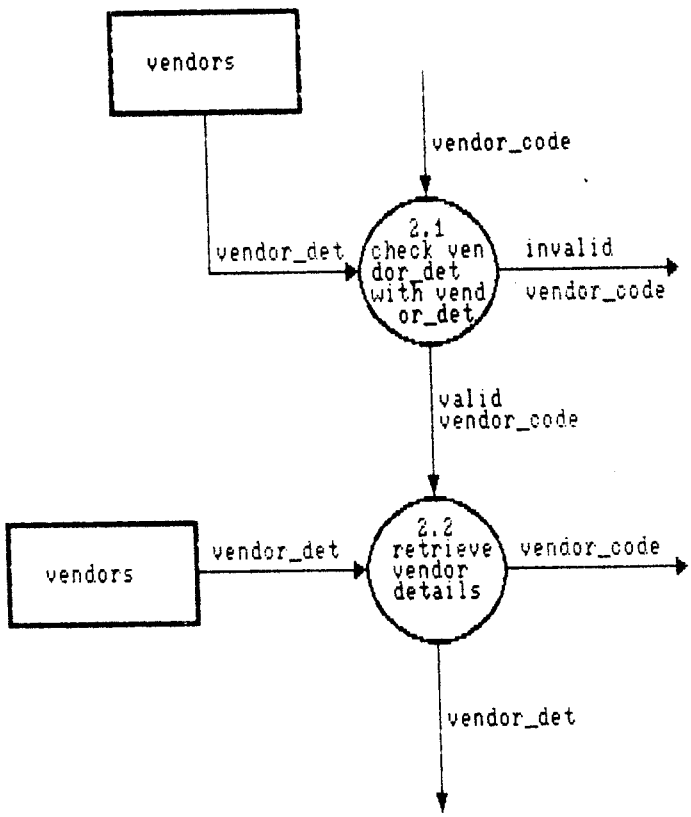

REPORTS
ALL VENDORS
ALL ITEMS
VENDORS & ITEMS
ITEMS & VENDORS
HOLIDAY VENDORS
BLACKLIST VENDORS
IMPORT VENDORS
PREQUALI-FIED VE'S

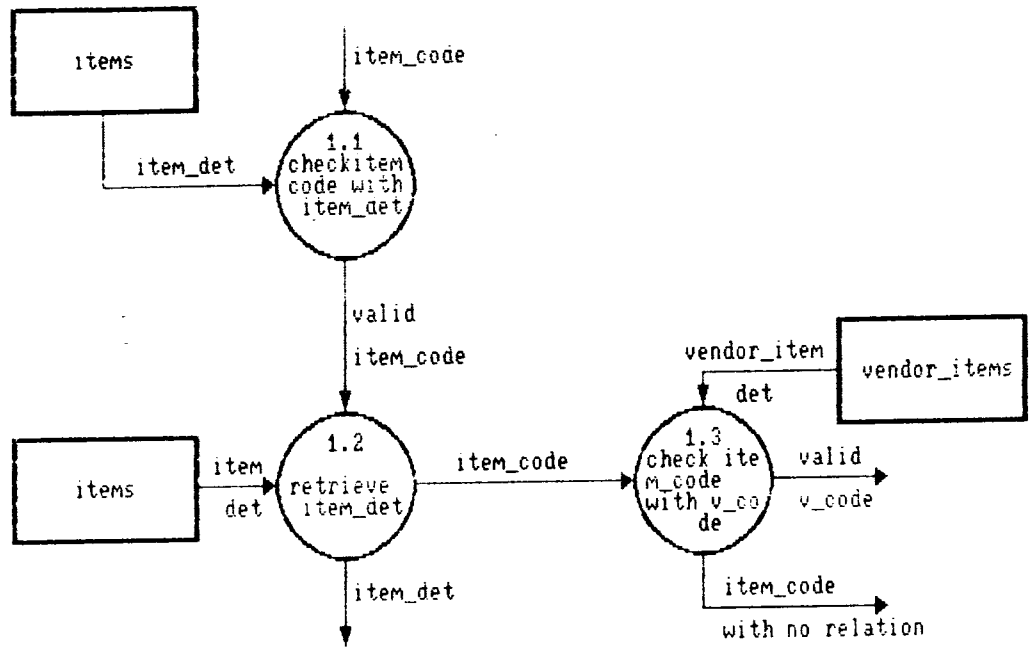
DATA FLOW DIAGRAMS

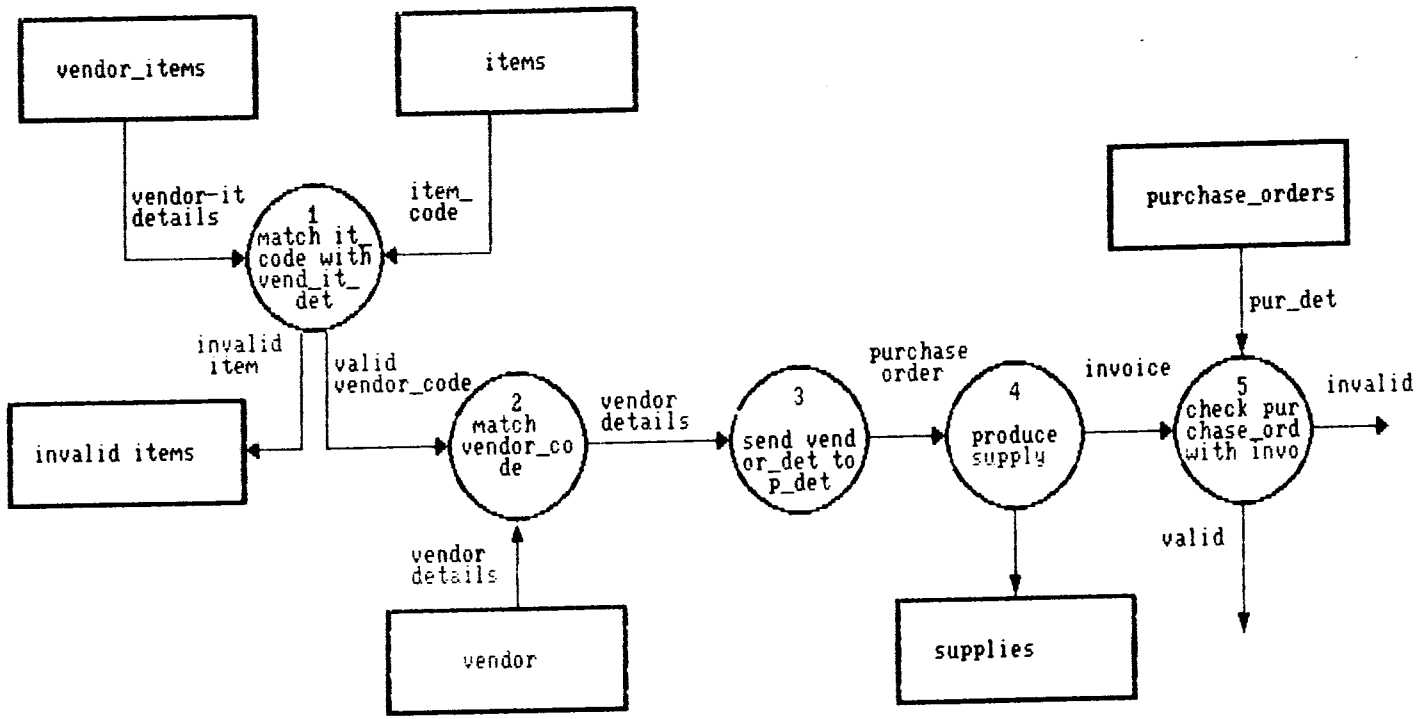
context DFD



1.vendor number
2.vendor details
3.item number
4.item details
5.vendor details
6.item details
7.authorization


vendors
vendor_code
vendor_det
2.1
check ven
dor_det
with vend
or_det
invalid
vendor_code
valid
vendor_code
vendors
vendor_det
2.2
retrieve
vendor
details
vendor_code
vendor_det


items
item_code
1.1
checkitem
code with
item_det
item_det
valid
item_code
vendor_item
vendor_items
det
items
item
det
1.2
retrieve
item_det
item_code
1.3
check ite
m_code
with v_co
de
valid
v_code
item_det
item_code
with no relation



1.vendor number

2.vendor details

3.item number

4.item details

5.vendor details

6.item details

7.authorization

TABLES

Name: vendor1
Created: 14/05/96 11:18:00
Version: ING6.0

VENDOR TABLE

Column Name	Type	Length	Nulls	Defaults	Key Seq
vname	char	50	no	no	
vaddress1	char	40	yes	no	
vaddress2	char	40	yes	no	
vaddress3	char	40	yes	no	
vcode	char	5	no	no	1
regno	char	5	yes	no	
telno	char	15	yes	no	
telex	char	15	yes	no	
faxno	char	15	yes	no	
enqhol	char	1	yes	no	
blklist	char	1	yes	no	
status	char	1	yes	no	
prequal	char	1	yes	no	
remark	char	100	yes	no	

Name: item_main
Created: 11/05/96 12:05:00
Version: ING6.0

ITEM_MAIN TABLE

Column Name	Type	Length	Nulls	Defaults	Key Seq
icode	char	10	no	no	
iname	char	50	yes	no	

Name: item_sub
Owner: factfd
Created: 11/05/96 12:05:00
Version: ING6.0

ITEM SUB TABLE

Column Name	Type	Length	Nulls	Defaults	Key Seq
icode	char	10	yes	no	
icodex	char	5	yes	no	
iname	char	50	yes	no	
inamex	char	50	yes	no	
igroup	char	50	yes	no	
remark	char	100	yes	no	

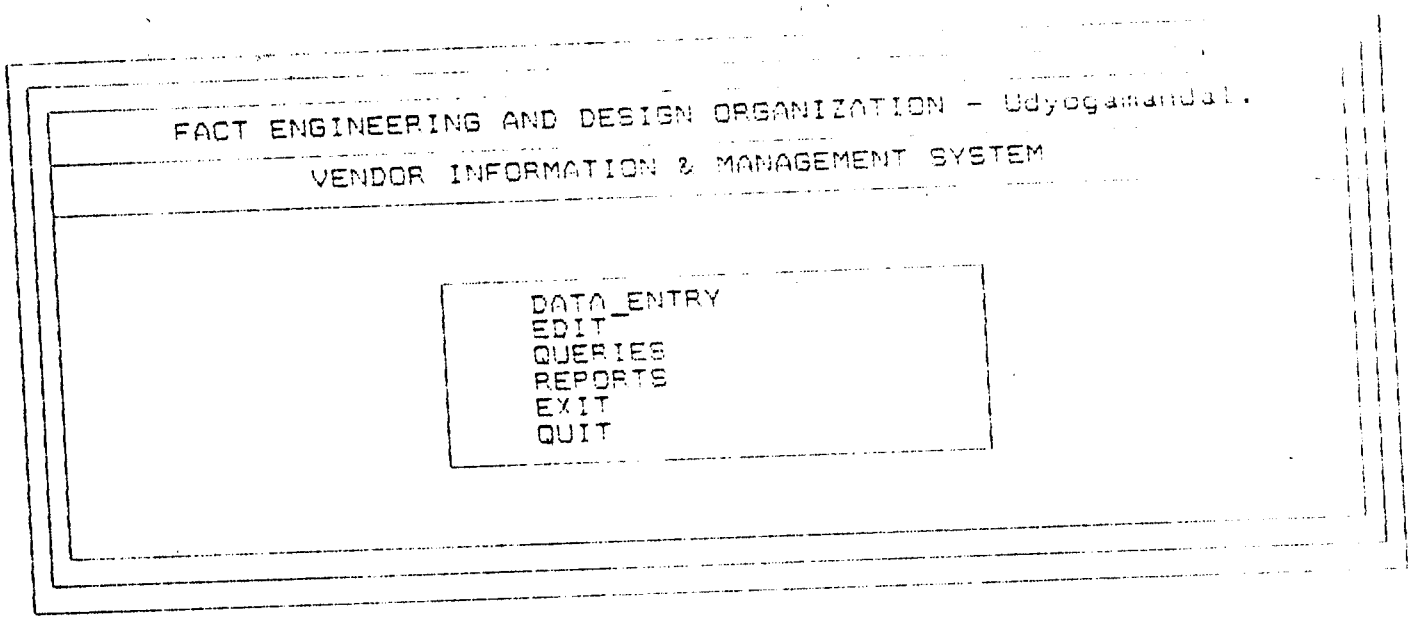
---

me: ven_item
eated: 11/05/96 12:05:00
rsion: ING6.0

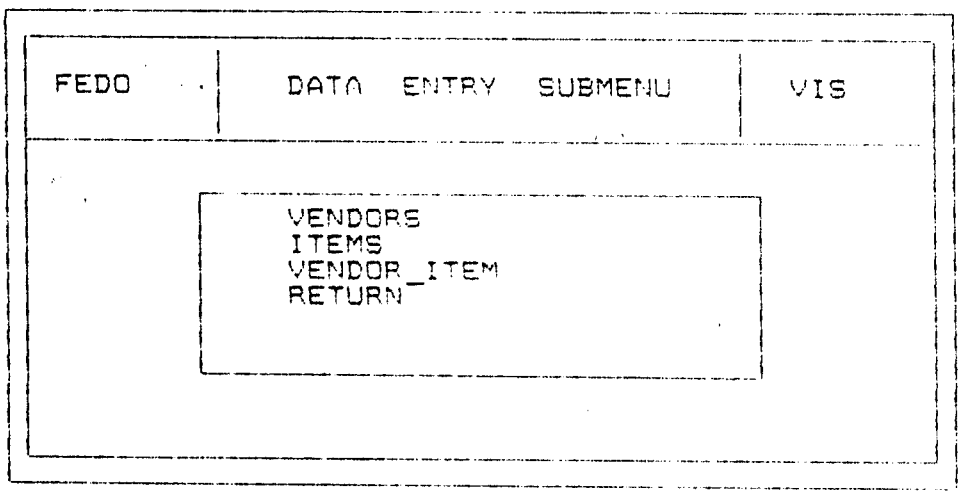
VEN_ITEM TABLE

lumn Name	Type	Length	Nulls	Defaults	Key Seq
code	char	10	no	no	1
code	char	10	no	no	2
codex	char	5	yes	no	
ade	char	1	yes	no	
p_imp	char	1	yes	no	

FORMS



Select(F9) Help(F4) End(F3)



Select(F9) End(F3)

FEDO | VENDOR DATA ENTRY SCREEN | VIS

VENDOR CODE : V4

VENDOR NAME : INDIAN RARE EARTHS,
VENDOR ADDRESS: 11,CHAVARA SOUTH P.O,
KOLLAM,
KERALA - 690 973

REGISTER NO : 7659

TELEPHONE NO : 0479-753572

TELEX NO : 0479-571715

FAX NO : 041-444563

REMARKS(IF ANY): NILL.

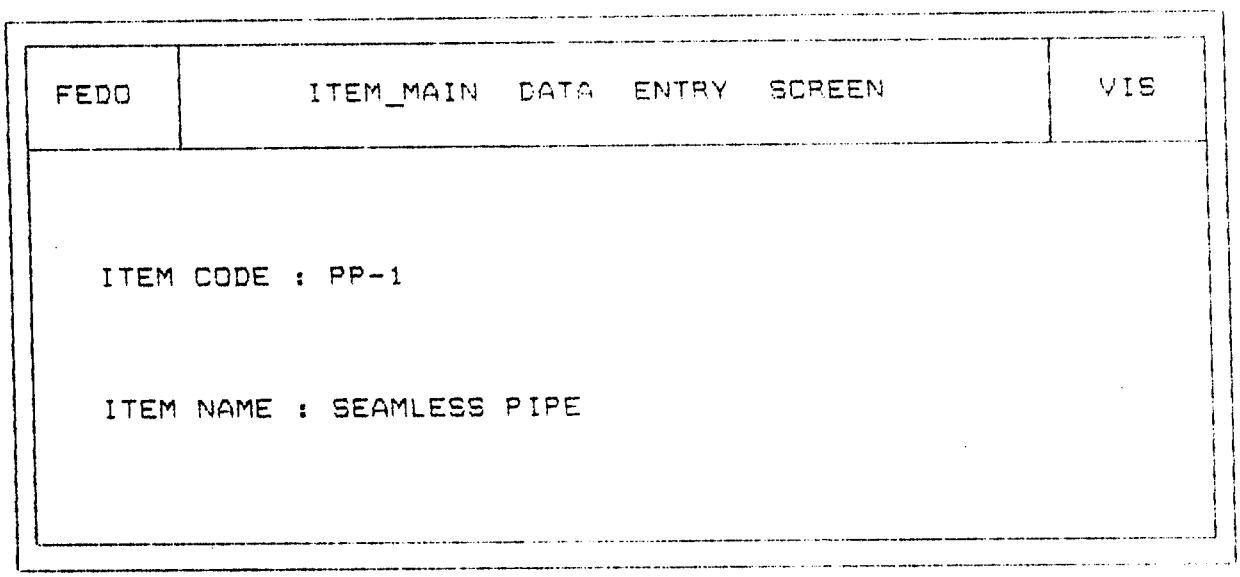
ENQUIRY HOLIDAY (Y/N) : N

BLACK LISTING (Y/N) : N

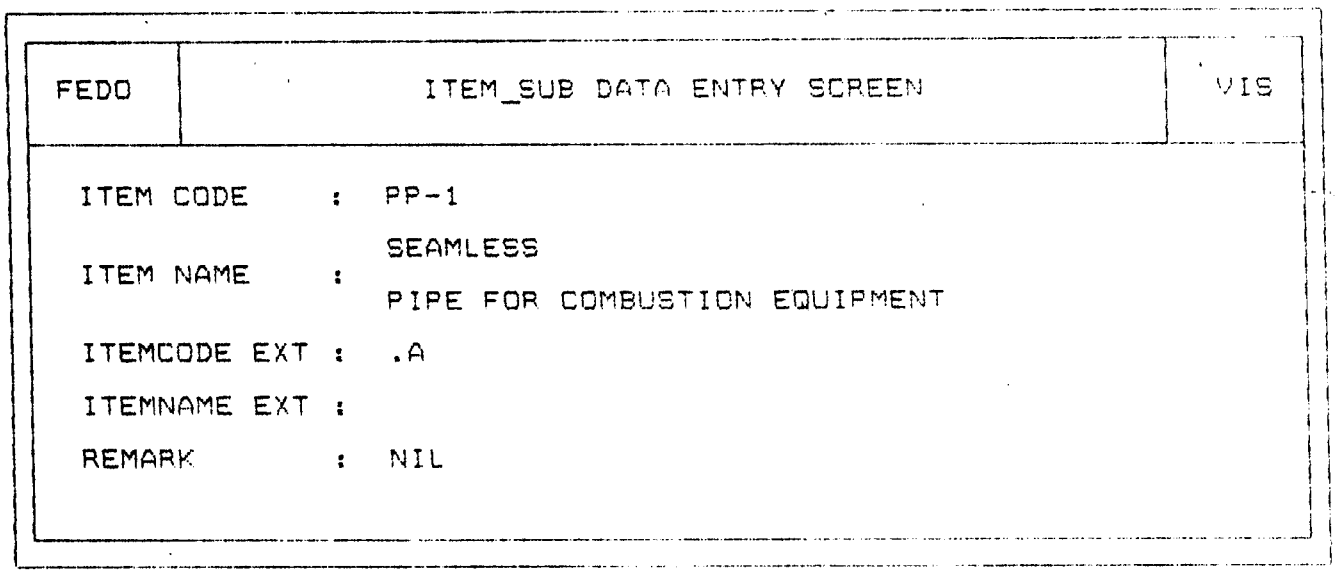
TRADER/MANUFACTURER (T/M): T

PREQUALIFIED (Y/N) : Y

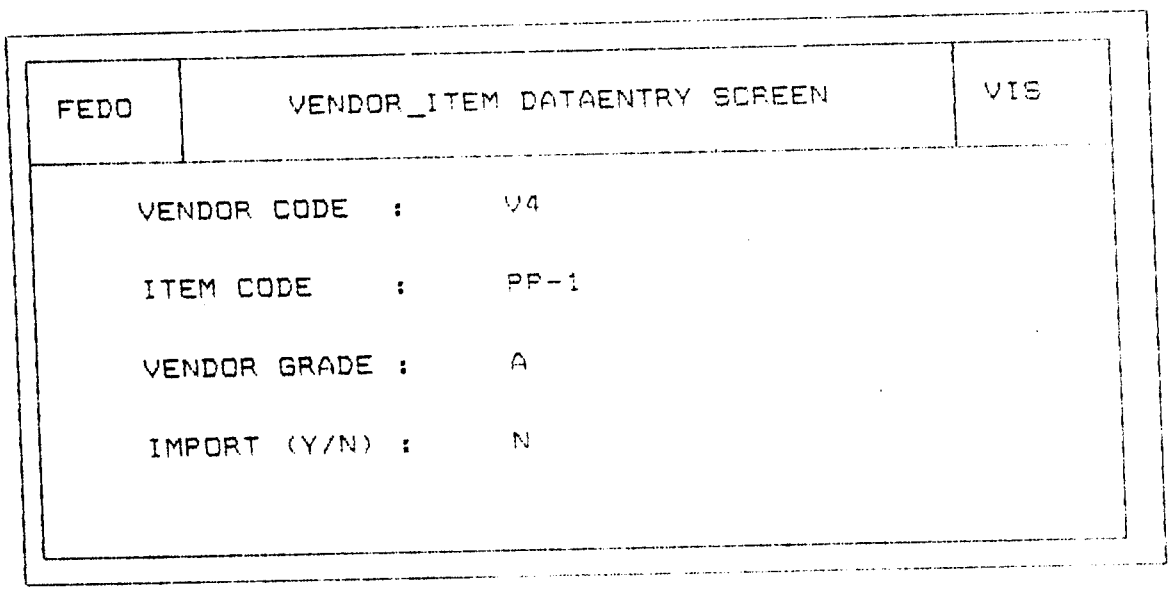
)ave(F4) End(F3) Clear(F2)



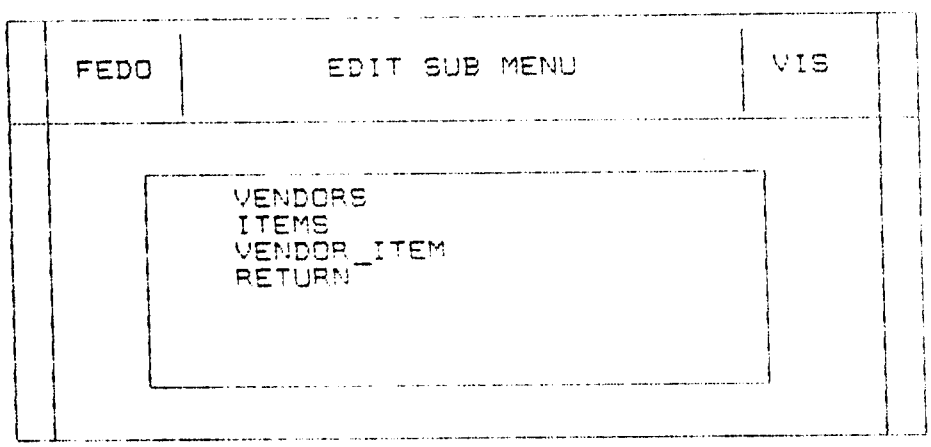
Save(F4) End(F3) Clear(F2)



Save(F4) End(F3) Clear(F2) Start(F10)



Save(F4) End(F3) Clear(F2) :



Select(F9) End(F3)

FEDO	VENDOR EDIT SCREEN	VIS

VENDOR CODE : V1

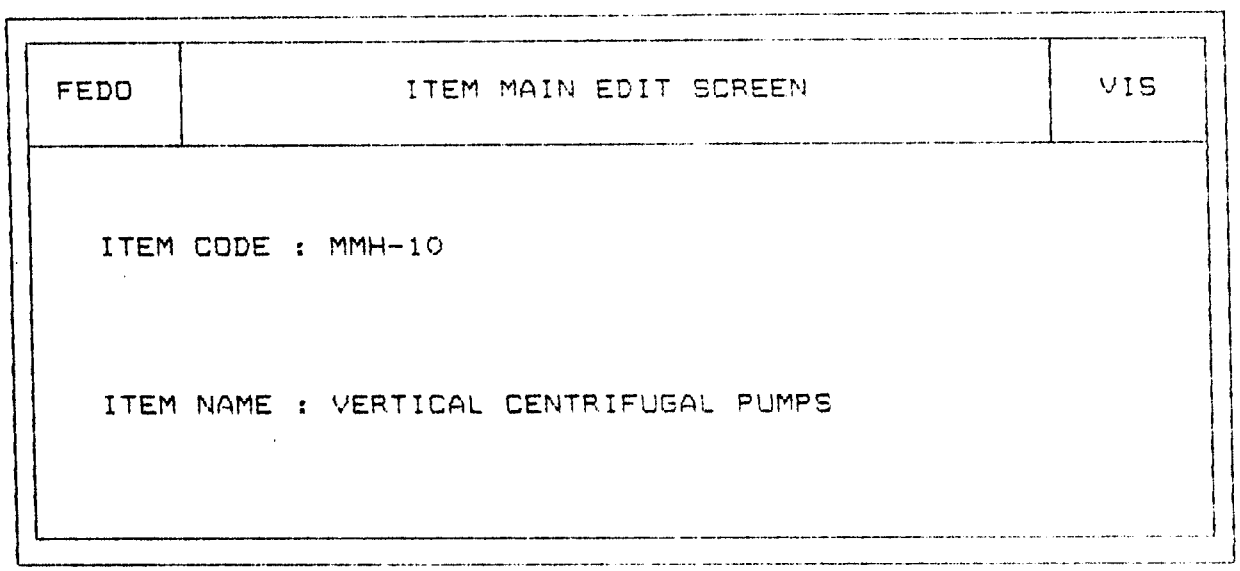
VENDOR NAME : JASUBHAI RICHARD SIMON LTD.
VENDOR ADDRESS: 207,THAKAR TOWERS, 2 FLOOR,
PLOT NO. 86, SECTOR NO. 17,
NEW BOMBAY - 400 708

REGISTER NO : 4654
TELEPHONE NO : 042-5462342
TELEX NO : 042-4353421
FAX NO : 042-7635354

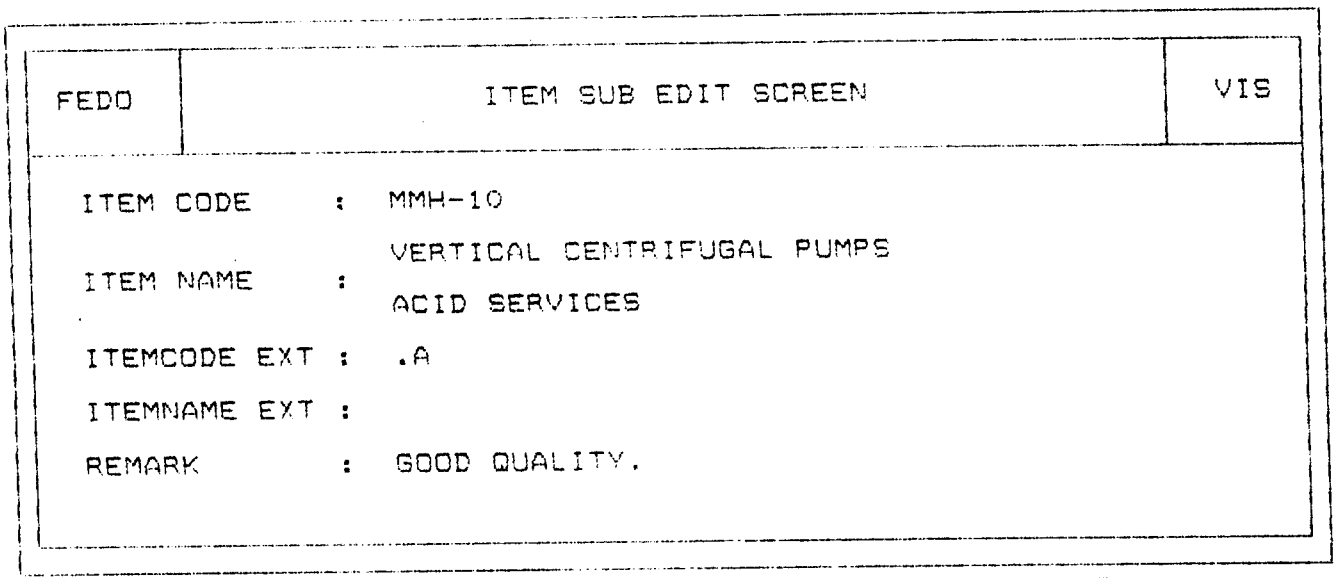
ENQUIRY HOLIDAY (Y/N) : N
BLACK LISTING (Y/N) : N
TRADER/MANUFACTURER (T/M): T
PREQUALIFIED (Y/N) : Y

REMARKS(IF ANY): NIL.

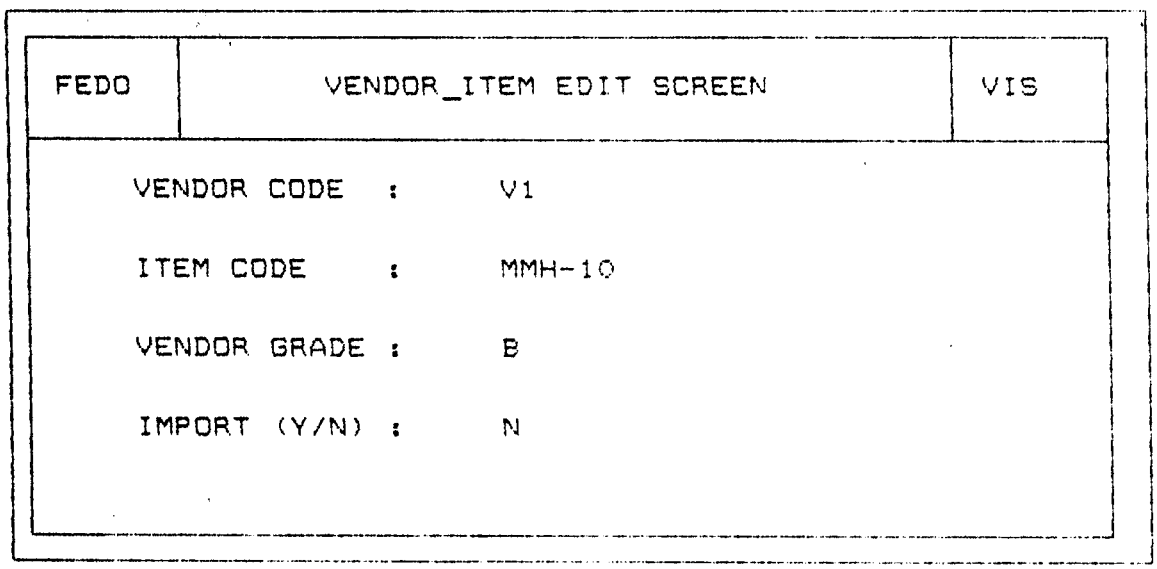
Update(F4) End(F3) Delete(F10) Refer Table(F9)



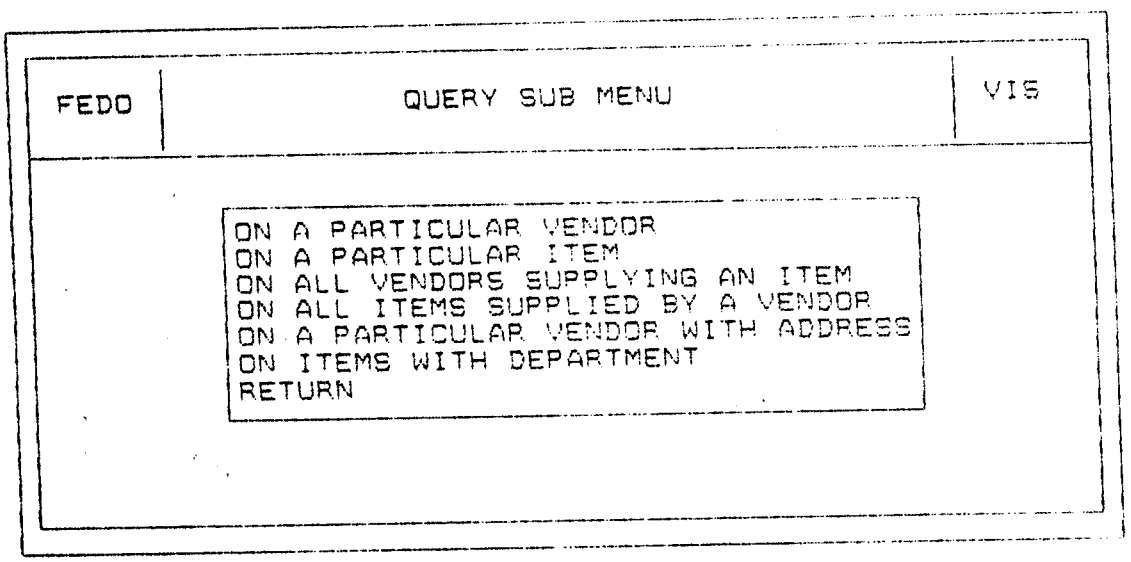
date(F4) End(F3) Delete(F10) Refer Table(F9)



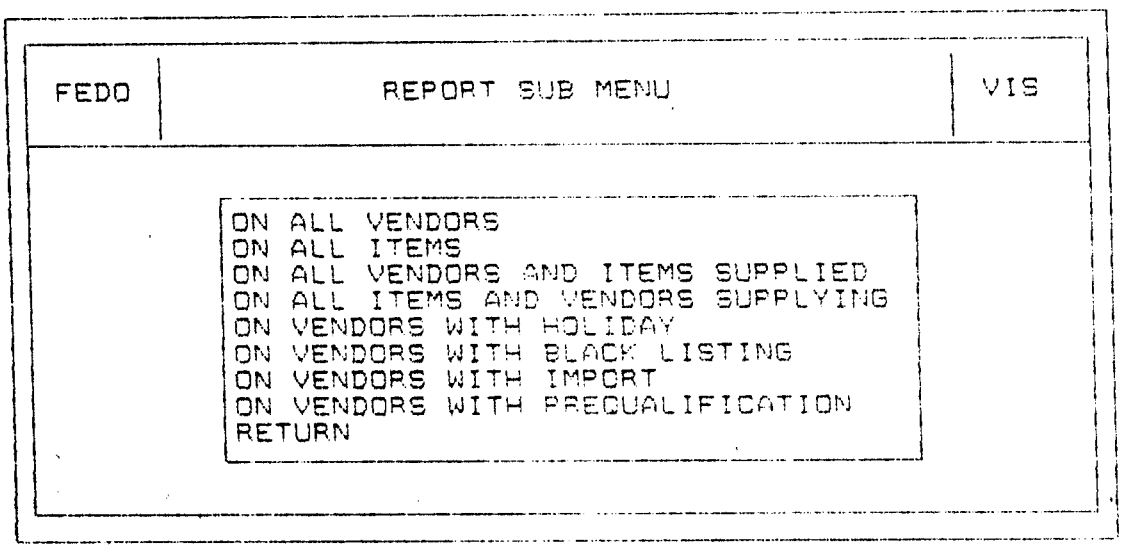
Start(F2) Update(F4) End(F3) Delete(F10) Refer Table(F9)



pdate(F4) End(F3) Delete(F10) Refer Table(F9)



elect(F9) End(F3)



Select(F9) End(F3)

FACT ENGINEERING AND DESIGN ORGANIZATION

VENDOR INFORMATION AND MANAGEMENT SYSTEM

SYSTEM HELP

This is an integrated Vendor Information System developed for the use of FEDO-Vendor Cell of Purchase Department. The opening screen will present a menu driven user interface with the following options:

1. Data_Entry
2. Edit
3. Reports
4. Queries
5. Exit
6. Quit

1. Data_Entry:

This option when invoked opens a sub menu which includes VENDORS , ITEMS & VEN_ITEMS. Select the option 'VENDORS' to enter the vendor information. Select the option 'ITEMS' to enter the item details. Select the option 'VEN_ITEMS' to enter the information connecting the vendors and items which will be helpful for generating queries and reports.

2. Edit :

This option opens a submenu which includes VENDOR ITEM, VEN_ITEM edit screens. Select any one of these screens to view delete and update data.

3. Reports:

This option has a sub menu from which you can

select any one of the pre-designed reports which will be generated by the system.

4. Queries:

This option has a sub menu from which you can select any one of the queries which will be generated as per the need of the user.

5. Exit:

Use this option to temporarily exit to the UNIX prompt. To return to the system type EXIT or press Ctrl_D.

6. Quit :

Select this option to quit the system.

REPORTS

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM

VENDORS SUPPLYING AN ITEM

VENDOR CODE : V3

VENDOR NAME : KIRLOSKAR & BROTHERS CO.,

ADDRESS : NO-126,PRINCE PLAZA,
BIG BAZAR STREET,
COIMBATORE - 1.

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM
ITEMS SUPPLIED BY A VENDOR

SR.NO.	ITEM CODE	ITEM DETAILS	REMARK
1	MMH-10	VERTICAL CENTRIFUGAL PUMPS	
2	MMH-10.A	VERTICAL CENTRIFUGAL PUMPS FOR ACID SERVICES	
3	MMH-11	COOLING TOWERS	
4	MMH-11.A	COOLING TOWERS FOR PROCESS PLANTS	

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM

ITEM DETAILS BY ITEM CODE

ITEM CODE : MMH-11 .A

ITEM NAME : COOLING TOWERS
FOR PROCESS PLANTS

REMARK : NILL

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM

VENDOR DETAILS BY VENDOR CODE

VENDOR CODE : V1

VENDOR NAME : JASUBHAI RICHARD SIMON LTD.

VENDOR ADDRESS: 207,THAKAR TOWERS, 2 FLOOR,
PLOT NO. 86, SECTOR NO. 17,
NEW BOMBAY - 400 708

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM

VENDOR DETAILS BY VENDOR CODE

VENDOR CODE : V1

VENDOR NAME : JASUBHAI RICHARD SIMON LTD.

VENDOR ADDRESS: 207,THAKAR TOWERS, 2 FLOOR,
PLOT NO. 86, SECTOR NO. 17,
NEW BOMBAY - 400 706

TELEPHONE NO : 012-5462312

TELEX NO : 012-4353121

FAX NO : 012-7635351

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM
ITEMS SUPPLIED BY A VENDOR

SR.NO:	ITEM CODE	ITEM DETAILS	REMARK
1	MMH-10	VERTICAL CENTRIFUGAL PUMPS	
2	MMH-10.A	VERTICAL CENTRIFUGAL PUMPS FOR ACID SERVICES	
3	MMH-11	COOLING TOWERS	
4	MMH-11.A	COOLING TOWERS FOR PROCESS PLANTS	

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM
VENDOR DETAILS ON ENQUIRY HOLIDAY

SL.NO	VENDOR CODE	VENDOR NAME & ADDRESS
1	V1	JASUBHAI RICHARD SIMON LTD. 207,THAKAR TOWERS, 2 FLOOR, PLOT NO. 86, SECTOR NO. 17,
2	V2	POWEROBUILD-LTD.,708 PO BOX NO. 28 VITHAL UDYOGA NAGAR, PIN - 300121

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM
VENDOR DETAILS ON PREQUALIFICATION

L.NO	VENDOR CODE	VENDOR NAME & ADDRESS
1	V1	JAGUBHAI RICHARD SIMON LTD., 207,THAKAR TOWERS, 2 FLOOR, PLOT NO. 86, SECTOR NO. 17,
2	V2	POWEROBUILD-LTD.,708 PO BOX NO. 38 VITHAL UDYOGA NAGAR,
3	V4	INDIANRARE1EARTHS, 11,CHAVARA SOUTH P.O, KOLLAM, KERALA - 690 573

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM
VENDOR DETAILS ON BLACK LIST

SL.NO	VENDOR CODE	VENDOR NAME & ADDRESS
1	V2	POWER BUILD LTD., PO BOX NO. 25 VITHAL UDYOG NAGAR, PIN - 390121

FACT ENGINEERING AND DESIGN ORGANIZATION
VENDOR INFORMATION & MANAGEMENT SYSTEM

DEPARTMENTWISE ITEM DETAILS

D:	ITEM CODE	ITEM DETAILS	REMARK
	MMH-1	BELT WEIGHERS	
	MMH-10	VERTICAL CENTRIFUGAL PUMPS	
	MMH-10 .A	VERTICAL CENTRIFUGAL PUMPS FOR ACID SERVICES	
	MMH-10 .B	VERTICAL CENTRIFUGAL PUMPS FOR PROCESS APPLICATION	
	MMH-10 .C	VERTICAL CENTRIFUGAL PUMPS FOR WATER SERVICES	
	MMH-11	COOLING TOWERS	
	MMH-11 .B	COOLING TOWERS FOR AIR CONDITIONING APPLICATIONS	
	MMH-11 .A	COOLING TOWERS FOR PROCESS PLANTS	
	MMH-15	WEIGH BRIDGES	
	MMH-2	FORK LIFT TRUCKS	

	MMH-15	WEIGH BRIDGES	
10	MMH-2	FORK LIFT TRUCKS	