DEPARTMENT OF BIOCHEMISTRY & BIOTECHNOLOGY
UNIVERSITY OF BARISHAL

Assignment on
University Management System (ums) Database

SUBMITTED TO

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Making ER diagram for University Management System

Step-1: Identify the entities required
- Department
- Administrator
- Student
- Exam
- Attendance
- Course
- Instructor

Step-2: Identify the Attributes and Primary key for each Entity
department(id, name, founded, hod)
instructors (id, name, phone, email, address, dept_id)
administrator(id, name, email)
students(id, name, roll, phone_no, address, gender, dept_id)
exam(id, name, marks, dept_id, student_id)
attendance(id, percentage, student_id, course_id)
courses(id, name, credits, marks, instructor_id, dept_id)

## Step-3: Identify the relationship needed
- Department-enrolls-students
- Department-handle-courses
- Department-conducts-exams
- Departments-maintains-attendance
- Administrator-enters-courses
- Administrator-adds-students
- Students-enrolls-department
- Department-has-Instructor

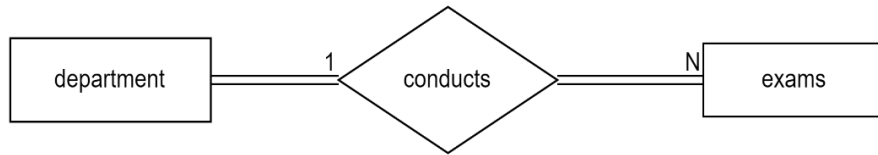## Step-4: Identify the Cardinality Ratio and Participation
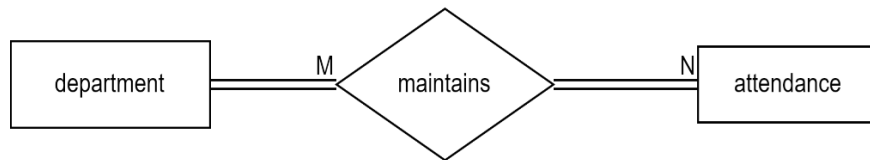1. Department-enrolls-students

2. Department-handle-courses
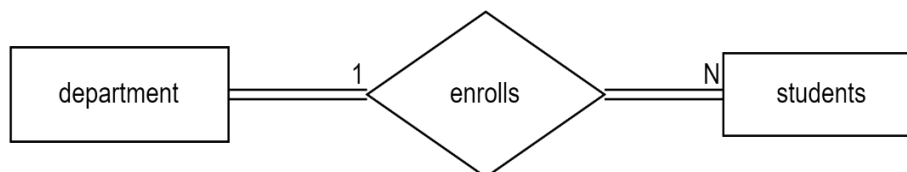
| department | 1 — handle — N | courses |

3. Department-conducts-exams
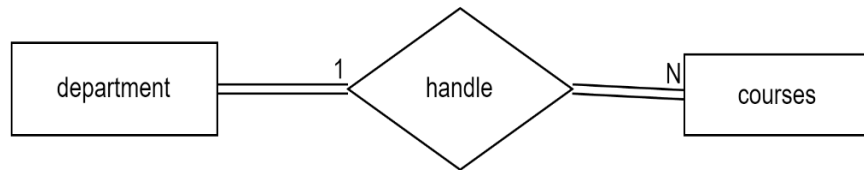
| department | 1 — conducts — N | exams |

4. Departments-maintains-attendance

| department | M — maintains — N | attendance |

5. Administrator-enters-courses

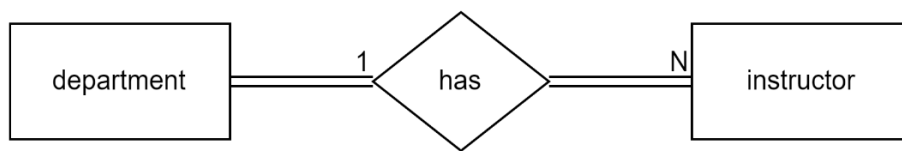| administrator | 1 — enters — N | courses |

6. Administrator-adds-students
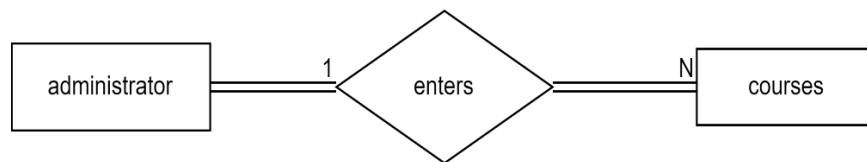
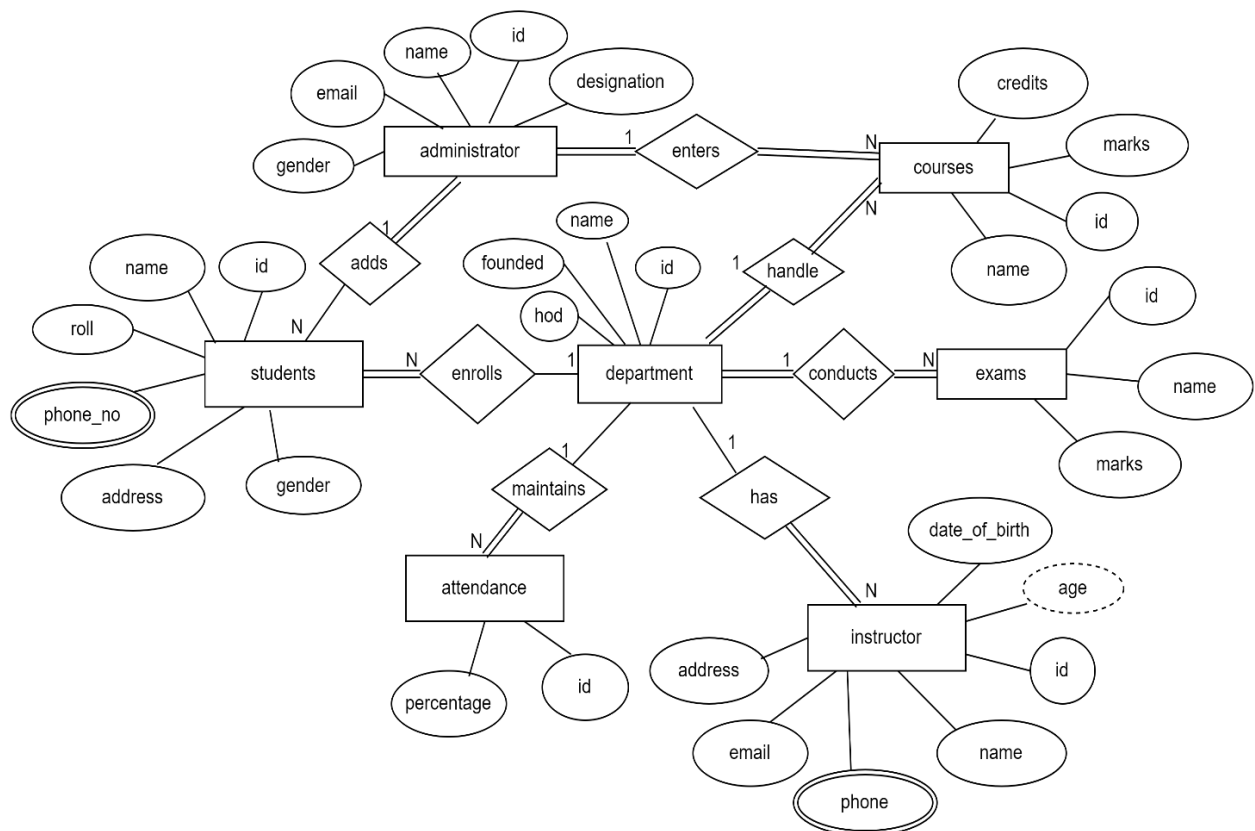| administrator | 1 — adds — N | students |
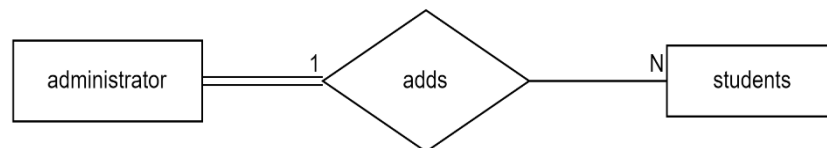
7. Students-enrolls-department
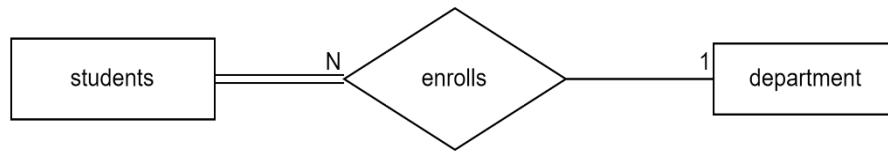
8. Department-has-Instructor

Step-5: Draw the Diagram

Implementing the database in MySQL:

All tables with sample data:

1. departments- (id, name, founded, hod)

id	name	founded	hod
1	statistics	2001-01-03	Ahsanul Haque
2	Physics	1998-10-26	Nazim al azad
3	Chemistry	2014-10-08	Ahmadul Kabir
4	Zoology	1996-10-26	Robayet Amin
5	English	1998-10-06	Sahida Khatun
6	Bangla	2015-10-27	Naima Akter
7	Biochemistry	2015-10-05	Halima Khatun
8	Economics	2024-10-09	Nilufa Begum
9	Law	2024-10-30	Tanzila Akter

2. instructors (id, name, phone, email, address, dept_id)

id	name	email	date_of_birth	phone	address	dept_id
1	Rumman Haque	rum@gmail.com	1995-03-17	01562-32158	Sadar Road,Barishal	5
2	Zunayed Ahsan	ahs@gmail.com	1998-08-19	01753-344787	RK mission road	5
3	Rumki Pall	pal@gmail.com	2000-09-12	01762-17653	Victoria Garden,Tikatuli	3
4	Shilpa Roy	roy@gmail.com	1995-02-01	016532-78634	RN Tower,Maniknagar	1
5	Rehana Parvin	rehna@gmail.com	2001-03-09	01763-372864	Bels Park,Barishal	3

3. administrators (id, name, email)

id	name	gender	designation	email
1	Humayan Kabir	male	Chancellor	humk@gmail.com
2	Raihan Iqbal	male	Vice-Chancellor	Rah@yahoo.com
3	Kamrun Nahar	female	Pro-Vice Chancellor	nahar@yahoo.com
4	Shaila Haque	female	Register	shaila@gmail.com
5	Mustofa Kamal	male	Dean	kamal@yahoo.com
6	Jahangir Alam	male	Director of Administration	jahalam@gmail.com
7	Ziasmin Khatun	female	Director of IT	ZK@gmail.com

4. students-(id, name, roll, phone_no, address, gender, dept_id)

id	name	roll	phone_no	address	gender	dept_id
1	Tanvir Rahman	21-stat-00	013332-32144	Nathullabad,Barishal	male	5
2	Aporna Roy	22-CHE-016	0138283-76344	Banaripara	female	3
3	Onoy Khan	20-ZOO-033	018323-256321	Narayanganj,Dhaka	male	4
4	Tawfik Rahman	20-ENG-020	016323-2176347	Rokeya Koloni,Barishal	male	5
5	Sultana Sadia	21-PHY-005	026732-38235	College Road,Barishal	female	2
6	fahmida akter	21-BAN-016	0273434-2174587	Narayanganj,Dhaka	female	6

5. exams-(id, name, marks, dept_id, student_id)

id	name	marks	dept_id	course_id	student_id
1	Mid_terms	10	1	3	4
2	Year Final	80	3	3	5
3	Mid Terms	20	5	6	2
4	Year Final	85	7	3	1
5	Year Final	70	9	1	3

6. attendance(id, percentage, student_id,course_id)

id	percentage	course_id	student_id
1	70%	5	3
2	60%	3	3
3	78%	1	1
4	30%	4	4
5	90%	4	5
6	45%	5	4

7. courses-(id, name, credits, marks, instructor_id, dept_id)

id	name	credits	marks	dept_id	instructor_id
1	Fine Arts	2credit	50	9	3
2	Literature	4credit	100	9	4
3	Neurobiochemistry	4credit	100	7	2
4	Finance Academic	6credit	150	8	1
5	Internatinal Bussiness	4credit	100	8	5
6	The English Poets	2credit	50	5	2