

UNIVERSITY OF BARISHAL
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

DATABASE PROJECT REPORT

EDGE Management System

A Report Submitted in Partial Fulfillment of the Requirements for the Course:
CSE-2102: Database Management System Lab

Submitted by:

Student name
Class Roll/Exam Roll
Session

Submitted to:

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Submission Date:

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1. Overview of the project

The Edge Online Application Platform for the University of Barishal is designed to facilitate seamless management of training programs offered by the university. This database-driven system ensures efficient handling of various aspects of the training programs, including student applications, instructor assignments, class schedules, results, and notifications.

The platform will support multiple training centers, allowing students to enroll in different training modules at their preferred location. Instructors will be assigned to each module, and a class routine will be generated for all batches. Upon completion of training, students can access their results through the system. Additionally, the platform will serve as a centralized hub for notices and announcements related to the training programs.

This relational database system will ensure data integrity, accessibility, and scalability, supporting a smooth and structured learning experience for students while enabling administrators to efficiently manage training operations.

2. Objective of the Project

The primary objective of this project is to design and develop a database for the Edge Online Application Platform at the University of Barishal to efficiently manage training programs, student enrollments, instructor assignments, and other administrative tasks.

Key goals include:

- Store and manage details of various training programs, including modules and centers.
- Allow students to apply for training programs in different training centers.
- Maintain records of instructors assigned to different training modules.
- Generate batch-wise class schedules dynamically.
- Enable students to view their results after completing training.
- Provide a notification system for training-related announcements and updates.
- Ensure smooth data retrieval and accessibility for students, instructors, and administrators.

3. Motivation of the project

4. Requirements of the project

5. Scope of the project

6. Designing (Entity Relationship)ER Diagram

Steps of Drawing ERD

1. Identify the Entities Required
2. Identify the Attributes and Primary key for each Entity
3. Identify the Relationship needed
4. Identify the Cardinality Ratio and Participation
5. Draw the Diagram

Scenario of EDGE training application platform

Edge will offer various training programs through circular. There may be different training centres and any student can apply in any training module in any centre. Instructors will be assigned for any training module. This platform will provide a class routine for all batches. Students can find their result after finishing the training. Any notice regarding this program will be shared on this platform.

Step-1: Identify the Entities Required

Edge will offer various training **programs** through **circular**. There may be different training **centers** and any **student** can apply in any training module in any center if they are eligible for a course based on the **eligibility**. **Instructors** will be assigned for any training module.

This platform will provide a class **routine** for all **batches**. Students can find their **result** after finishing the training. Any **notice** regarding this program will be shared on this platform.

Step-2: Identify the Attributes and Primary key for each Entity

1. program(**program_id**, name, credit, level, duration, eligibility, syllabus)
2. centre(**centre_id**, name, contact, address)
3. circular(**circular_id**, title, description, publish_date, deadline)
4. eligibility(**eligible_id**, level, age, education_background, laptop, prerequisites)
5. student(**student_id**, name, gender, phone, email, dob, registration_no, roll, batch, session, Year)
6. instructor(**instructor_id**, name, phone, expertise_on, address, designation)
7. batch(**batch_id**, name, capacity)
8. routine(**routine_id**, time, day)

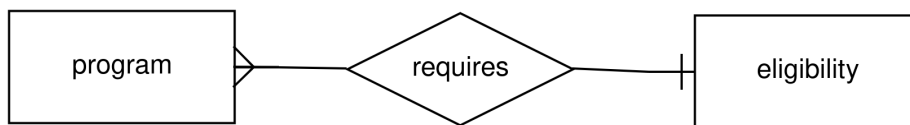
9. room(**room_id**, name, floor, room_number)
10. exam(**exam_id**, exam_name, total_marks, obtained_marks, exam_date)
11. notice(**notice_id**, title, description, publishing_date, attachments)

Step-3: Identify the Relationship needed

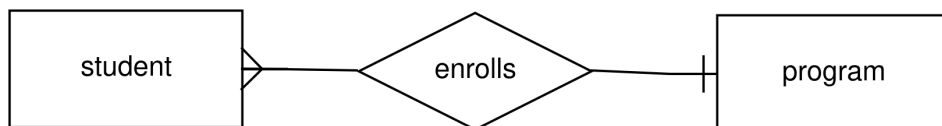
1. Program-require-Eligibility.
2. Student-enrolls-Programs.
3. Instructor-conducts-Program.
4. Student-select-Center.
5. Student-choice-Batch
6. Student-Appears-Exam.
7. Instructor-Assigns-Batches.
8. Batch-Has-Routine.
9. Rooms-Allocates for-Batch

Step-4: Identify the Cardinality Ratio and Participation

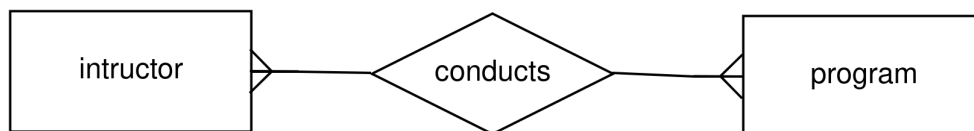
1. Program-require-Eligibility.



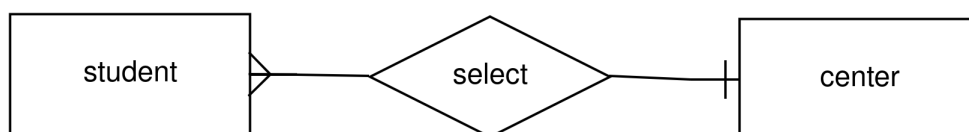
2. Student-enrolls-Programs



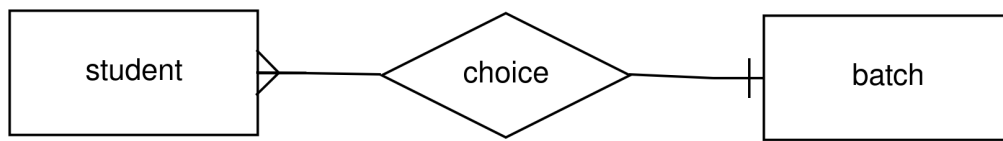
3. Instructor-conducts-Program



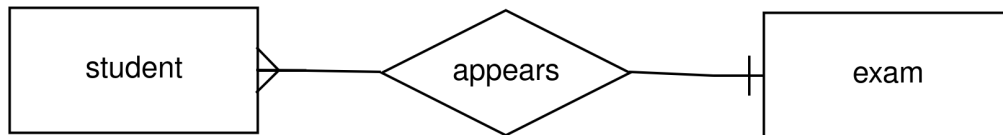
4. Student-select-Center.



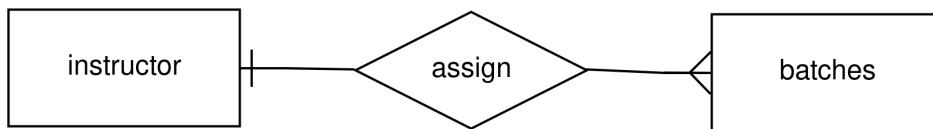
5. Student-choice-Batch



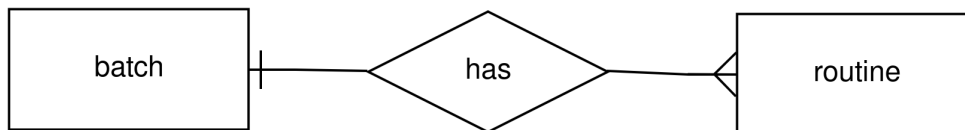
6. Student-appears-Exam.



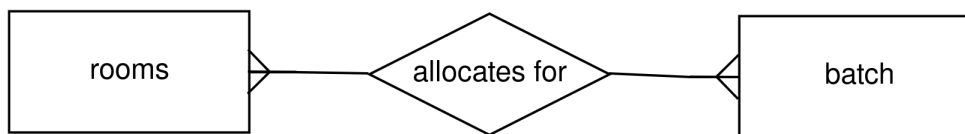
7. Instructor-assigns-Batches.



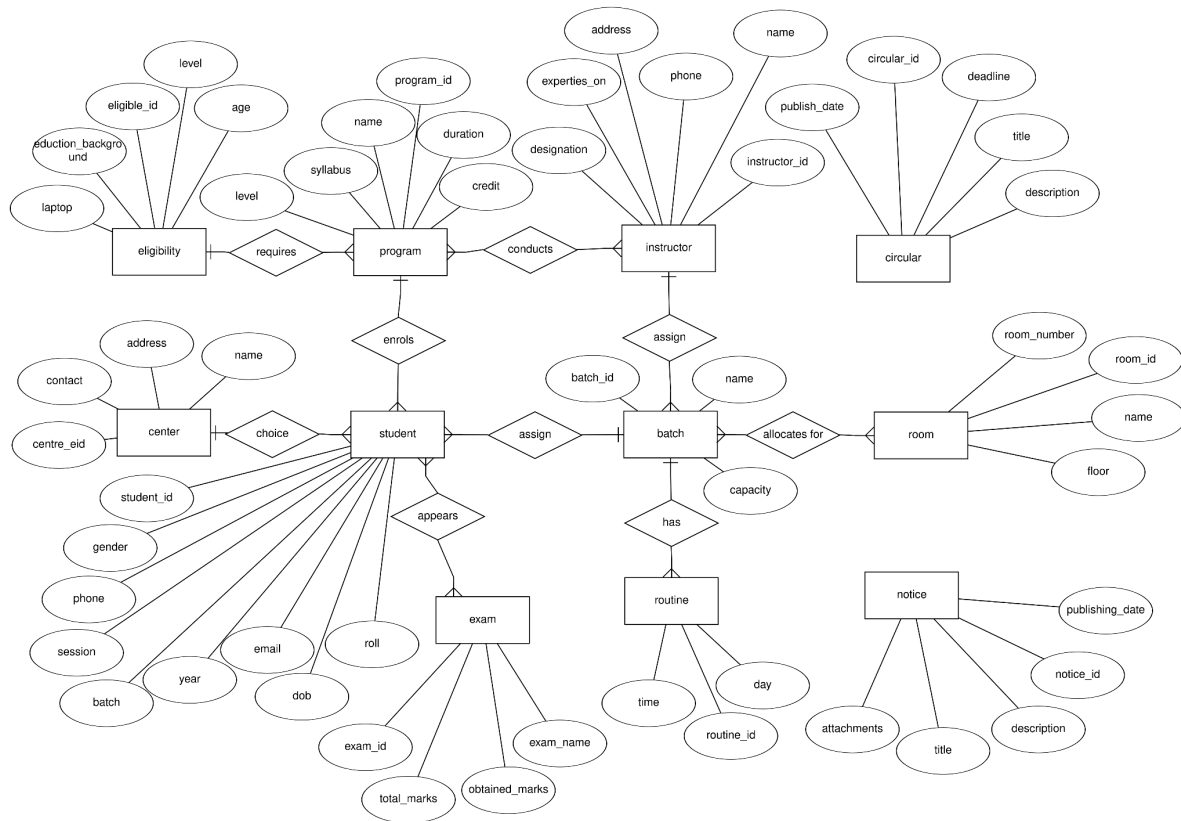
8. Batch-has-Routine.



9. Rooms-allocates for-Batch



Step-5: Draw the Diagram



7. Reduction to database schema:

1. eligibility(**eligible_id**, level, age, education_background, laptop, prerequisites)
2. program(**program_id**, eligible_id, name, credit, level, duration, syllabus)
3. centre(**centre_id**, name, contact, address)
4. student(**student_id**, center_id, program_id, name, gender, phone, email, dob, registration_no, roll, batch, session, year)
5. exam(**exam_id**, exam_name, total_marks, obtained_marks, exam_date, student_id)
6. instructor(**instructor_id**, name, phone, expertise_on, address, designation)
7. program_instructor(**pi_id**, instructor_id, program_id)
8. batch(**batch_id**, instructor_id, name, capacity)
9. routine(**routine_id**, batch_id, time, day)
10. room(**room_id**, name, floor, room_number)
11. allocate_room(**ar_id**, batch_id, room_id)
12. circular(**circular_id**, title, description, publish_date, deadline)
13. notice(**notice_id**, title, description, publishing_date, attachments)

8. Implementing the database in MySQL:

All tables with sample data:

Eligibility (eligible_id, level, age, education_background, laptop, prerequisites)

eligible_id	level	age	education_background	laptop	prerequisites
1	basic	30	SSC	Yes	Must know english language
2	intermediate	35	HSC	Yes	Must know english language
3	advance	40	Honors	Yes	Must know english language

Program(program_id, eligible_id, name, credit, level, duration, syllabus)

program_id	name	credit	syllabus	level	duration	eligible_id
1	Basic Web Development	3	HTML, CSS, PHP, JS	Basic	60 Hours	1
2	Database management system	4	SQL, MySQL, Oracle	intermediate	80 Hours	2
3	App Development	6	Flutter, React Native	Advance	90 Hours	3

centre(centre_id, name, contact, address)

centre_id	name	contact	address
1	University of Barishal	+88014347348	Kornokathi,Barishal
2	BM college	+88018483474	Sador, Barishal
3	PSTU	+880483484	Dumki- Patuakhali Highway

student(student_id, center_id, program_id , name, gender, phone, email, dob, registration_no, roll, batch,session, Year)

stud ent_ id,	nam e	ge n de r	p h o ne	e m ai l	dob	reg ist rat ion _n o	r o l l	ba tc h	ses sio n	Y e a r	progr am_id	cent er_i d
1	sacin	male	0348 349	s@g mail .com	02/02/ 2000	1191 0	19 CS E0 35	8	2018- 19	4	2	1
2	Rajib	male	0934 934	r@g mail .com	02/02/ 2001	1191 8	19 CS E0 37	8	2018- 19	4	1	1
3	bidhan	male	0934 93 34	b@g mail .com	02/02/ 2002	1193 0	19 CS E0 60	8	2018- 19	4	3	2

exam(exam_id, exam_name, total_marks, obtained_marks, exam_date, student_id)

exam_id	exam_name	total_marks	obtained_marks	exam_date	Student_id
1	mid	20	15	5/10/2024	1
2	quiz	20	10	5/15/2024	1
3	final	60	45	5/18/2024	2

exam_appearance(ea_id, student_id, exam_id, batch_id)

ea_id	student_id	exam_id	batch_id
1	3	2	1
2	1	1	2
3	2	3	3

instructor(instructor_id, name, phone, expertise_on, address, designation)

instructor_id	name	phone	expertise_on	address	designation
1	Md. Rahim	349834	DBMS	Dhaka	Professor
2	Md. Karim	34094	WEB	Barishal	Professor
3	Md. Salam	34889	APP	Barishal	Lecturer

program_instructor(pi_id, instructor_id, program_id)

pi_id	instructor_id	program_id
1	2	1
2	1	2
3	3	3

batch(batch_id, instructor_id, name, capacity)

batch_id	name	capacity	instructor_id
1	App Development	25	3
2	Basic Web	25	1
3	DBMS	30	2

routine(routine_id, batch_id, time, day)

routine_id	time	day	batch_id
1	9-12	Friday	1
2	12-3	Sunday	1
3	3-6	Monday	2

room(room_id, name,floor, room_number)

room_id	name	floor	room_number
1	Class room-1	5th	6001
2	Programming Lab	4th	5002
3	IOT Lab	4th	5003

allocate_room(ar_id, batch_id, room_id)

ar_id	batch_id	room_id
1	1	2
2	3	1
3	2	3

circular(circular_id, title, description, publish_date, deadline)

circular_id	title	description	publish_date	deadline
1	Application-1	Term-1	20 January 2023	27 January 2023
2	Application-2	Term-2	20 March 2023	27 March 2023
3	Application-3	Term-3	20 July 2023	28 July 2023

notice(notice_id, title, description, publishing_date, attachments)

notice_id	title	description	publishing_date	attachments
1	Application	Apply on online for all courses	20 January 2024	27 January 2024
2	Prize	Who are 1st will be honoured by gov	20 March 2024	27 March 2024
3	Certificate	Everybody must get certificate	20 July 2024	28 July 2024

9. Conclusion and Future Work