SCHOOL MANAGEMENT SYSTEM

PROJECT WORK DONE AT
YOUNG SOFT PVT. LTD.,
ELECTRONIC CITY,
BANGLORE – 561 229.

PROJECT REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
M.Sc [APPLIED SCIENCE] SOFTWARE ENGINEERING
OF BHARATHIAR UNIVERSITY, COIMBATORE.

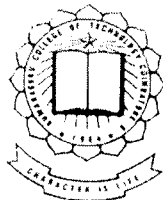SUBMITTED BY

K.PRAKASH
REG NO. 9937S0084

UNDER THE GUIDANCE OF

External Guide   Internal guide

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
KUMARAGURU COLLEGE OF TECHNOLOGY
COIMBATORE – 641 006
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY

(Affiliated to Bharathiar University)

COIMBATORE – 641 002

SEPTEMBER – 2002

CERTIFICATE

This is to certify that the project entitled

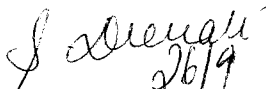# SCHOOL MANAGEMENT SYSTEM

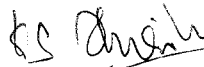DONE BY

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Professor and HOD

Internal Guide

Submitted to University Examination held on 26:.09:.2002.....

Internal Examiner

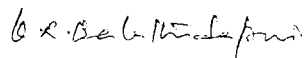External Examiner

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19-09-2002

TO WHOMSOEVER IT MAY CONCERN

This is to state that **Mr.K.PRAKASH,** student of Kumaraguru College of Technology, Coimbatore has successfully completed the project on ' **school management system**' in our company, from **27-05-2002** to **19-09-2002** under the guidance of **Mr.BALATHANDAPANI.K.R,** project manager.

We wish him all success in his future endeavors.

Mr.BALATHANDAPANI.K.R
Project manager

Dedicated

to

My Ever Loving Parents

&

Lord Almighty

Acknowledgement

ACKNOWLEDGEMENT

To add meaning to the perception, it is my indebtedness to honor a few who had helped me in this endeavor, by placing them on record.

With profound gratitude, I am extremely thankful to **Dr.K.K.Padmanaban B.Sc (Eng), M.Tech, Ph.D.**, Principal, Kumaraguru Collage of Technology, Coimbatore for providing me an opportunity to undergo the **MSc** [APPLIED SCIENCE SOFTWARE ENGINEERING] course and thereby this project work also.

I extend my heartfelt thanks to my CSE department head **Prof.Dr.S.Thangasamy B.E (Hons), Ph.D.**, for his kind advice and encouragement to complete this project successfully.

It's my privilege to express my deep sense of gratitude and profound thanks to **Mr.Balathandabany B.E, M.S.**, Project Manager, YOUNG SOFT ptv ltd, Bang lore for having allowed me to do my project work in his esteemed team and for helping me in all means in successful completion of this project work.

Gratitude will find least meaning without thanking my guide **Ms. S. Rajini B.E.** and course coordinator **Mrs. S. Devaki B.E, M.S,** for the valuable guidance and support throughout my project.

Words are boundless for me to express my deep sense of gratitude and profound thanks to **Ms. Shanthi B.E, M.S.**, Project Guide and all my associates at Young Soft, for all their kind guidance and encouragement towards my project work.

My gratitude is due to all staff members of CSE department, my parents and all my friends for their moral support and encouragement for successful completion of my project.

Synopsis

This project is done at YOUNG SOFT Pvt Ltd, Bang lore. The Software is developed for OXFORD MATRICULATION SCHOOL. The main purpose of this project is to develop software tool for the overall management of the school. This Project entitled "SCHOOL MANAGEMENT SYSTEM" is developed using Visual Basic 6.0. Oracle is used for data storing, retrieval and manipulation purposes.

The School Management System is a browser based intranet application. The system facilitates the users to access their need in a centralized manner.

In School Management System the various activities are automated and this produce sophisticated reports as per to meet the School requirements. This reduces the time consumed by the end user, and also the information provided by the system will be accurate. The system is more user friendly.

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Introduction

INTRODUCTION

1.1   ORGANISATION PROFILE

Young Soft, Ban galore is currently located at the STPI (Software Technology Parks of India, Ban galore) Complex, which operates as a full fledged offshore development center.

YOUNG SOFT is a global software services company focusing on Software Development, IT Consulting Services and Products. Young Soft has offices in Singapore, Jakarta (Indonesia) and Ban galore (India) with associate offices in London (UK) and Chennai (India). Young Soft, India, is currently pursuing the ISO 9001:2000 certification for Quality Management Systems & Processes.

SOFTWARE SERVICES

Young Soft specializes in providing the following services:

Application Development

Maintenance & Support

IT – Consultancy

Products

Conversion and Migration

Web enabling of Legacy Applications.

Young Soft provides a complete suite of IT services in the business applications domain, specializing in multiple verticals including financial services, healthcare services, education and allied industries. Our consultants are thoroughbred professionals and therefore minimize project risks of customers. Successfully executed IT consultancy assignments in SAP/Oracle projects for leading firms in Singapore and Jakarta. Young Soft's success in satisfying its customer's stems from its commitment to a consistent methodology, effective project management techniques, proven automated tools, quality assurance and testing, and dedicated professionals. We follow rigorous quality management techniques, which along with our mature development processes ensure that a high quality is delivered in every phase of our software development and maintenance cycles. We have predefined processes for software development life cycle, quality assurance and documentation.

Young Soft has optimum hardware, software and network infrastructure to carry out its activities and the requisite capability to scale up its infrastructure to satisfy its business and customer needs. Young Soft has its overseas marketing and development offices in Singapore, Jakarta (Indonesia) and associate offices in London (UK).

SOFTWARE AND HARDWARE

SOFTWARE :

IDE   : Visual Studio 6.0 Win CE, Embedded Visual Studio

O/S   : WinNT/2000/Professional, Red Hat Linux 7.2

Databases   : MS SQL server 7.0, Oracle 8i

Tools   : MS Project, WinCVS

Web/App server   : IIS, Apache

HARDWARE :

NT server

Linux Server

DAT drive for backup

Intel Workstations, IBM Laptops and Compaq PDA's

Technical Infrastructure

Communication: 64kbps leased line and ISDN connection.

Redundant power supply, backed up by UPS and generators.

Audio conferencing facilities.

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HUMAN RESOURCE

At Young Soft, our software professionals come with varied educational background and skills. Most of them are qualified engineers with Computer Science or related background. We at Young Soft understand that every client has unique needs and different ways are required to fulfill them. We offer several business models for this very reason. Each of the models has been designed to offer maximum benefits to clients. Below are the varieties of business models that Young Soft offers to its customers to effectively fulfill their requirements, and eventually add value to the customer core business areas.

Young Soft provides its software consultants to carry out onsite services. These resources, as a part of the onsite project team would report to Project Manager responsible for the project. The onsite model can be a component of the offsite model, where in, Young Soft will send its personnel to the client's side for implementation, testing and support of various projects.

Young Soft could also carry entire programming work offshore and then undertake training, implementation and testing onsite at the customer site.

1.2 PROJECT OVERVIEW

The School Management System is a browser based intranet application. The system facilitates the users to access their need in a centralized manner.

There are totally seven modules namely

Ó   Admission management

Ó   Accounts management

Ó   Examination and test management

Ó   Student & staff detail

Ó   Inventory management

Ó   Library management

Ó   Transport & Hostel management

In which Accounts, Inventory, Library, are allotted for me.

ACCOUNTS MANAGEMENT :

- Track all income sources, tuition, fees, donations, grants, etc.
- Create categories of recurring expenses like salaries, maintenance, etc.
- Extensive selection of reports can be printed or viewed on the screen.

INVENTORY MANAGEMENT :

• Order is placed whenever the inventory level is reached.

• All inventory transactions can be recorded and monitored.

• Monitor stock additions, request and consumption.

• Inventory costs are posted to the Accounts Management module to calculate depreciation and cost of assets.

LIBRARY MANAGEMENT :

• Comprehensive administrative tool for librarians.

• Manage subscribers and the inventory of the library.

• Search by title, author, publisher, edition type and content, etc.

• Track books and other items sent for binding and record when they are received back.

• Purchase details, fines fees and expense are linked to the Accounts Management module

System Analysis

2.1 EXISTING SYSTEM

Currently the office transaction is alone computerized. The system works with the help of Visual Basic 6.0 and MS Access. We propose the new system in order to centralize all the process of the school and also for the security purpose in an efficient manner.

2.2 NEED FOR THE SYSTEM

Computerization has become an important part of modern administrative process.

Schools are large enterprises, they need to manage with information and data of hundreds rather thousands of people. This involves routine and systematic administrative process. This routine task incurs considerable efforts and time of teaching and non-teaching staffs. These enterprises don't have hierarchical level managers to manage and administer.

The Quality of work performed by a machine is usually uniform, neat and more reliable than when it is done manually. Employing computers in the field lowers operating cost. The efficiency and accuracy is also increased in employing computers.

The benefit of computerization is quick job completion. The updation and Deletion can also be performed quickly and accurately.

2.3 PROPOSED SYSTEM

The proposed system of school management helps to perform the tasks with minimum effort. All the required activities can be done easily without any strain. Consider a situation where a single management contains more than one different modes and mediums. At this stage it becomes difficult for the management to manually control all the activities that takes place in different medium at various levels. So this proposed system help to keep tack all the activities.

In this module all income sources, tuition, fees, donations, grants, etc will be tracked. Categories are created for recurring expenses like salaries, maintenance, damages etc. Tracking of operational & Capital expenses are done in this module. All the extensive reports are done such that it can be printed or viewed on the screen.

Comprehensive administrative tool for librarians. Manage subscribers and the inventory of the library. Link books to the subject taught. Create keywords for books, periodicals. Search by title, author, publisher, edition type and content, etc. Categorize different classes of library subscribers. Trace the status of any book and reserve books. Track lost books and over dues, including calculation of fines, etc. Track books and other items sent for binding and record when they are received back. All these facilities are available for journals, periodicals, CD-ROMS, etc. Purchase details, fines fees and expenses are linked to the Accounts Management module.

In this module there will be a inventory level for each & every product or thing. Order should be made whenever the inventory level is reached. All inventory transactions should be recorded and monitored in this module. Monitor stock additions, request and consumption. Inventory costs are posted to the Accounts Management module to calculate depreciation and cost of assets.

System Environment

3.1 COMPUTING ENVIRONMENT

HARDWARE :

Processor	:	Intel Pentium III & above
Ram	:	64 MB & above
Hard Disk	:	10 GB & above
Display	:	14 SVGA Color Monitor
Keyboard	:	Standard 104 keys

SOFTWARE :

Front End	:	Visual Basic
Back End	:	Oracle

3.2 TECHNOLOGIES – QUICK REFERENCE

The following are the important as well as main factors in choosing the specific technologies and environments for developing the software.

VISUAL BASIC :

Visual Basic has been chosen as it provides a GUI based environment for creating user-friendly forms. Visual Basic is an ideal programming language for developing sophisticated applications in Window platform. The 'Visual' part refers to the graphical user interface (GUI). Rather than writing numerous lines of code to describe the appearance and location of interface elements, you simply add rebuilt objects into place on screen. The 'Basic' part refers to the basic language. Visual Basic

Has evolved from the original BASIC language and now contains several hundred statements, functions and keywords, many of which relate directly to the windows GUI.

Beginners can create useful applications by learning a few keywords yet the power of the language allows professionals to accomplish anything that can accomplished using any other windows programming language. It makes use of GraphicalUser Interface (GUI) for creating robust and powerful applications. The GUI enables the users to interact with an application. This feature makes it easier to comprehend things in a quicker and easier way. In a GUI environment

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coding is similar to linear programming methods and it is highly interactive and user-friendly. One of the interesting features of Visual Basic is the Integrated Development Environment [IDE]. Another important feature of Visual Basic is that it has easy methods to allow users to control and access databases. Due to this property databases like MS Access, Oracle, etc. The front end can also be connected to the databases via ODBC, JDBC, etc.

SPECIAL FEATURES OF VISUAL BASIC 6.0 :

Visual Basic provides the quickest and easiest way to create application for Microsoft windows families like windows 3.11, Windows 95, Windows NT and for INTERNET through ACTIVEX controls. This programming language allows creating attractive and useful application that fully exploits the Graphical User Interface. This is a Front End Generator or Front Tool with the quickly create a database Front End Application for a wide variety of Desktop and CLIENT SERVER RDBMS.

COMPONENTS OF VISUAL ENVIORNMENT :

The components of VB environment are

1. VB Window
2. Project Window
3. Menu Bar
4. Toolbox
5. Properties Window
6. Form Window
7. Data Report Designer
8. Data Environment Designer

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FEATURES OF VISUAL BASIC :

* Compile a VB project to native for faster execution.

* Open multiple projects in the same instance of VB.

* ActiveX document boost the Visual Basic application to the intranet and intranet browser windows.

* Ability to do single, multiple, or Microsoft explorer style document interface application.

* The new model allows us to programmatically extend the development environment and control project, events, code visual elements.

* The application wizard is new and the setup wizard has been enhanced to enable creating a dependency file for a standard projects.

* Most control now support drag and from components specifically for employment of the web.

* The implements features allow your classes to support multiple interfaces.

* Command lines switches provide a way to control how VB executes.

* The recourses file allows you to collect all of the versions specify text and bitmaps for an application is one place.

* VB provides built-in templates for creating an about dialog box, option dialog box, or splash screen.

ORACLE :

ORACLE Corporation was the first company to offer a true relational DBMS commercially, and has continually led innovation in the field of RDBMS. The ORACLE Corporation strategy of offering an RDBMS that is portable, compatible and connectable results in a very powerful tool for users. You learn the basic concepts across various hardware and software platforms.

The collection of tools, utilities and application that constitute the ORACLERDBMS let you manipulate an ORACLE database. Many of these products are fourth generation language tools; they let you interactive screens to create application programs.

The ORACLE database was designed using the relational model and gives uses of many advantages, including the following

* A database structure that is easy to visualize and understand.
* The ability to create any number of temporary relationships between the tables.
* Freedom from concern about to query the database through the use of SQL.
* Tables are easy to visualize.
* Relational joins that provides temporary set of data from multiple tables in the model.

The ORACLE system uses the non-procedural structured query language (SQL) to communicate with its database kernel. In 1986, the American National Standard Institute (ANSI) made SQL the standard for all DBMS. SQL is a query language used with IBM's SQL / DS and

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DB2 database systems on mainframes. SQL is a powerful query language – so powerful, that all the application development tools that ORACLE provides are SQL based.

ORACLE provides the following advantages over the relational database.

* Direct SQL interface to the database through SQL*PLUS lets developers and user interact with the database and manipulate direct.

* The interactive forms developers SQL*PLUS lets our procedures prototype applications quickly. These prototypes can be used as the base units for the real application. Additionally, changes to these applications during development and maintenance can be accomplished in very little time.

* The transferability of data from the files and formatted into the table structure of ORACLE database, using the utility SQL*Loader, reduces problems in the data conversion to ORACLE databases.

ORACLE UTILITIES :

Some of the most important ORACLE products and utilities available for PCs are as described below.

SQL*PLUS   ***   This programming tool and query platform allows users to directly manipulate database information using SQL.

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SQL*FORMS *** This collection of programming is used for creating compiling and running interactive full-screen forms.

SQL***MENU *** This collection of programs is used for creating and running a standardized ORACLE menu system.

SQL***REPORTWRITER *** Oracle's new report generator is a full-screen interactive report generation system for creating, compiling and running reports.

System Design

4.1 INPUT DESIGN

Input design or form design consists of designing the screens for accepting the input. The user inputs are collected as screen entries. The screen has been designed in a way to provide GUI features to the user. The input screens are designed in a way as to control the amount of input required, avoid delay and keep processing simple.

The form layout is designed to be user friendly. Layout labels are made self-explanatory. Common sets of entries are grouped into a frame for easy identification. Drop down lists are provided in the case of item selection. The user can choose from the valid data from the list provided thus avoiding erroneous data. Command buttons are provided for all activities that take place through the form such as additions, deletions etc. Input data is validated in the screen entries itself. Appropriate error message and warnings are displayed for user's convenience.

4.2 OUTPUT DESIGN

Outputs from computer system are required primarily to communicate the result of processing to users. The outcome of data processing will be a set of information in a neat layout, which is used for analysis and decision-making. Output design involves the designing of the format of

processed data. The report should be in a simple format and should be able to convey the details clearly. Reports provide a hard copy of information, which has to be circulated throughout the organization.

The main reports designed for this system are,

ACCOUNTS MANAGEMENT:

This report generates the details of the fees structure, the income and the expense and also the status of the organization.

INVENTORY MANAGEMENT:

This report generates the details of the product it holds the details of the maintenance of the stock level. It produces the details of the purchase and the sales of the products.

LIBRARY MANAGEMENT:

This report generates the details of the return and the issue of the books. The issue of the book and the return of the book deal with the particular student and the late return is also handled.

4.3 DETAILED DESIGN

Detailed design of a system includes developing prototypes, user interfaces and Backend databases. For this phase, Data Flow diagram (DFD), Entity Relationship diagrams (ERD) and System Flow Chart (SFC) is used.

Date Flow Diagrams depict how data interact with a system. DFD's are extremely useful in modeling many aspects of business function because they systematically subdivide a task in to its basic parts, helping the Analyst understand the system, which they are trying to model.

A DFD models a system by using external entities from which data flows to a process which transforms the data and creates output data which goes to other processes on external of files. Data in files may also flow to processes as inputs.

The main merit of data flow diagram is that it can provide an overview of what data a system would process, what information of data are done, what files are used and where the results flow. The graphical representation of the system makes it a good communication tool between the user and an analyst, its difficult to represent the business process through verbal description alone. Here data flow diagram helps in illustrating the essential component of a process and the way they interact.
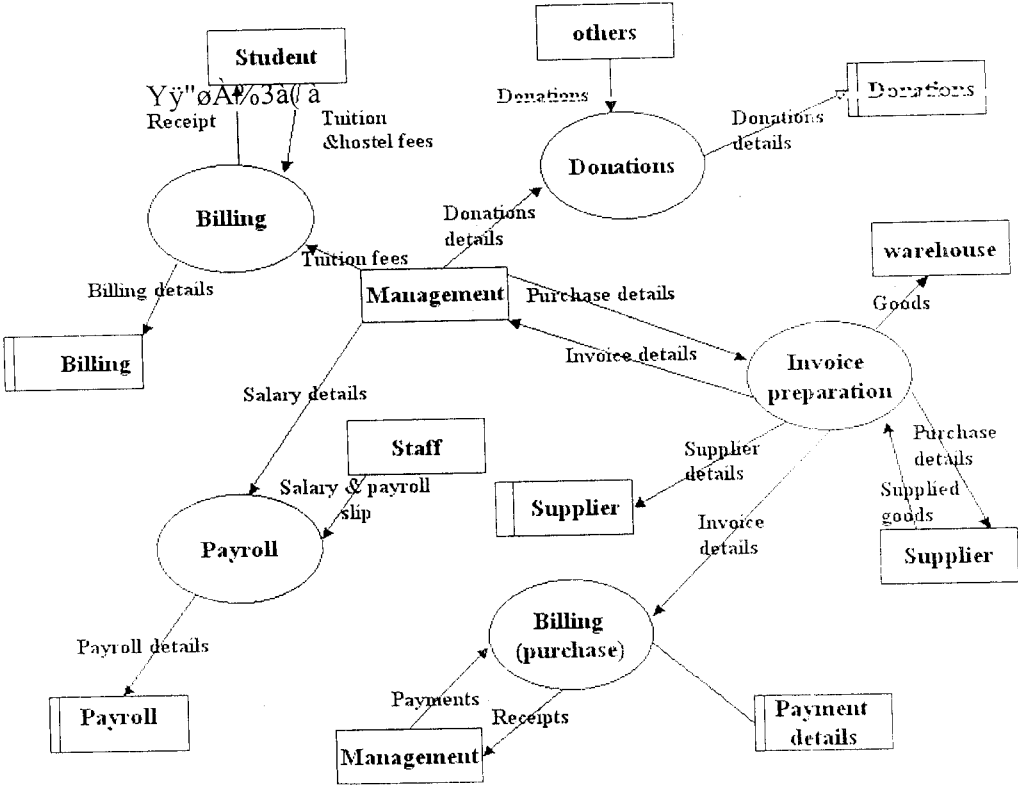
DFD Components

DFD's are constructed using four major components: (a) External entities (b) Data store (c) Processes and (d) Data flows.

External entities represent the sources of data that enter the system or the recipients of Data that leaves the system. Data store represent stores of data within the system. It may be a databases or individual files. Processes represent activities in which data is manipulated by being stored or retrieved or transformed in some way. Data flows represent the movement of data between other components, for example a report produced by a process and sent to an external entity.
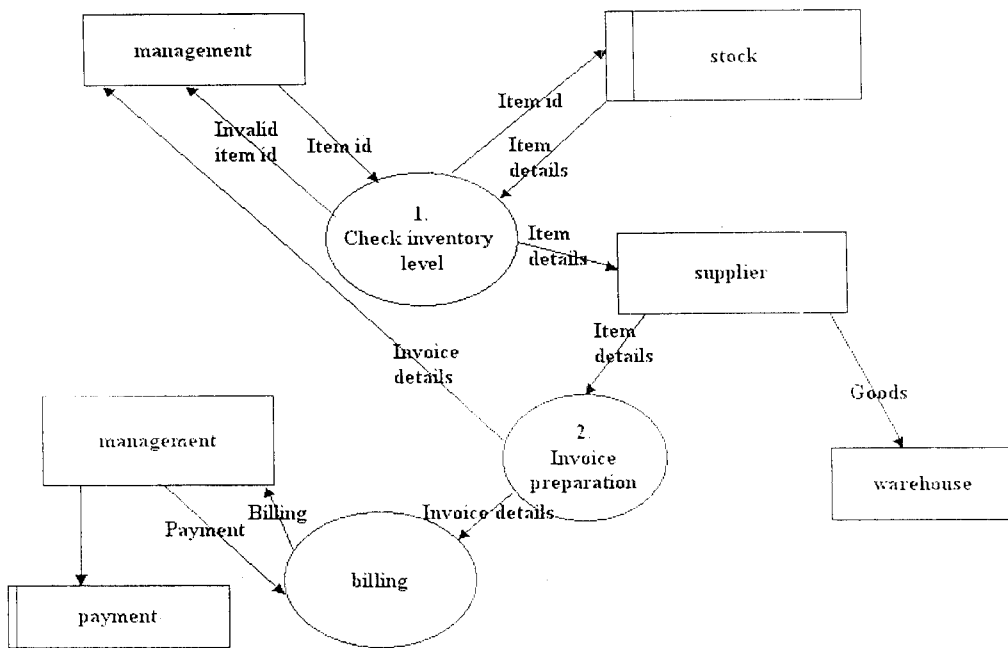
A circle is used to depict a process. Both input and output are data flows. An arrow represents the data flows. External entities are represented by rectangles. Entities supplying data are known as sources and those that consume data are called as sinks.

4.4 DATA FLOW DIAGRAMS

ACCOUNTING

INVENTORY

LIBRARY
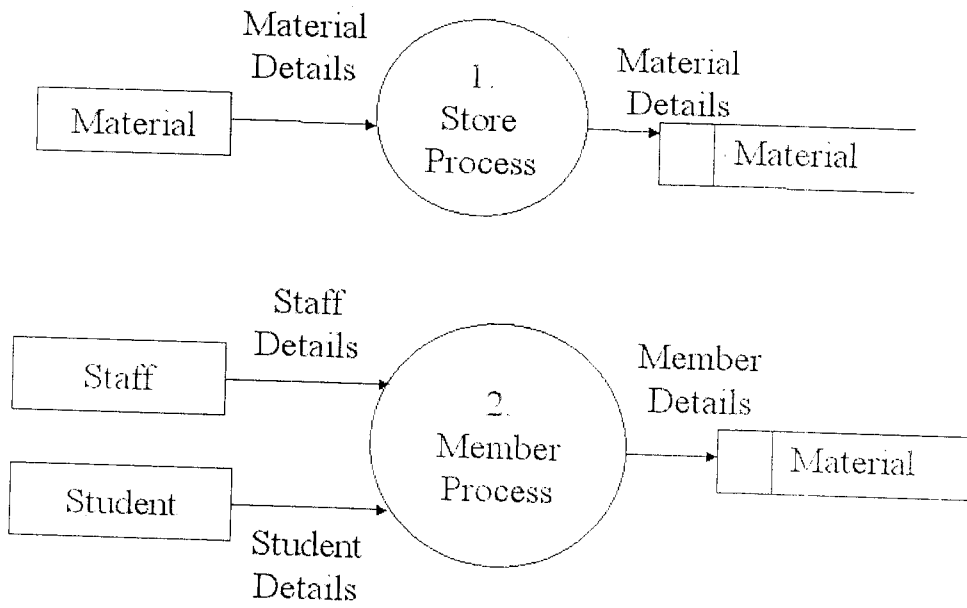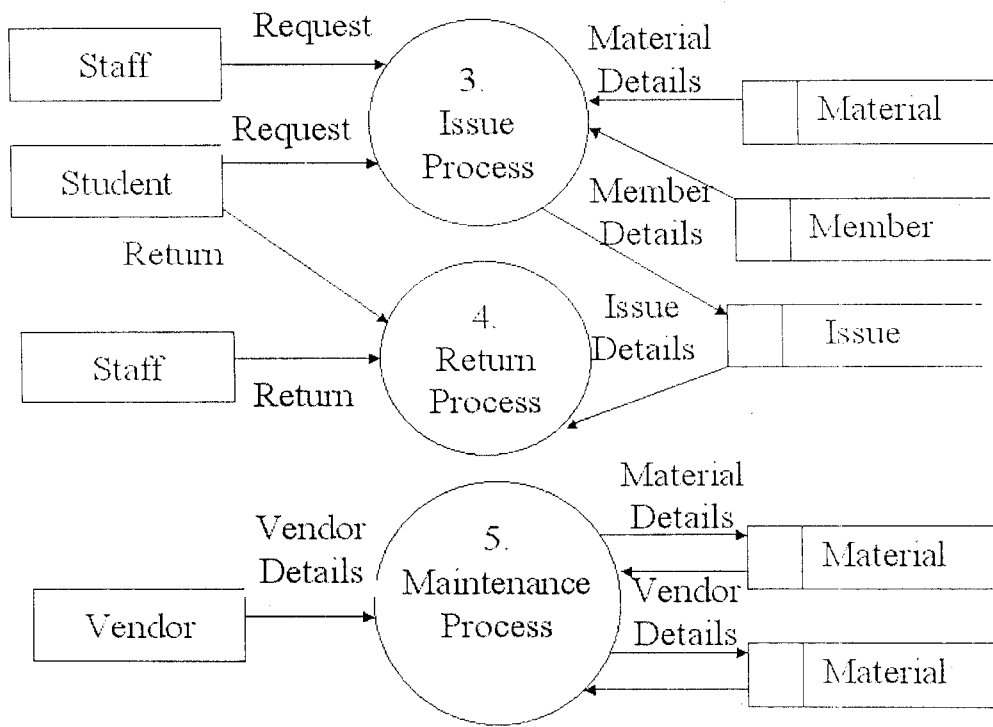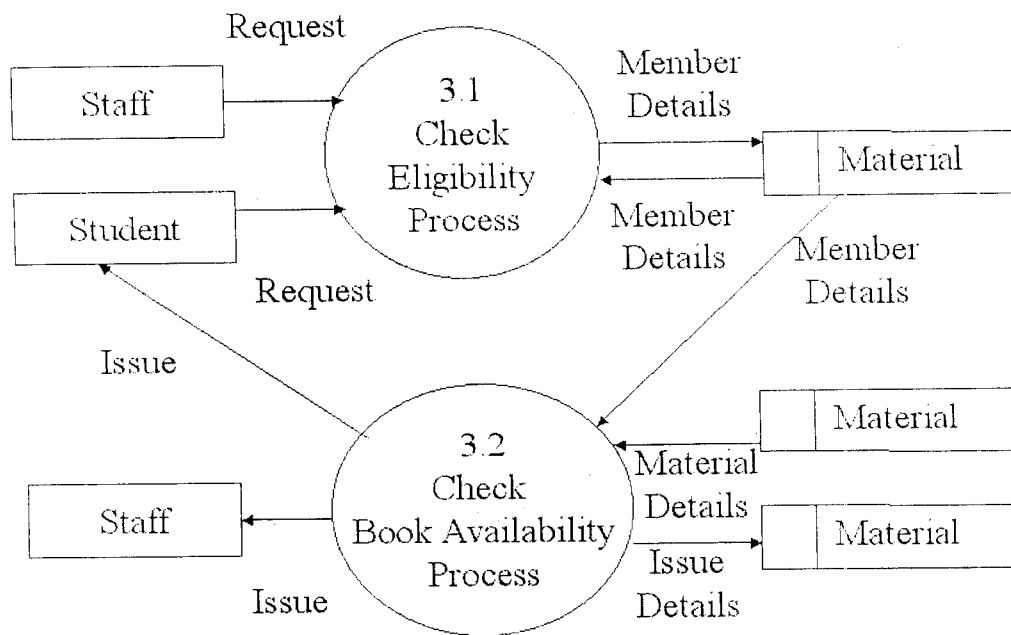
DATAFLOW DIAGRAM FOR
LIBRARY MANAGEMENT

Material
Details

| Material | → | 1.
Store
Process |

Material
Details

| | Material |

Staff
Details

| Staff | → | 2.
Member
Process |

Member
Details

| | Material |

| Student | →

Student
Details

4.5 TABLE DESIGNS

LIBRARY MANAGEMENT:

TABLE: book master

NAME	NULL?	TYPE	CONSTRIANTS
BookID	Not Null	Numeric(9)	
Book Name	Not Null	Varchar(70)	Foreign Key
Category	Not Null	Varchar(50)	
Status	Not Null	Varchar(30)	
Cost	Not Null	Numeric(8,2)	
Author Name	Not Null	Varchar(70)	
Publications	Not Null	Varchar(80)	

TABLE: book issue

NAME	NULL?	TYPE	CONSTRIANTS
Student Name	Not Null	Varchar(50)	
Book ID	Not Null	Numeric(9)	Foreign Key
Issue Date	Not Null	Datetime	
Return Date	Not Null	Datetime	

TABLE: book return

NAME	NULL?	TYPE	CONSTRIANTS
Student Name	Not Null	Varchar(50)	
BookID	Not Null	Numeric(9)	Foreign Key
Return Date	Not Null	Datetime	

INVENTORY MANAGEMENT:

NAME	NULL?	TYPE	CONSTRIANTS
ProductID	Not Null	Numeric(9)	Primary Key
Stock	Not Null	Numeric(9)	
Unit Price	Not Null	Numeric(8,2)	

ACCOUNT MANAGEMENT:

NAME	NULL?	TYPE	CONSTRIANTS
IncomeId	Not Null	Numeric(9)	PrimaryKey
StudentID	Not Null	Numeric(9)	Foreign Key
Tution	Not Null	Numeric(8,2)	
Fees	Not Null	Numeric(8,2)	
Grants	Not Null	Numeric(8,2)	

NAME	NULL?	TYPE	CONSTRIANTS
ExpenseID	Not Null	Numeric(9)	Primary Key
StaffID	Not Null	Numeric(9)	Foreign Key
Salary	Not Null	Numeric(8,2)	
Maintenanace	Not Null	Numeric(8,2)	
Damage	Not Null	Numeric(8,2)	

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Testing

5.1 TESTING CONCEPTS

Software is only one element of a large computer based system. Ultimately Software is incorporated with other system elements (ex New hardware) and a series of system integration and validation tests are conducted. System testing is actually a series of different tests whose primary purpose is to fully exercise the computers based system.

Testing presents an interesting anomaly for the software development. The testing phase creates a series of test cases that are intended to 'Demolish' the software that has been built. A good test case is one that has a high probability of finding an as yet undiscovered error. A successful test is one that uncovers an as yet undiscovered error.

Testing process brakes application down in to two main parts:

UNIT TESTING

In Unit Testing the modules of the system are tested as individual unit. Each unit has definite input and output parameters and often a definite single function.

SYSTEM TESTING

In System testing the system is tested as a whole; that's inter communication among the individual units and functions of the complete system are tested.

Testing for this system was done in 3 steps.

* Testing the function performance of each modular component.
* Testing the interface of software and its function with live data.
* Testing for user acceptance and to see if all user requirements have been met.

System Implementation

SYSTEM IMPLEMENTATION

This chapter gives a brief description of how the system is deployed in the actual environment. Since there is now any existing system for this application a separate care should be given to test that the end users have reached there needs. The system should also save memory by not allowing redundancy and it should help in easily querying.

6.1 SYSTEM IMPLEMENTATION

Before implementing the system, it's forced in to many server-testing phases. After the system clears all the tests, it's released for implementation. After the data has been initially set, the system is ready for use. The implementation type or the change over technique from the existing system is a step by process.

First a module in the part of the system is implemented and checked for suitability and the efficiency. If the end user related to the particular module is satisfied, the next step of implementation is processed with. That's modules related to the previous module are implemented.

The following processes were conducted in the implementation stage.

- Testing of developed modules with sample data.
- Correction of errors.
- Testing the system to meet user requirements.
- New files with actual data had been created.
- Changes were made according to user's suggestions.

6.2 USER TRAINING

Training is given to all the particular users from the client side. The training varies from user to user depending upon the information needed pertaining to the user. For example the application users need help only on ad-hoc queries and how to take suggestions based upon the reports, whereas data entry operators need only information's on how to key in suitable data.

Conclusion

CONCLUSION

All the three modules of the project works perfectly and is all set for implementation. This project has been very useful and educative. It has helped in understanding practical problems in real life situation. The study conducted has been very useful to the organization as well as to me. It has given completeness to the education received by us during the past three years of degree course.

The system has been developed for the conditions existing at present. The system being flexible can be further enhanced as per user's requirement. A good amount of user-friendly features have been incorporated in this system and it is possible for any user to exploit these features to get the maximum benefit.

The programming techniques used in the design of the system provide a scope for further expansion and implementation of any changes, which may occur in future. The various reports generated by the system have provided to be quite useful.

The system has been tested with sample data covering all possible options for each function. Its performance is satisfactory. The system is under implementation. The system is developed with the specifications and abiding by the existing rules and regulations of the company.

Future Enhancements

FUTURE ENHANCEMENTS

Though the system actually meets the current needs of the OXFORD MATRICULATION SCHOOL, it has got a wide room for further development.

The software has been developed with the present working condition and environments in mind. The current environment is a fast growing area and new features, new technologies and different work styles are expected. Hence this software has been developed with near future needs in mind and it has appropriate slots for any future modifications.

Further the complete system can be integrated with any other applications and made into huge applications for the organization.

References

✻ **VISUAL BASIC**

➤ Gary Cornell, "Visual Basic 6.0 from Ground Up", TataMcGrawHill Publishing Company Limited, 1998

➤ Jeffery. P. McManus, "Database Access with Visual Basic 6.0", Comdex publishing, 1998.

➤ Greg Perry, "Visual Basic 6.0 Night School", QUE Publishing House, Second Edition, 1997.

➤ Michael Smith, "Visual Basic 5.0 Super Bible Volume – 1", Prentice Hall of India Private Limited, Third Edition, 2001.

✻ **ORACLE**

➤ Oracle 8i User Manual Oracle Corporation Press, 2000

➤ Oracle 8i A Beginners Guide Abbey, Michael Oracle press, year 2002

➤ Oracle Development Guide, P.S.Deshpande.

➤ http://www.otn.oracle.com/