| | |
|---|---|
| **Ganesh P Jaishi** | **2023-11-20** |
| **Database Development** | **LP3** |

**Case 1: ONLINE SURVEY**

**Title: Online Survey Management System**

**Synopsis:**

The ERD for the Online Survey Management System represents the database structure for DBD Sports' initiative to engage users through periodic surveys on their website.

**Business Analysis:**

The system is designed to handle multiple surveys, each related to a specific topic provided by the marketing team. The surveys are time-bound, with specified start and end dates, and are displayed sequentially. Each survey contains multiple questions, and each question offers multiple choice responses.

Business Rule:

1. A total of 6 surveys will initially be loaded into the database ranging from topics on personal health to team sports to nutrition.

2. Each survey will be related to a particular topic.
3. Marketing will specify the start and end date for each survey. Only one will be displayed on the site at a time.

4. Each survey will have at least 10 questions.

5. Each question will have at least 3 choices.

6. Each visitor will be required to respond to each question by choosing 1 response from the possible choices.

Assumptions:

- Surveys are not recurring; once a survey period ends, it is not scheduled again.

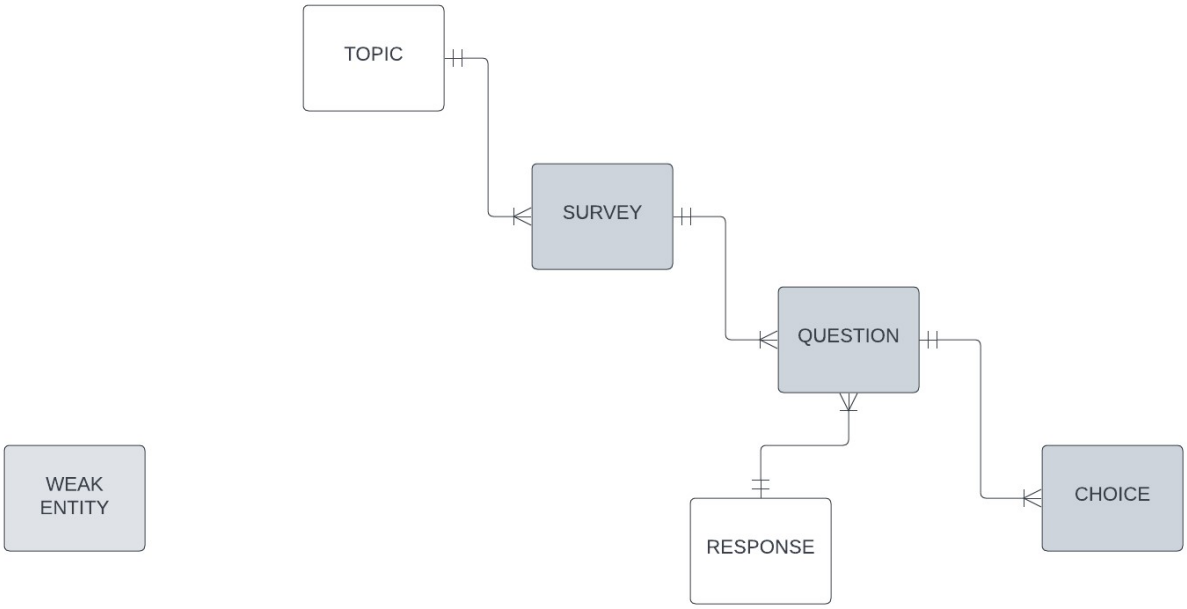
- There is no limit on the number of responses collected for each survey.
- The system can handle concurrent access by multiple users without any response loss.

Entities:

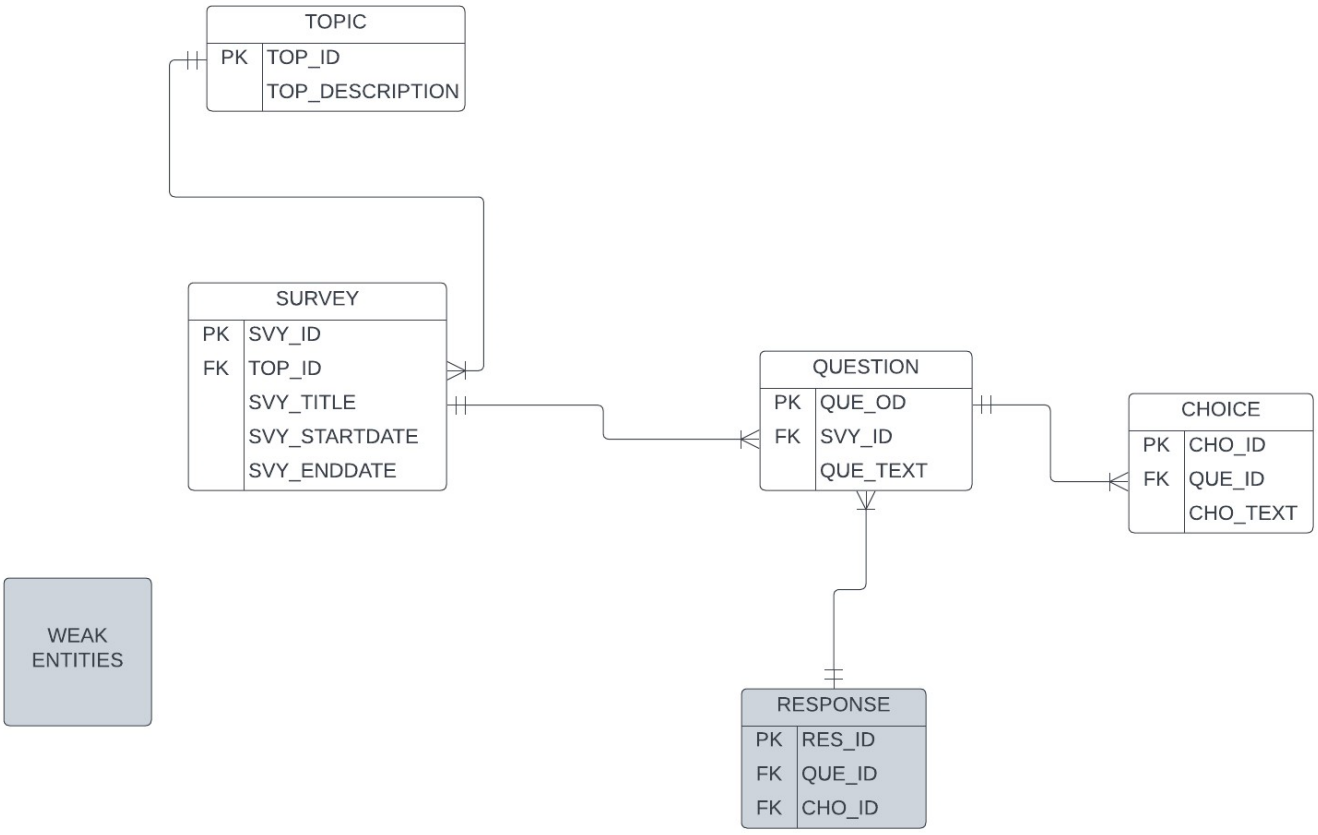
1. Survey
    - Attributes: SurveyID (PK), TopicID (FK), Title, StartDate, EndDate
2. Topic
    - Attributes: TopicID (PK), Name
3. Question
    - Attributes: QuestionID (PK), SurveyID (FK), QuestionText
4. Choice
    - Attributes: ChoiceID (PK), QuestionID (FK), ChoiceText
5. Response
    - Attributes: ResponseID (PK), QuestionID (FK), ChoiceID (FK)

Entity Diagram

Relationship Diagram:



**EDR Diagram:**


TOPIC
PK
TOP_ID
TOP_DESCRIPTION
SURVEY
PK
SVY_ID
FK
TOP_ID
SVY_TITLE
SVY_STARTDATE
SVY_ENDDATE
QUESTION
PK
QUE_OD
FK
SVY_ID
QUE_TEXT
CHOICE
PK
CHO_ID
FK
QUE_ID
CHO_TEXT
WEAK ENTITIES
RESPONSE
PK
RES_ID
FK
QUE_ID
FK
CHO_ID

| | |
|---|---|
| Ganesh P Jaishi | 2023-11-20 |
| Database Development | LP3 |

**Case 2: JOB APPLICATION**

Title: Online Job Application System

Synopsis:

The ERD for the Online Job Application System depicts the database structure for managing job applications for DBD Sports' online portal.

Business Analysis:

The system facilitates job applications by collecting applicants' personal information and job preferences. Each job is categorized, and applicants may apply to multiple jobs, but only once per job. HR representatives are assigned to applicants to assist and process their applications.

Business Rules:

1. When a person applies for a job, the following information is required: a. Full Name b. Address c. Phone d. Email

2. An open position is assigned to a job category.

3. A person may apply for more than 1 job, but can apply for each job only once.

4. Each job applicant is assigned to an HR representative who processes the application and helps the applicant with any questions.

5. Once an HR representative has been assigned to a job applicant, the same HR representative will be assigned to the job applicant each time he/she applies for a job.

6. Job applications older than 1 year will be deleted.

7. Applications for an open job will be accepted until the position is filled

Assumptions:

- HR representatives have the capacity to handle multiple applicants.
- The system automatically assigns and tracks HR representatives to applicants.

- The deletion of applications older than one year is automated.

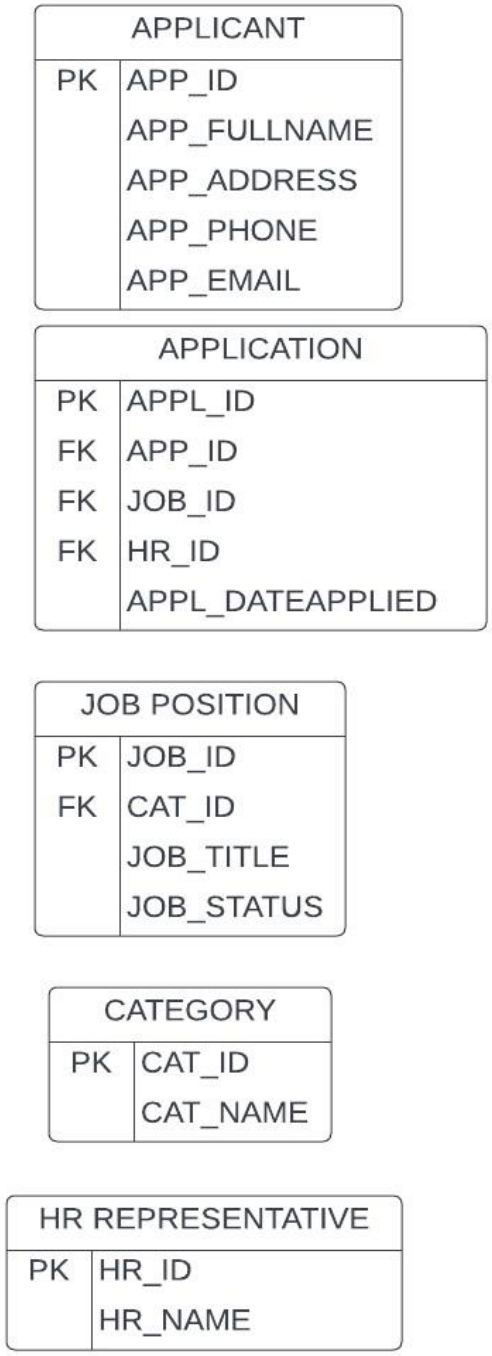
Entities:

1. Applicant
    - Attributes: ApplicantID (PK), FullName, Address, Phone, Email
2. JobPosition
    - Attributes: JobID (PK), CategoryID (FK), Title, Status
3. Category
    - Attributes: CategoryID (PK), Name
4. HRRepresentative
    - Attributes: HRID (PK), Name
5. Application
    - Attributes: ApplicationID (PK), ApplicantID (FK), JobID (FK), HRID (FK), DateApplied

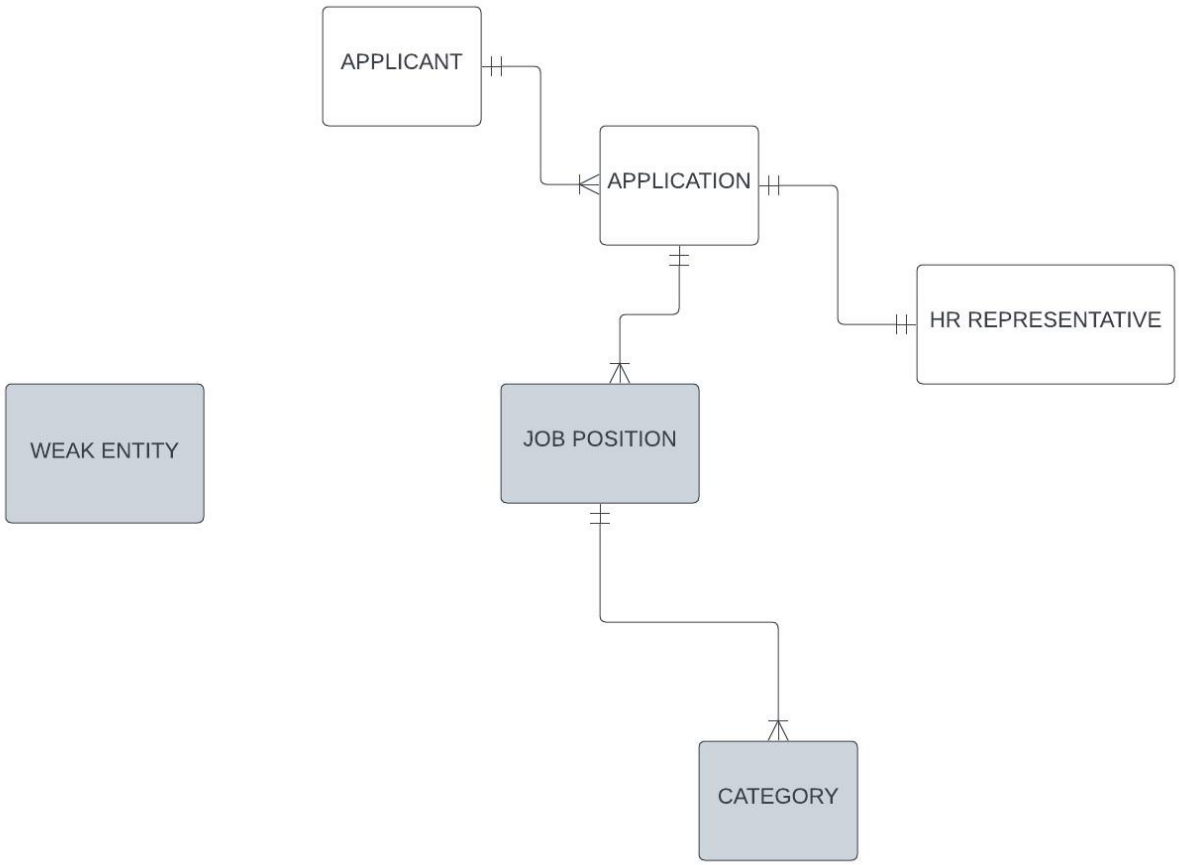
Relationships:

- An Applicant can submit multiple Application (1 to many)
- A JobPosition can have multiple Application (1 to many)
- A Category can include many JobPosition (1 to many)
- An HRRepresentative can be associated with many Application (1 to many)

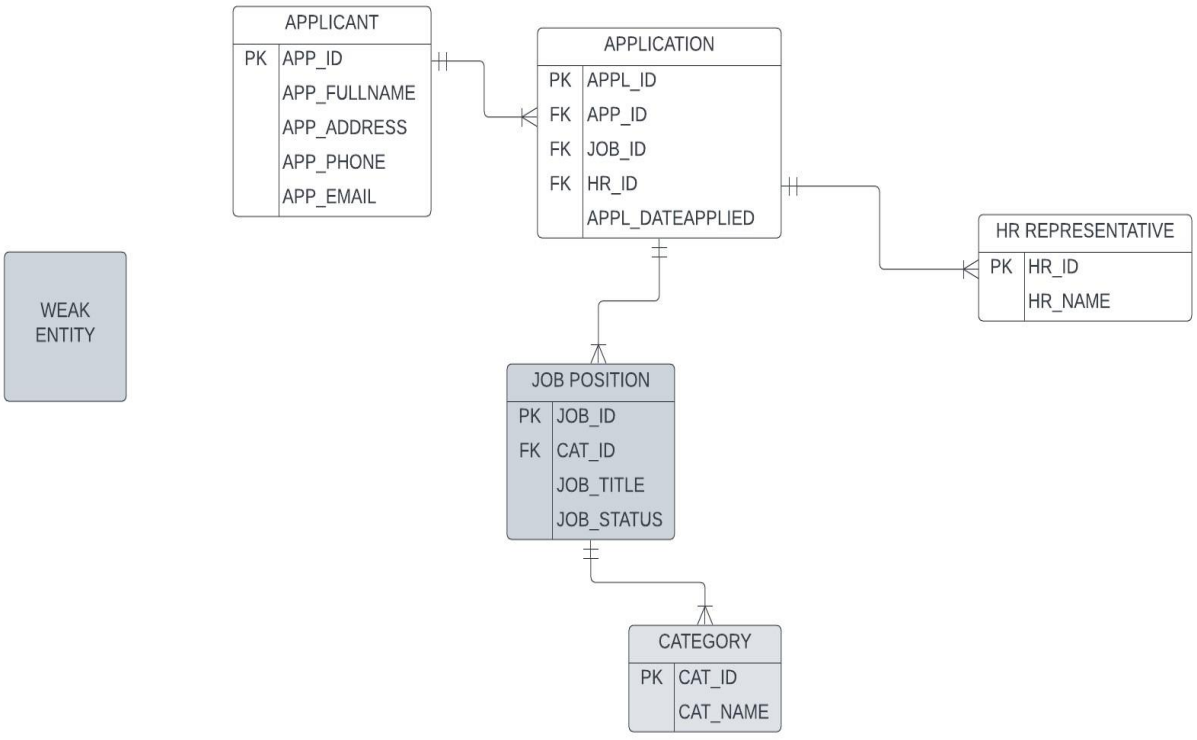
Entity Diagram



Relationship Diagram:



EDR Diagram:


APPLICANT
PK APP_ID
APP_FULLNAME
APP_ADDRESS
APP_PHONE
APP_EMAIL
APPLICATION
PK APPL_ID
FK APP_ID
FK JOB_ID
FK HR_ID
APPL_DATEAPPLIED
HR REPRESENTATIVE
PK HR_ID
HR_NAME
WEAK ENTITY
JOB POSITION
PK JOB_ID
FK CAT_ID
JOB_TITLE
JOB_STATUS
CATEGORY
PK CAT_ID
CAT_NAME

| | |
|---|---|
| Ganesh P Jaishi | 2023-11-20 |
| Database Development | LP3 |

**Case 3**

**Title:** Gym Reservation System

Synopsis:

The Gym Reservation System ERD outlines a database designed to manage the reservations of gym spaces at DBD Sports facilities. It ensures efficient allocation of gyms to various teams for practice sessions.

Business Analysis:

The system is tailored to accommodate multiple teams making reservations for gym spaces within DBD Sports facilities. Each facility houses multiple gyms, and the system restricts teams to book only one gym at a time while allowing for multiple reservations across different days and times. This management tool aims to streamline the booking process and ensure fair usage of the gyms by all teams.

Business Rules:

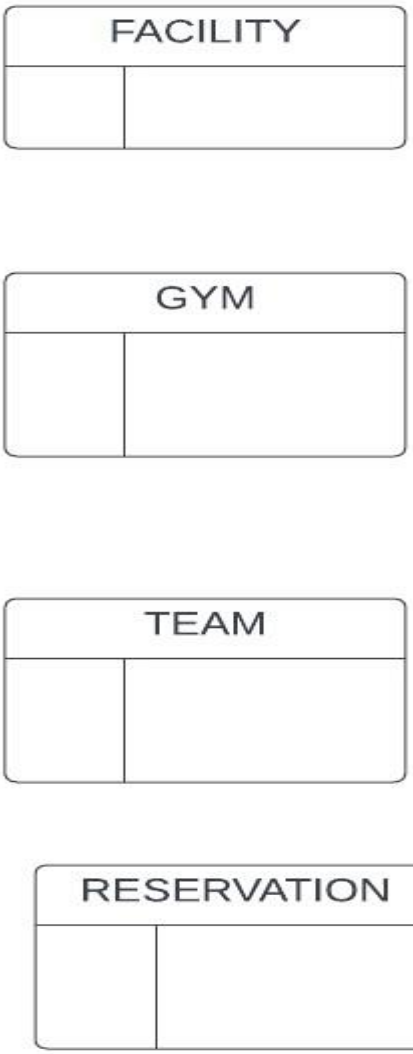
- Each DBD Sports facility contains at least two gyms.
- Teams are limited to reserving one gym space at a time to prevent double-booking.
- Multiple reservations by the same team are possible, but not during the same time slot.
- Teams can only reserve gym space at their home facility, promoting local team support.
- Gym reservations are subject to availability; a gym cannot be booked if it's already reserved.

Assumptions:

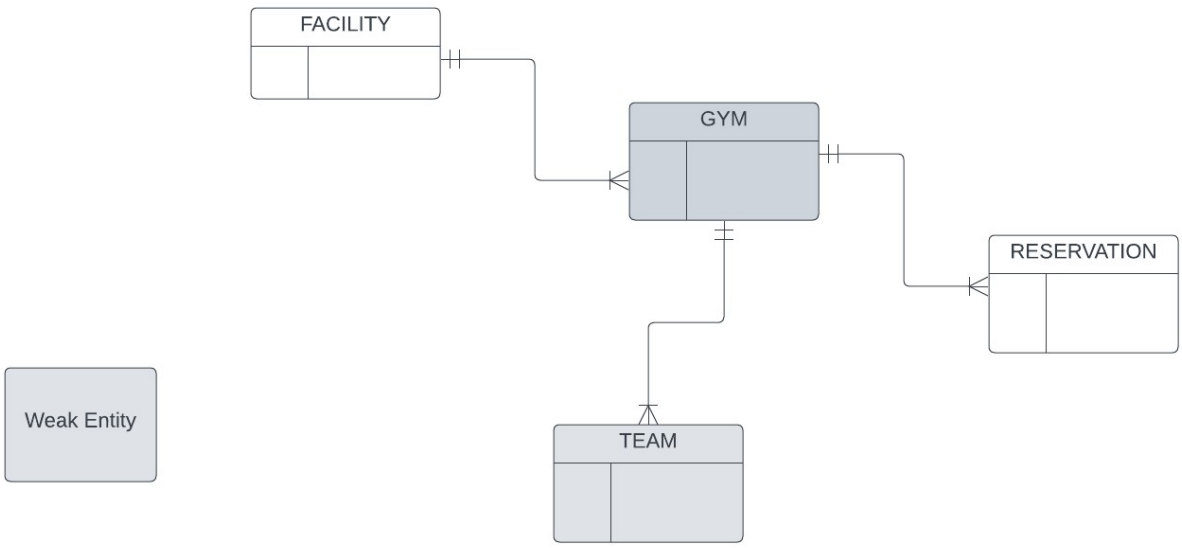
- The system will automatically prevent overlapping bookings for the same team.
- Teams have predefined “home facilities” where they are eligible to book gym spaces.
- Reservation conflicts are automatically detected and prevented by the system.

- The system is capable of real-time updates to reflect cancellations or changes in reservations.

Entity Diagram:



Relationship Diagram:



Entity Diagram: