Term Paper

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1 Abstract

An organized and systematic office solution is essential for all colleges, universities and organizations. There are many departments of administration for the maintenance of college information and student databases in any institution. All these departments provide various records regarding students. Most of these track records need to maintain information about the students.To maintain all this data manually, we need so much of manpower and time. For this reason we have college database management system . It makes our task a lot easier by making it computerized and also increases accuracy. We can also get the backup easily within just few minutes! In this paper, we will see College Management System in detail through its ER Model and Relational Model.Lastly We will also see the database management in college libraries and Datat flow diagram in Library Management System.

2 Introduction

"College Database Management system" deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details and other resource related details too. It tracks all the details of a student from the day one to the end of his/her course which can be used for all reporting purpose, tracking of attendance, progress in the course, completed semesters years, coming semester year curriculum details, exam

details, project or any other assignment details, final exam result; and all these will be available for future references too. College Database Management System also gives a straightforward interface to support of understudy data, staff information,attendance,fee record. Different reports and Queries can be generated based on vast options related to students, batch, course, teacher / faculty, exams, semesters, certification and even for the entire college. So, Database Management system basically enhances efficiency and at the same time maintain information accurateness.

3 Body

Given below is the diagram, showing benefits and significance of Database Management System. And all these benefits are the reason that DBMS is being adopted everywhere, in every field 3.

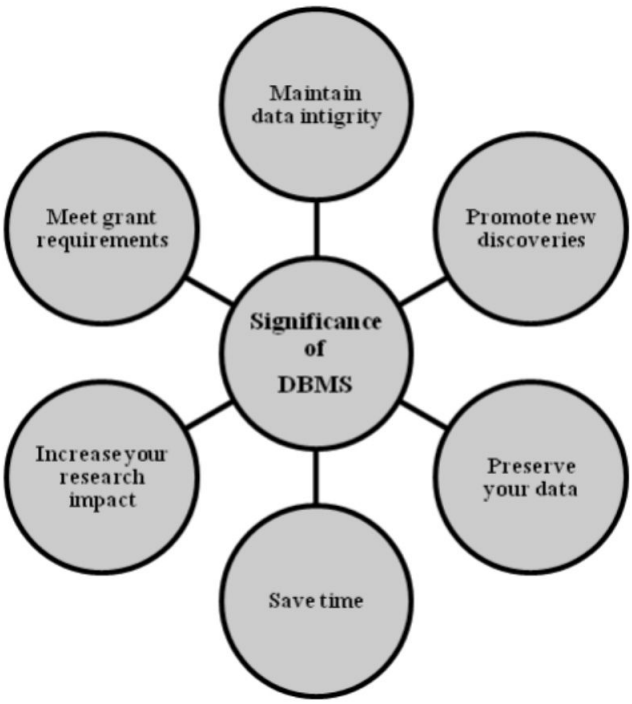

Figure 1: Significance of Database Management

The College Management System is very vast , but here I'm explaining it with some of the important entities through ER Model. After that we will also see the database tables details such as **Field Name, Descriptions, Data types, Character lengths** 3.

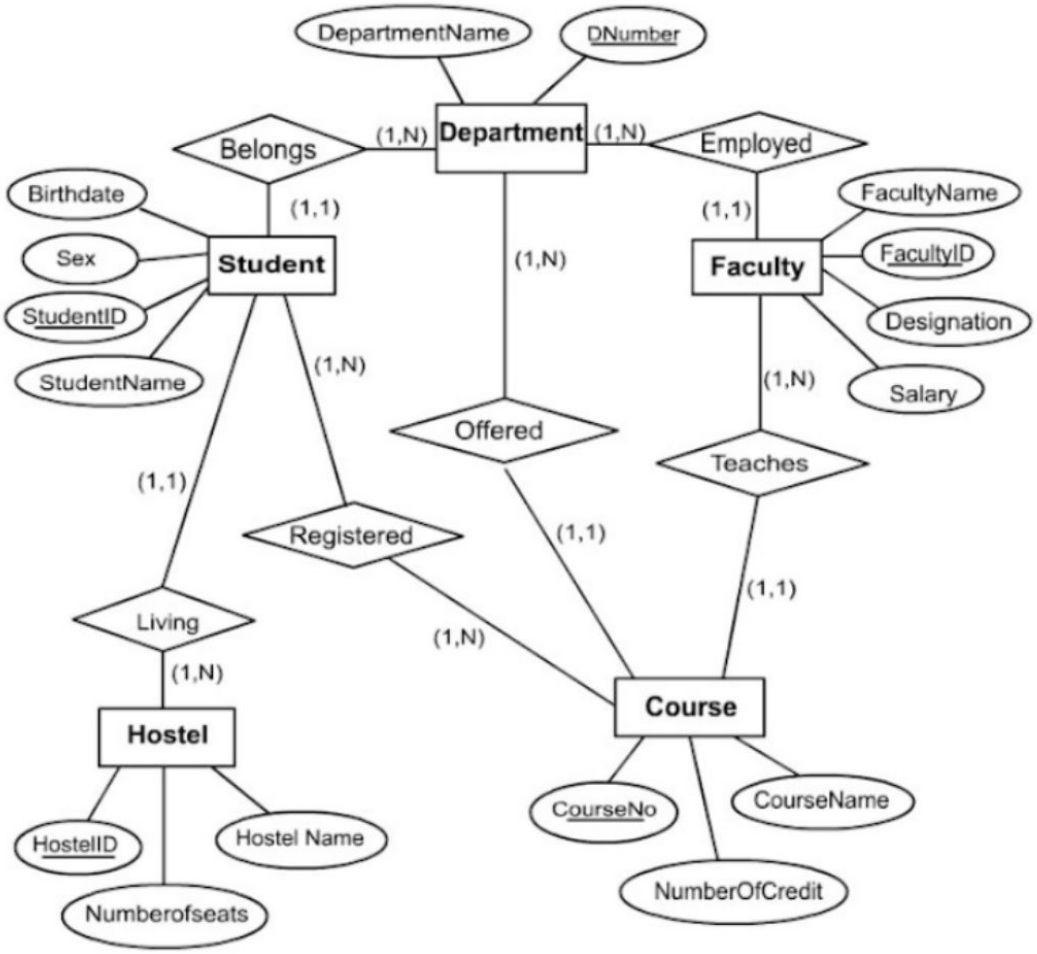

Figure 2: ER Diagram of College Management System

In the above ER Diagram, Student, Department, Faculty, Hostel and

Course are the 5 **Entities** which are represented by rectangle. Each of these entity have some **Attributes** for example: Student(entity) have four Attributes- BirthDate, sex, $student_id$, studentName and course(entity) has 3 Attributes- CourseNo, CourseName, NumberOfCredit and so on. Attributes in ER diagram are represented by oval. Another component of ER diagram is **Relationship** which is represented by Diamond shape. In above diagram, 'living' is the relationship among student and hostel, which means it shows the association among those two entities.Another thing we can see in this ER diagram is **Degree of Relationship** which represents the number of entity types that associate in a relationship.For example: We can see the relationship among two entities named- Student and Department, many students can belong two one department but , one student cannot belong to many departments.Let us now see these database tables in detail:

Student and Faculty Table: 3.

Field	Description	Type	Length
stud_id (PK)	Student ID	Int	11
birth_date	birth date	Int	11
stud_name	student name	Varchar	255
sex	sex	Varchar	255

Field	Description	Type	Length
faculty_id	faculty_id	Int	11
salary	salary	Int	11
faculty_name	faculty_name	Varchar	255
designation	designation	Varchar	255

Figure 3: Student and Faculty

Hostel, Department and Course table: 3.

Field	Description	Type	Length
host_id	hostel id	Int	11
host_name	hostel name	Varchar	255
no_seats	no. of seats	Int	11

Field	Description	Type	Length
dep_name	department name	Varchar	255
dep_no.	department number	Int	11

Field	Description	Type	Length
course_id	course id	Int	11
course_name	course name	Varchar	255
no_credit	no of credit	Int	11

Figure 4: department,course,hostel

Let us now write a Query for example: 3.

```
Write a query to list the course names
# of students in those courses --- for all courses
where --- there are no assigned faculty
output ordered --- first by # of students descending
then by course name ascending
*/

SELECT course.courseName, student.majorid AS '# of Students'
FROM student
JOIN course
ORDER BY course.courseName ASC, '# of Students' DESC;
```

Figure 5: Query

Data Flow Diagram of college management system-Figure 6 3.

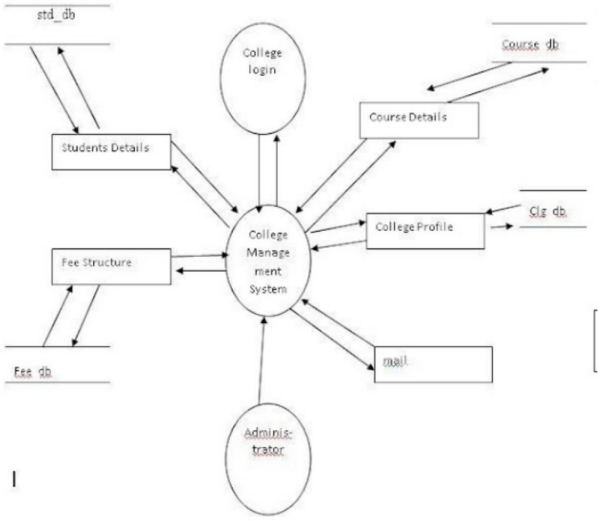

Figure 6: DFD college management sys

DBMS in College Libraries

Computers are being used for routine housekeeping activities of the library, which saves the time of the end users as well as library professionals, avoids repetition of work and makes the library services smooth and effective.

Library Management System DFD

The Library Management System DFD is one of the methods used for library system development. It represents the system's major processes and alternatives that generate the flow of data within the system. The data included in the Data Flow Diagram was labeled properly to guide the developers on the structure of the Library Management System.The importance of DFD for Library Management System is that it aids the audience in understanding what is happening in the system. This is done by helping them

visualize the system's data management at various levels of elaboration.

The library management system **data flow diagram** involves major levels to elaborate the flow of data within the project. These levels has their part in expounding the details of the system's data flow structure. This structure will be the guide of developers in designing the system's data handling.The data flow diagram describes the flow of data in Library Management System. It denotes the steps involved in transferring data from the input to file storage and report output in library system.The Data Flow Diagram Example of Library Management System is given with explanation. This example Data Flow Diagram are elaborated in three Levels which were the DFD Level 0, 1, and 2.
The Level 0 DFD Diagram for Library Management System is also known as the Context Diagram. It is composed of the main process, users and data flows. The concept is shown in a single process visualization.DFD Level 0 shows the entities that interact with the system. It defines the border between the system and its environment. This context diagram depicts Library Management Project at a high level.
Data Flow Diagram Level 0 3.

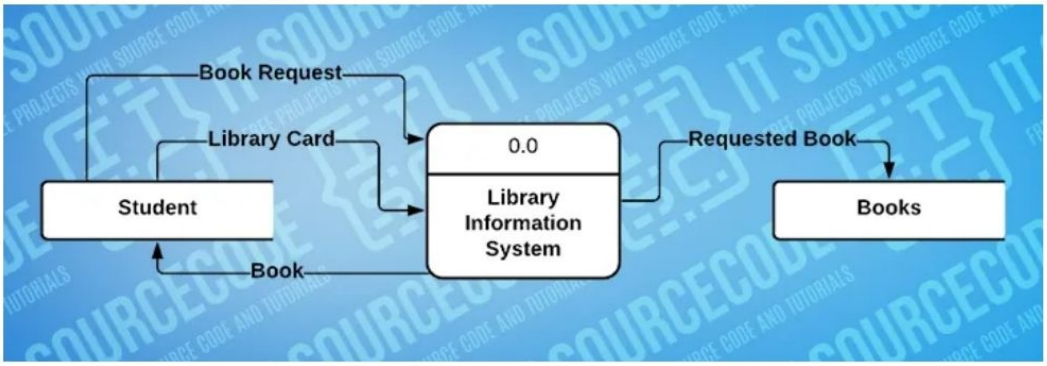

Figure 7: level 0

The Level 1 DFD Diagram for Library Management System is considered as the detonated view of context diagram. Its function is to deepen the concept derive from the DFD Level 0. It shows the wider details of Library DFD Level 0. This is to clarify the paths (flow) of data and its transformation from being an input to an output. The designed diagram portrays two different scenario which is the Book Delivery and the topic search.The flow of data starts from the student giving the borrowing request and his/her information. The system then caters the information and process the request. By that, the processes generates the data flow and transformation until it reaches the desired output.We can also see the data store used or the database. The database is used as the storage of the data processed and given by the users and then it also serves as the source of outputs.

Data Flow Diagram Level 1 3.

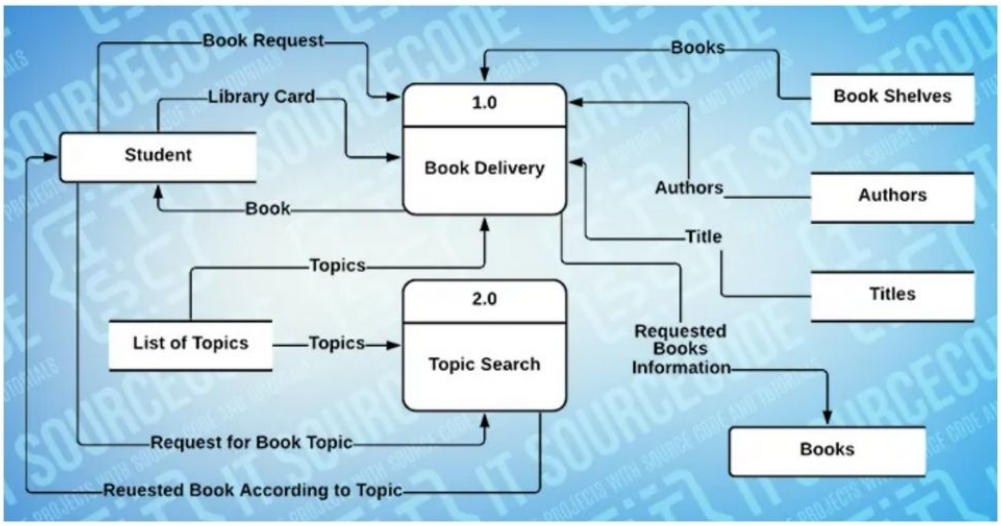

Figure 8: level 1

The Level 2 DFD for Library Management System is also called as the highest abstraction of data flow diagram. This level also broadens the idea from the DFD level 1. It includes the sub-processes from level 1 as well as the data that flows.This diagram has elaborated the sub-processes derives from "topic search" process. The sub-processes were get book, search book position, and update. These processes were invoked by the book borrower

and then catered by the system.The processes there were all managed by the system without the librarian attending the transaction. But then the librarian can still monitor all the transaction made by the borrower.

Data Flow Diagram Level 2 3.

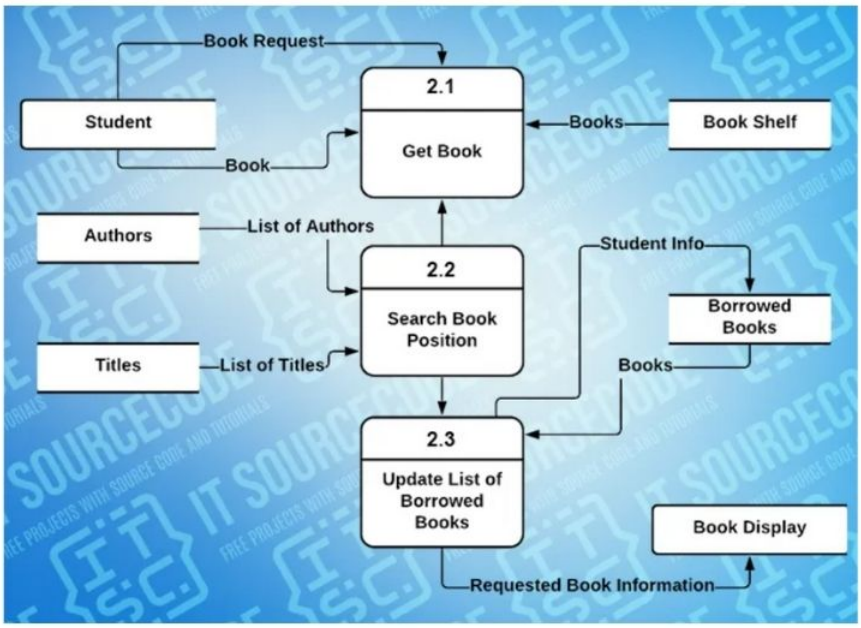

Figure 9: level 2