REPORT

on

COLLEGE MANAGEMENT SYSTEM

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1. Problem Statement:

The Education System is the backbone of the any nation and at its heart lies an organised approach to systematically allocate and manage data, communications, and scheduling of classes and various academic and non–academic events and given the significance of modern-day education today, the percentage of lower tier jobs are decreasing and the percentage of skilled workers is increasing. As a by-product of this fact admissions are increasing day by day, there by establishment of new colleges are also steadily increasing.

But the actual challenge is starting from now since many colleges are maintaining student information in records.

This existing system which used in most colleges is a traditional and almost entirely manual process.

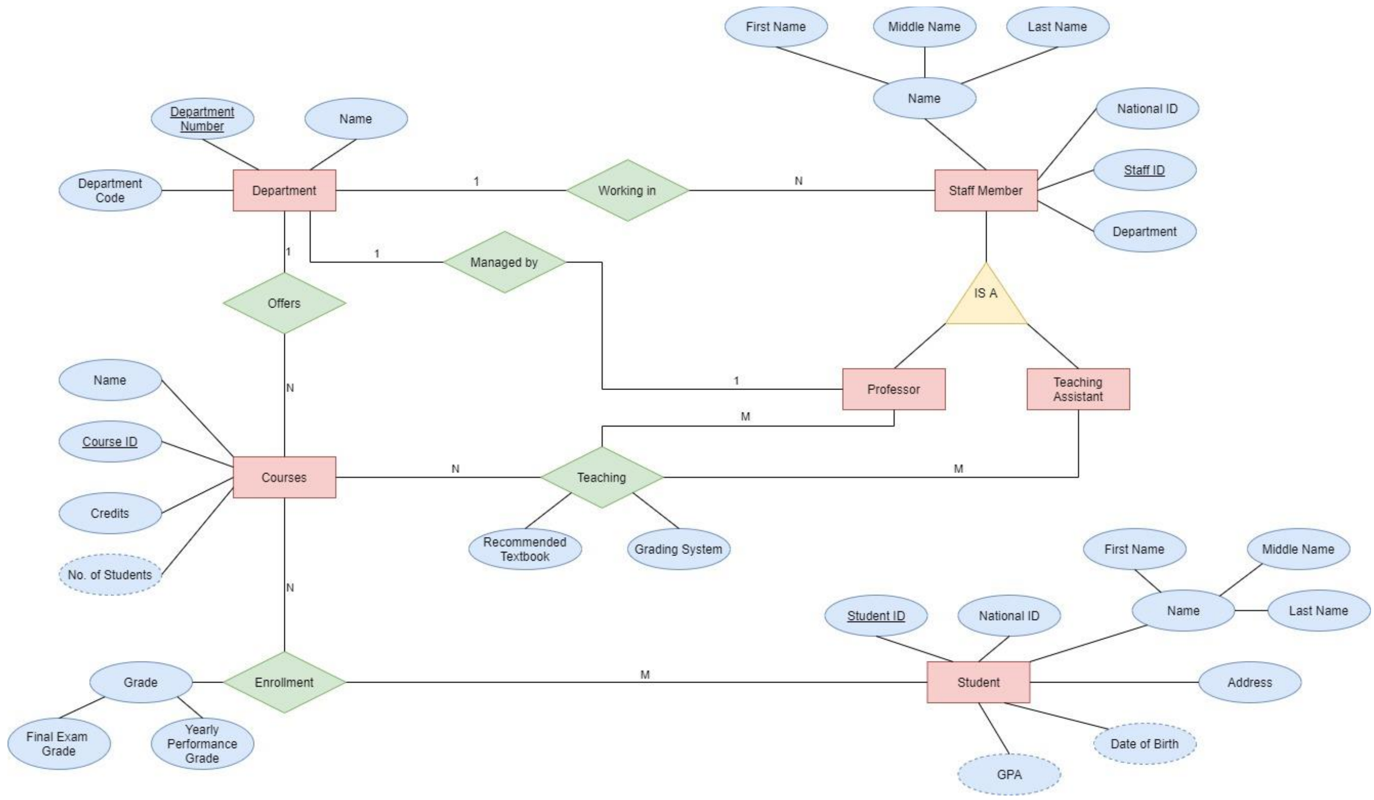
Since maintaining the records manually is prone to human errors it requires a lot of man power and is also a heavily time-consuming process.

Through this project, titled “COLLEGE MANAGEMENT SYSTEM”, we attempt to model a typical medium to large sized institute of higher education and provide it with all of its basic requirements.

The core functionalities of our application include a user-friendly frontend via Microsoft Access forms that allows users to interact with the backend without prior knowledge of DBMS

This frontend is complemented by a highly scalable and efficient backend solution in Microsoft Access and a database of relations normalized up to their corresponding third normal om par with industry standards.

2. ER DIAGRAM



3. ER MODEL TO RELATIONAL SCHEMA MAPPING

STAFF_MEMBER:

STAFF_ID (PK)	FNAME	MNAME	LNAME	NATIONAL_ID	DEPARTMENT_ NUMBER (FK)

STUDENT:

STUDENT_ID (PK)	NATIONAL_ID	FNAME	MNAME	LNAME	ADDRESS

DEPARTMENT:

DEPARTMENT_NUMBER (PK)	DEPARTMENT_CODE	NAME	STAFF_ID (FK) (FOR MANAGER)

COURSE:

COURSE_ID (PK)	NAME	CREDITS	DEPARTMENT_NUMBER (FK)

PROFESSOR:

STAFF_ID (PK)(FK)

TEACHING_ASSISTANT:

STAFF_ID (PK)(FK)

ENROLLMENT:

COURSE_ID (FK)	STUDENT_ID (FK)	YEARLY_PERFORMANCE _GRADE	FINAL_EXAM_GRADE

*primary key of this table is the combination of the first 2 cells

TEACHING:

STAFF_ID (FK) [FROM PROFESSOR RELATION]	STAFF_ID (FK) [FROM TEACHING ASSISTANT RELATION]	COURSE_ID (FK)	GRADING_SYSTEM	RECOMMENDED_ MATERIAL

*primary key of this table is the combination of the first 3 cells

STEP 1: MAPPING THE STRONG ENTITIES

RULES:

- For each regular (strong) entity type E in the ER schema, create a relation R that includes all the simple attributes of E while including only the simple component attributes of a composite attribute if any.
- Choose one of the key attributes of E as the primary key for R.
- The foreign key and relationship attributes, if any, are not included in this step.

We create the relations DEPARTMENT, COURSE, STAFF MEMBER and STUDENT in the relational schema to correspond to the regular entity types of DEPARTMENT, COURSES, STAFF MEMBER and STUDENT in the ER diagram.

STEP 2: MAPPING OF BINARY 1:1 RELATIONSHIP TYPES

RULES:

- For each binary 1:1 relationship type R in the ER schema, identify the relations S and T that correspond to the entity types participating in R.
- Choose one of the relations—S, and include as a foreign key in S the primary key of T. Choose an entity type with total participation in R for the role of S.

We map the 1:1 relationship type MANAGEMENT from the ER DIAGRAM by choosing the participating entity type DEPARTMENT to serve in the role of S because its participation in the relationship is total (every department has a manager). We include the primary key of the PROFESSOR relation as foreign key in the DEPARTMENT relation.

STEP 3: MAPPING OF BINARY 1: N RELATIONSHIP TYPES

RULES:

- For each regular binary 1: N relationship type R, identify the relation S that represents the participating entity type at the N-side of the relationship type.
- Include as foreign key in S the primary key of the relation T that represents the other entity type participating in R.

We map the 1: N relationship types WORKING and OFFERS from the ER diagram. For WORKING relationship, we include the primary key Department number of the DEPARTMENT relation as foreign key in the STAFF MEMBER relation. For OFFERS we include the primary key of the DEPARTMENT relation as foreign key in the COURSE relation.

STEP 4: MAPPING OF M: N RELATIONSHIP TYPES

RULES:

- For each binary M: N relationship type R, create a new relation S to represent R. Include as foreign key attributes in S the primary keys of the relations that represent the participating entity types; their combination will form the primary key of S.
- For each of the new relations created above, the primary key of them is the combination of the foreign key attributes.

For the M: N relationship of enrolment we include the primary keys of student and courses as foreign keys in enrolment.

For the ternary M: N relationship of teaching we create a relation TEACHING and include the primary keys of professor, teaching assistant and course as the foreign keys of Teaching. We also include the simple attributes of teaching relationship in the teaching relation.

STEP 5: MAPPING OF ISA HIERARCHY

RULES:

- Create a relation for each entity set in the hierarchy
- The attributes of the relation for a non-root entity set E are the attributes forming the key (obtained from the root) and any attributes of E itself.

For the ISA relationship in the ER diagram, we create relations STAFF MEMBER, PROFESSOR and TEACHING ASSISTANT in the relational schema where the latter two relations have the key attribute of STAFF MEMBER (root entity) as their only attribute.

This approach of mapping the ISA hierarchy into relational schema does not add NULL values into the tuples (Flatten approach adds NULLs to the tuples).

4. Normalization

Normalization is a database design technique that reduces data redundancy and eliminates undesirable characteristics like Insertion, Update and Deletion Anomalies.

Normalization rules divides larger tables into smaller tables and links them using relationships. The purpose of Normalization in SQL is to eliminate redundant (repetitive) data and ensure data is stored logically.

1NF

If a relation contains a composite or multi-valued attribute, it violates first normal form, or a relation is in first normal form if it does not contain any composite or multi-valued attribute. A relation is in first normal form if every attribute in that relation is single valued attribute.

A table is in 1 NF when:

1. There are only Single Valued Attributes.
2. Attribute Domain does not change.
3. There is a Unique name for every Attribute/Column.
4. The order in which data is stored, does not matter.

For example, if we take the Course table, it is clear that

- All the attributes are single valued
- Attribute domain is same throughout
- All columns have unique name
- The order in which data is stored has no effect on the database.

2NF

Second Normal Form (2NF) is based on the concept of full functional dependency. Second Normal Form applies to relations with composite keys, that is, relations with a primary key composed of two or more attributes. A relation with a single-attribute primary key is automatically in at least 2NF.

A table is in 2NF when:

1. It should be in the First Normal form.
2. And, it should not have Partial Dependency.

For example, if we take the Department table, we see that

- The table is in 1NF.
- All the non-primary-key attributes are fully functionally dependent on the primary key.

3NF

Although Second Normal Form relations have less redundancy than those in 1NF, they may still suffer from update anomalies. If we update only one tuple and not the other, the database would be in an inconsistent state. This update anomaly is caused by a transitive dependency. We need to remove such dependencies by progressing to Third Normal Form.

A table is in 3NF when:

1. It is in the Second Normal form.
2. It doesn't have Transitive Dependency.

For example, in the Student Table, it is clear that

- It is in 2NF
- There are no transitive dependencies between the attributes.

5. TABLES

DEPARTMENT TABLE

Department_	Department_number	Name	Staff_ID(manager)
CS	1	COMPUTER SCIENCE	2CS
IT	2	INFORMATION TECHNOLOGY	1IT
ECE	3	ELECTRONICS AND COMMUNICATION	2EC
EEE	4	ELECTRONICS AND ELECTRICAL	3EE
ME	5	MECHANICAL	1ME

This table holds data related to all the Departments of the college. Every department tuple has a unique **Department number** which acts as the primary key of the table.

The department is managed by a staff member whose details are referenced through the staff id attribute (foreign key).

COURSES TABLE

Course_ID	Name	Credits	Department_
CS251	Database Systems	4	1
CS254	Database Systems Lab	2	1
CS255	Operating Systems Lab	2	1
CS300	Operating Systems	4	1
EC341	Computer Arithmetic	4	3
EC342	Embedded System Design	4	3
EC344	Analog Integrated Circuits	4	3
EE359	Energy Auditing	4	4
EE360	Microprocessors	4	4
EE361	Power System Communications	4	4
EE362	Operation and control of Power Systems	4	4
IT110	Digital System Design	4	2
IT150	Object Oriented Programming	4	2
IT200	Computer Communication and Networking	4	2
IT202	Data Structures and Algorithms-I	3	2
ME201	Basic Engineering Thermodynamics	4	5
ME202	Fluid Mechanics and Machinery	4	5
ME203	Mechanics of Machinery	4	5
ME204	Basic Manufacturing Processes	4	5
ME251	Applied Thermodynamics	3	5
ME252	Analysis and Design of Machine Components	4	5
ME253	Computer Aided Engineering	3	5

This table stores information regarding each course that the above-mentioned departments provide. Each course has a unique **Course ID** which is the primary key of this table.

STAFF MEMBERS TABLE

Details of all the staff members who are either Professors or Teaching assistants are stored in this table with each entry having a unique **Staff id** which is the primary key of the table.

When the ISA relation between Staff members, TA and professor is converted to the relational model, the latter two tables still have the same attributes as staff member but need to distinguished from each other due to the roles they have in the remaining tables.

Hence the tables, Professor and Teaching assistant, have only one attribute which is the foreign key that references the staff member table for complete details of each of them.

Staff_ID	national_id	fname	lname	mname	Department_number
4CS	123000000619	Sukumesh	Kumar		1
9CS	123000000561	Atharv	Narayan		1
2CS	123000000611	Rishikesh	Sharma		1
6IT	123000000591	Swarna	Ganguly		2
1IT	123000000529	Shyam	Chand	Kaushal	2
5IT	123000000401	Suraj	Nigam		2
9IT	123000000153	Arjun	Bhorkar	Ram	2
2EC	123000000369	Shreya	Soman		3
5EC	123000000625	Rajendra	Bhat	Naveen	3
7EC	123000000751	Jai	Mukhi		3
6EE	123000000824	Chandan	Khatri		4
3EE	123000000493	Riya	Chaudry		4
2EE	123000000409	Tejas	Dhaliwal	Singh	4
8ME	123000000109	Vipul	Ghosh		5
1ME	123000000740	Kailash	Sunder	Pradeep	5
3ME	123000000191	Lal	Arora	Madhu	5

PROFESSOR TABLE

TEACHING ASSISTANT TABLE

Staff_ID
1IT
1ME
2CS
2EC
3EE
5EC
6EE
6IT
8ME
9CS

Staff_ID
1IT
1ME
2CS
2EC
3EE
5EC
6EE
6IT
8ME
9CS

STUDENTTABLE

Details of all the registered students are stored in the Student table. **Student id** is the primary key of the table. Apart from student id, national id is also unique for different tuples of the table.

Student_ID	national_ID	fname	lname	mname	address
191CS052	123000000219	Kiran	Bhagat	Chetan	51/6, Chetan House, D B Gupta Road, Karol Bagh, New Delhi, 110005
191CS101	123000000100	Rakesh	Singh	Dilip	125 /, Shiv Sagar Indl Estate, Babasaheb Kotakar Road, Goregaon , Mumbai, Maharashtra, 400063
191CS111	123000000254	Rohan	Raghavan		318, Mahavir Ind Estate, M Caves Road, Chakala, Andheri(e)
191CS123	123000000654	Kabir	Dubey		67,tankrdctptblr-53, Chickpet
191CS190	123000000900	Himanshu	Barve	Prasad	Sitladevi Temple Road, Near Union Bank, Mahim, Mumbai, Maharashtra 400016
191CS191	123000000901	Bhupesh	Kumar	Raut	1 A, Ladha Bhai Mansion, Queens Road, Opera House, Mumbai, Maharashtra
191CS836	123000000174	Asvathama	Ponnada		18-a, 4th Flr, Natraj Studio, Andheri-kurla Road, Pereira Sadan, Andheri(e), Mumbai, Maharashtra
191CS958	123000000570	Avantas	Ghosal		384, Veer Savarkar Marg, Prabhadevi, Mumbai, Maharashtra
191EC069	123000000250	Rithvik	Shikare		83, Valipalayam, Coimbatore, Tamil Nadu, 641601
191EC127	123000000321	Manu	Mehta		63, 24/1, S.c.b Building, Agiary Lane, Chira Bazar, Mumbai, Maharashtra, 400002
191EC131	123000000521	Pratik	Sahni		B 40 Sector 63
191EC190	123000000214	Vasudha	Modi		288, 1f,r15 Engg Bldg, 288 S B S Road, Fort
191EC192	123000000902	Prasant	Kumar	Jain	295, 295, 4th Cross,2nd Main Road, Prakashnagar, Banglore, Karnataka
191EC193	123000000903	Ajit	Snehal	Ulman	202, A Wing Rahul Mittal Indl Estate, 3 Sir M V Rd, J.b.nagar, Mumbai, Maharashtra
191EC217	123000000362	Alagesan	Subramanya		17, Bldg No 2, Rajashri Indl Complex, Ghodbunder Road, Chitalsar, Manpada, Thane (w), Mumbai, Ma
191EC942	123000000994	Advitiya	Sujeet		55, Gr Floor, Nagdevi Cr Lane, Masjid Bunder(w), Mumbai, Maharashtra
191EE101	123000000201	Akash	Kibe		Shop-3, Crystle Blue Bldg, 16th Road, Khar (west)
191EE105	123000000699	Subash	Bhat	Tanveer	1, Humayun Palace, New Market, Kolkata, West Bengal, 700087
191EE110	123000000412	Yash	Doshi	Kumar	Khuraiya Estate, 52 C S T Road Kalina, Bhnd Kailash Prabhat Building, Vidya Nagar, Mumbai, Maharas
191EE194	123000000904	Arshita	Pandey	Kumar	451, Panchratna Bldg, M Parmanand Marg, Opera House, Mumbai, Maharashtra
191EE195	123000000905	Shiv	Prakash	Yadav	Beside Womens College, Koti, Hyderabad, Andhra Pradesh
191EE210	123000000289	Nishant	Bakshi		105, Sir Thyagaraya Road, T Nagar, Pondy Bazaar
191EE330	123000000154	Parvani	Mahadeo	Kumar	165, Rasappachettyst, Park Town, Chennai, Tamil Nadu
191EE534	123000000544	Dharmadhrt	Sundharara		Shop No 4, Satyam Apt, Next To Avenue Hotel thakur Complex, Kandivli(e), Mumbai, Maharashtra

TEACHING TABLE

This table gives details of how a course is taught by defining the professor in charge of the course, the teaching assistant and the course id of the course. Other attributes provide more details of the course. The primary key of this table is the **combination of the professor staff id, teaching assistant staff id and the course id.**

Staff_ID_Prc	Staff_ID_TA	Course_ID	grading_syst	recommended_textbook
1IT	9IT	IT150	relative	Learning Object-Oriented Programming
1IT	9IT	IT202	relative	Introduction to Algorithms
1ME	3ME	ME202	relative	A Textbook of Fluid Mechanics and Hydraulic Machines
1ME	3ME	ME204	relative	Introduction to Basic Manufacturing Process & Workshop Technology
1ME	3ME	ME251	relative	A TEXTBOOK OF ENGINEERING THERMODYNAMICS
2CS	4CS	CS254	relative	Fundamentals of Database System | Seventh Edition
2CS	4CS	CS255	relative	OPERATING SYSTEM CONCEPTS 9ED
2EC	7EC	EC341	relative	Computer Arithmetic: Algorithms and Hardware Designs
2EC	7EC	EC344	relative	Analysis and Design of Analog Integrated Circuits, 5th Edition
3EE	2EE	EE359	relative	Handbook of Energy Audit
3EE	2EE	EE360	relative	Textbook of Microprocessors and Mic
5EC	7EC	EC342	satisfactory	Embedded System Design
6EE	2EE	EE361	relative	Communications for Electric Power System
6EE	2EE	EE362	absolute	Communications for Electric Power System
6IT	5IT	IT110	relative	Digital System Design
6IT	5IT	IT200	absolute	DATA AND COMPUTER NETWORK COMMUNICATION
8ME	3ME	ME201	satisfactory	A TEXTBOOK OF ENGINEERING THERMODYNAMICS
8ME	3ME	ME203	relative	Mechanics of Machinery
8ME	3ME	ME252	absolute	Mechanical Design of Machine Components
8ME	3ME	ME253	relative	Computer Aided Engineering and Design by Jimmy Browne, New Age Internationa
9CS	4CS	CS251	relative	Fundamentals of Database System | Seventh Edition
9CS	4CS	CS300	absolute	OPERATING SYSTEM CONCEPTS 9ED

ENROLLMENT TABLE

This table keeps track of the courses that a student has registered for. The student id and the course id are used for this purpose. The primary key is the **combination of Course Id and the student ID.**

Course_ID	Student_ID	yearly_perfo	final_exam_grad
CS251	191CS052	0	0
CS251	191CS101	0	0
CS251	191CS111	0	0
CS251	191CS123	0	0
CS251	191CS190	0	0
CS251	191CS191	0	0
CS251	191CS836	0	0
CS251	191CS958	0	0
CS254	191CS052	0	0
CS254	191CS101	0	0
CS254	191CS111	0	0
CS254	191CS123	0	0
CS254	191CS190	0	0
CS254	191CS191	0	0
CS254	191CS836	0	0
CS254	191CS958	0	0
CS255	191CS052	0	0
CS255	191CS101	0	0
CS255	191CS111	0	0
CS255	191CS123	0	0
CS255	191CS190	0	0
CS255	191CS191	0	0
CS255	191CS836	0	0
CS255	191CS958	0	0

6.FRONTEND

For the frontend and backend part, we have used Microsoft Access 2016. It has various features like forms, reports, macros, etc. to enhance the frontend part. So, for our project, we have used macros and forms to design the frontend part. They are extremely easy to edit and read the data compared to the tables. On opening the database there is a welcome form that gives a glimpse of the rest of the forms. A screenshot of the welcome form is attached below.

As you can see in the above picture, there are three buttons on this form that corresponds to their respective forms. If you click on any one of them, it will take you to that respective form. We made a total of six forms for our database. The rest of the forms are attached below.

Staff_Member

Staff Members

Staff_ID	National_ID	First Name	Last Name	Middle Name	Department_number
4CS	123000000619	Sukumesh	Kumar		1
9CS	123000000561	Atharv	Narayan		1
2CS	123000000611	Rishikesh	Sharma		1
6IT	123000000591	Swarna	Ganguly		2
1IT	123000000529	Shyam	Chand	Kaushal	2
5IT	123000000401	Suraj	Nigam		2
9IT	123000000153	Arjun	Bhorkar	Ram	2
2EC	123000000369	Shreya	Soman		3
5EC	123000000625	Rajendra	Bhat	Naveen	3
7EC	123000000751	Jai	Mukhi		3
6EE	123000000824	Chandan	Khatri		4
3EE	123000000493	Riya	Chaudry		4
2EE	123000000409	Tejas	Dhaliwal	Singh	4
8ME	123000000109	Vipul	Ghosh		5
1ME	123000000740	Kailash	Sunder	Pradeep	5

The one above is the staff member’s form; it contains all the information of the staff members.

Courses

Courses

Course_ID	Name	Credits	Department_number
CS251	Database Systems	4	1
CS254	Database Systems Lab	2	1
CS255	Operating Systems Lab	2	1
CS300	Operating Systems	4	1
EC341	Computer Arithmetic	4	3
EC342	Embedded System Design	4	3
EC344	Analog Integrated Circuits	4	3
EE359	Energy Auditing	4	4
EE360	Microprocessors	4	4
EE361	Power System Communications	4	4
EE362	Operation and control of Power Systems	4	4
IT110	Digital System Design	4	2
IT150	Object Oriented Programming	4	2
IT200	Computer Communication and Networking	4	2
IT202	Data Structures and Algorithms-I	3	2
ME201	Basic Engineering Thermodynamics	4	5
ME202	Fluid Mechanics and Machinery	4	5
ME203	Mechanics of Machinery	4	5

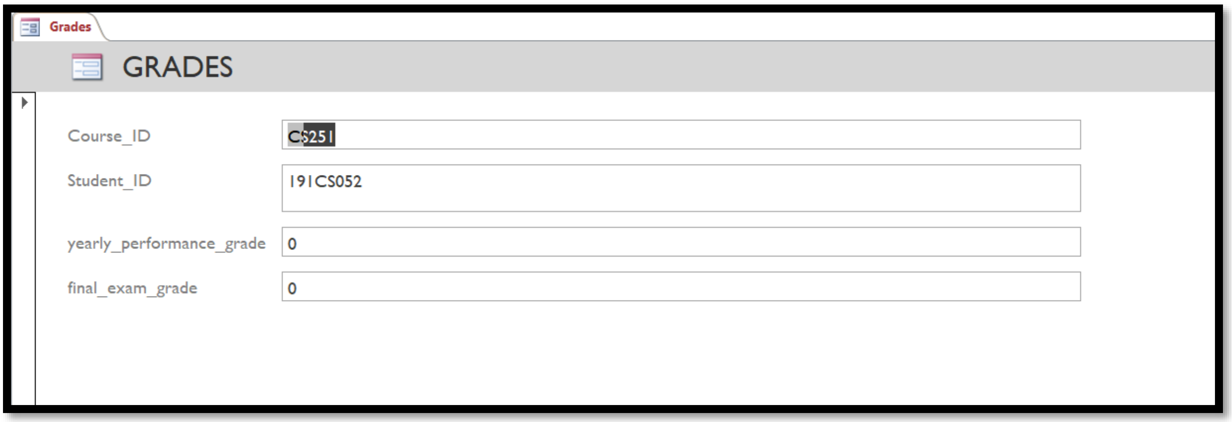
This one is the courses form that displays all the courses available.

Students

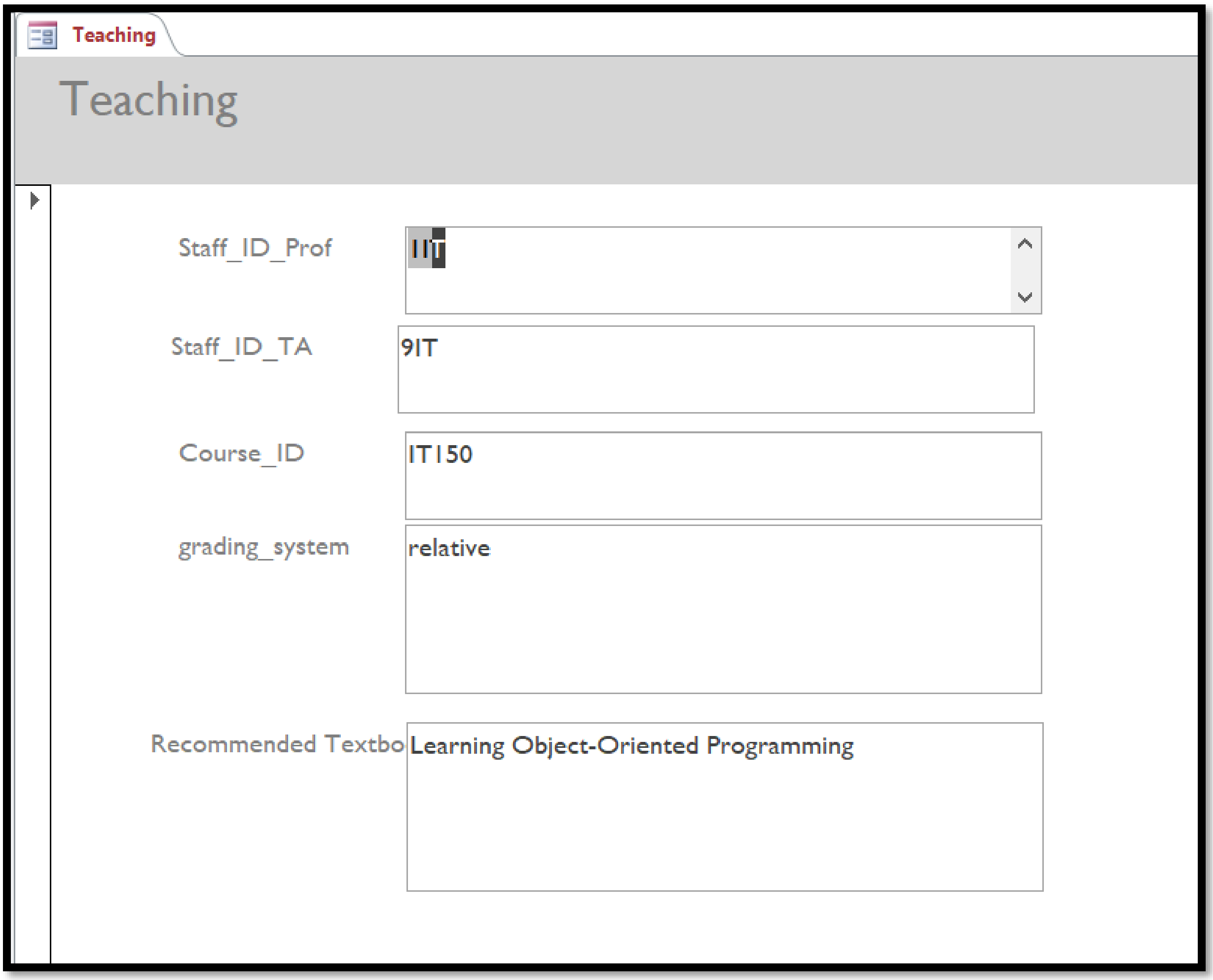
Students

Student_ID	National_ID	First Name	last Name	Middle Name	address
191CS052	123000000219	Kiran	Bhagat	Chetan	51/6, Chetan House, D B Gupta Road, Karol Bagh, New Delhi, 110005
191CS101	123000000100	Rakesh	Singh	Dilip	125 /, Shiv Sagar Indl Estate, Babasaheb Kotakar Road, Goregaon , Mumbai,
191CS111	123000000254	Rohan	Raghavan		318, Mahavir Ind Estate, M Caves Road, Chakala, Andheri(e)
191CS123	123000000654	Kabir	Dubey		67,tankrdctptblr-53, Chickpet
191CS190	123000000900	Himanshu	Barve	Prasad	Sitladevi Temple Road, Near Union Bank, Mahim, Mumbai, Maharashtra 400016
191CS191	123000000901	Bhupesh	Kumar	Raut	1 A, Ladha Bhai Mansion, Queens Road, Opera House, Mumbai, Maharashtra
191CS836	123000000174	Asvathama	Ponnada		18-a, 4th Flr, Natraj Studio, Andheri-kurla Road, Pereira Sadan, Andheri(e), Mumbai,
191CS958	123000000570	Avantas	Ghosal		384, Veer Savarkar Marg, Prabhadevi, Mumbai, Maharashtra
191EC069	123000000250	Rithvik	Shikare		83, Valipalayam, Coimbatore, Tamil Nadu, 641601

This one shows all the students studying in the college.



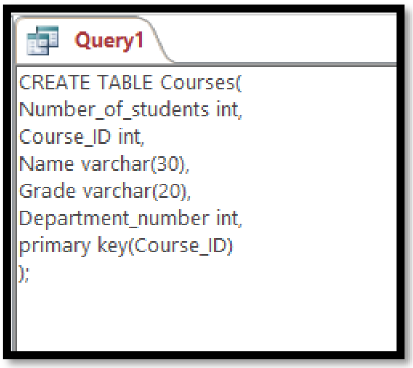
Using this form, we can update the grades of any student easily.



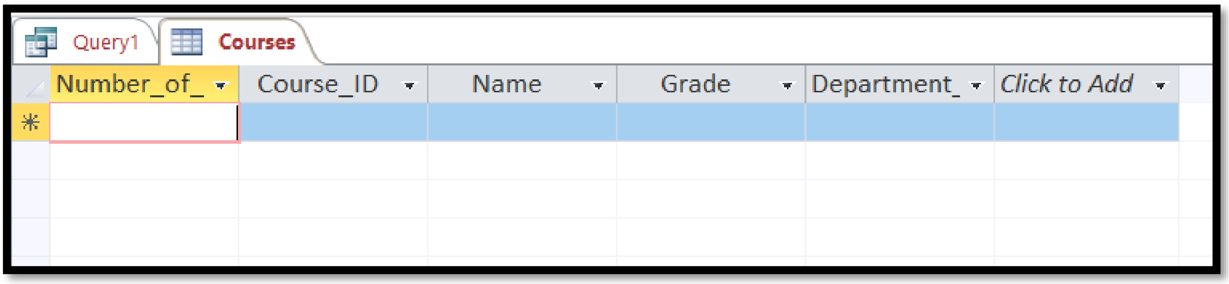
This is the last form, using this we can assign any professor and teaching assistant for a particular course. So, this is the frontend part we have designed for our database.

7.CRUD OPERATIONS

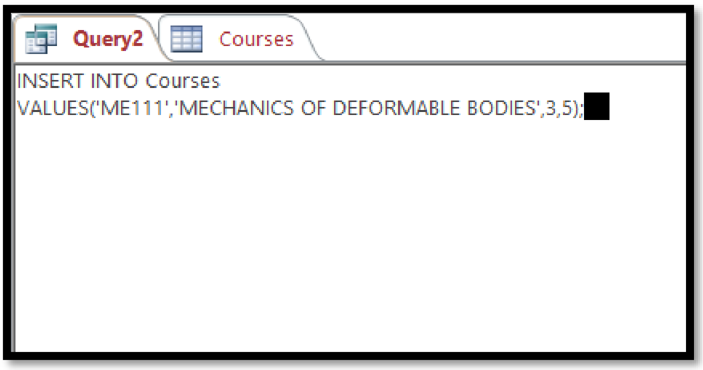
In this section, we will go through the basic CRUD operations of the SQL language. The full form of CRUD is Create, Read, Update and Delete. Let's perform all these operations on our database and examine the results. So first let's create a relation named Courses. The screenshot corresponding to that query is attached below.



The result of the above query is attached below.



As you can see in the above picture a relation named Courses was created. Now let's add some tuples to it using insert operation in SQL.



Similarly, we have added all the values into the Courses relation. Now let's read all the values in the Courses relation.

Courses | Query1

```sql
SELECT *
FROM courses;
```

The result of the above query is attached below.

Courses | Query1

Course_ID	Name	Credits	Department_
CS251	Database Systems	4	1
CS254	Database Systems Lab	2	1
CS255	Operating Systems Lab	2	1
CS300	Operating Systems	4	1
EC341	Computer Arithmetic	4	3
EC342	Embedded System Design	4	3
EC344	Analog Integrated Circuits	4	3
EE359	Energy Auditing	4	4
EE360	Microprocessors	4	4
EE361	Power System Communications	4	4
EE362	Operation and control of Power Systems	4	4
IT110	Digital System Design	4	2
IT150	Object Oriented Programming	4	2
IT200	Computer Communication and Networking	4	2
IT202	Data Structures and Algorithms-I	3	2
ME111	MECHANICS OF DEFORMABLE BODIES	3	5
ME201	Basic Engineering Thermodynamics	4	5
ME202	Fluid Mechanics and Machinery	4	5
ME203	Mechanics of Machinery	4	5
ME204	Basic Manufacturing Processes	4	5
ME251	Applied Thermodynamics	3	5
ME252	Analysis and Design of Machine Components	4	5
ME253	Computer Aided Engineering	3	5

Till now, we have performed Create, Update and Read operations. So now let's perform the last operation which is Delete.

Courses | Query3

```sql
DELETE FROM Courses WHERE Course_ID='ME111';
```

The result of the above operation is attached below.

Query3 | Courses

Course_ID	Name	Credits	Department_	Click to Add
CS251	Database Systems	4	1	
CS254	Database Systems Lab	2	1	
CS255	Operating Systems Lab	2	1	
CS300	Operating Systems	4	1	
EC341	Computer Arithmetic	4	3	
EC342	Embedded System Design	4	3	
EC344	Analog Integrated Circuits	4	3	
EE359	Energy Auditing	4	4	
EE360	Microprocessors	4	4	
EE361	Power System Communications	4	4	
EE362	Operation and control of Power Systems	4	4	
IT110	Digital System Design	4	2	
IT150	Object Oriented Programming	4	2	
IT200	Computer Communication and Networking	4	2	
IT202	Data Structures and Algorithms-I	3	2	
ME201	Basic Engineering Thermodynamics	4	5	
ME202	Fluid Mechanics and Machinery	4	5	
ME203	Mechanics of Machinery	4	5	
ME204	Basic Manufacturing Processes	4	5	
ME251	Applied Thermodynamics	3	5	
ME252	Analysis and Design of Machine Components	4	5	
ME253	Computer Aided Engineering	3	5	

As you can see, the tuple was deleted in our relation. These are the basic CRUD operations of SQL.

8.DEMO

This report will be followed by a demo.

Thank You