KHULNA UNIVERSITY OF ENGINEERING & TECHNOLOGY

Department of Computer Science and Engineering (CSE)

PROJECT ON CSE3110

Course Title: Database Systems

Project Name: **Organization of KUET Sports Database Management System**

Submitted To:

1. Md. Masum Al Mesba

Assistant Professor

Department of Computer Science and Engineering (CSE)

Khulna University of Engineering & Technology (KUET)

2. Nazia Jahan Khan Chowdhury

Assistant Professor

Department of Computer Science and Engineering (CSE)

Khulna University of Engineering & Technology (KUET)

Submitted by:

MD. Parvej Mia

Roll: 1807081

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Project Overview

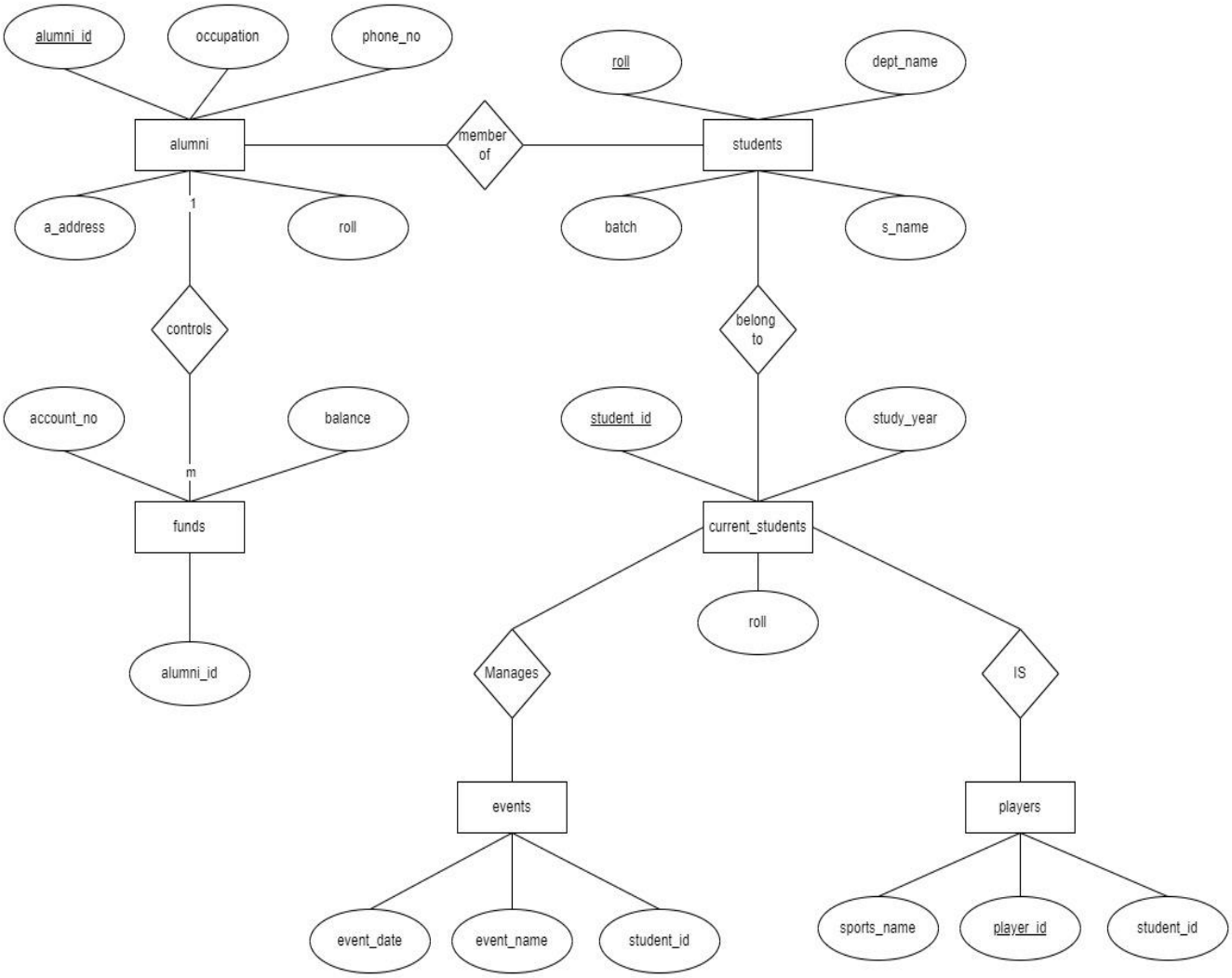
All the information of a Sports club needed can be managed in this project. Information about the current students, alumni, current players, club fund, club events all of these can be managed in this project. Here we can able to see the information about the players, which sports he/she likes to play or we can know about the event details organized by OKS.

Database Structure

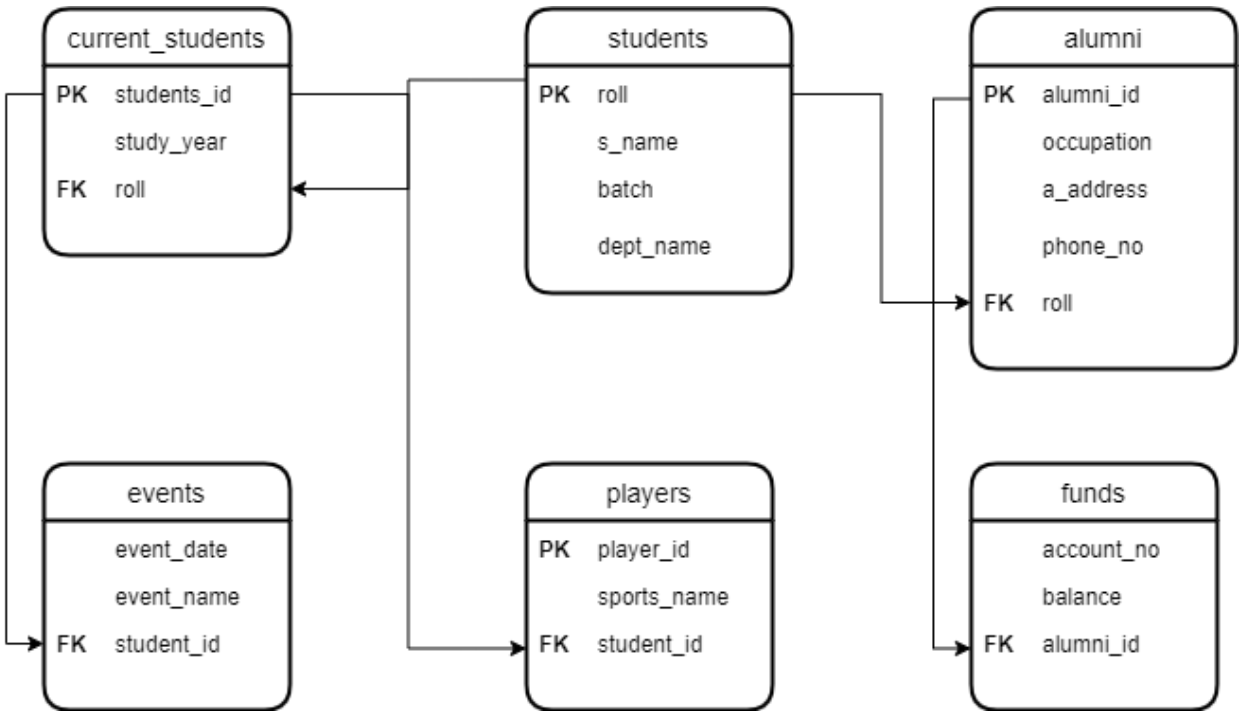
The database consists of six tables and they are students, current_students, alumni, funds, players, events.

Students table has one to one relationship with alumni and current_students table. Current_students table has one to many relationship with event and players table. Alumni table has one to many relationship with funds.

ER Diagram:


alumni_id
occupation
phone_no
alumni
member of
roll
dept_name
students
a_address
1
roll
batch
s_name
controls
belong to
account_no
balance
m
student_id
study_year
funds
current_students
alumni_id
roll
Manages
IS
events
players
event_date
event_name
student_id
sports_name
player_id
student_id

Schema Diagram:



Functionality

Some main functionality of this database project are given bellow.

1. Here one PL/SQL block that shows the information of events information with the respective players who participated on those events.

```
set serveroutput on
declare
    cursor event_cur is select event_date,student_id from events;
    event_record event_cur%Rowtype;
begin
    open event_cur;
       loop
          fetch event_cur into event_record;
          exit when event_cur%Rowcount>5;
          DBMS_OUTPUT.PUT_LINE ('Event Date:' || event_record.event_date || ' Student ID ' || event_record.student_id );
       end loop;
    close event_cur;
end;
/
```

2. By this procedure a user can input fund data on funds table:

```
CREATE OR REPLACE PROCEDURE add_fund (
  acc_no funds.account_no%TYPE,
  bal funds.balance%TYPE,
  almn_id funds.alumni_id%type
) IS
BEGIN
    INSERT INTO funds (account_no, balance, alumni_id)
    VALUES (acc_no,bal,almn_id);
    COMMIT;
END add_fund;
/
```

3. Here is one Trigger it will automatically set the batch of a student when we insert or update data on students table.

```
-- trigger
CREATE OR REPLACE TRIGGER add_btch BEFORE INSERT OR UPDATE ON
students
FOR EACH ROW
Declare
    ans varchar2(4);
    a varchar2(2) :='2K';
    b varchar2(2);
BEGIN
    b :=To_char(get_digit(:new.roll));
    ans :=a||b;
    :new.batch :=ans;
END;
/
SHOW ERRORS
select * from students;
commit;
insert into students (roll,s_name,dept_name) values(1807085,'Apon','CSE');
select * from students;
```

4. Here a PL/SQL block that will show the final balance of an account from funds table after calculating the interest.

```
set serveroutput on
declare
    tot_bal funds.balance%type;
    acc_no funds.account_no%type :='acc1';
    final_bal funds.balance%type;
begin
   select sum(balance) into tot_bal
   from funds
   where account_no =acc_no;

    IF tot_bal < 200  THEN
                final_bal := tot_bal;
    ELSIF tot_bal >= 200 and tot_bal <100   THEN
              final_bal :=  tot_bal + (tot_bal*0.25);
    ELSIF tot_bal >= 1000 and tot_bal <=2000 THEN
       final_bal :=  tot_bal + (tot_bal*0.4);
    ELSE
        final_bal :=  tot_bal + (tot_bal*0.5);
    END IF;
    DBMS_OUTPUT.PUT_LINE (acc_no || ' Total Balance: '||tot_bal||' Final Balance: '||ROUND(final_bal,2));
    EXCEPTION
         WHEN others THEN
          DBMS_OUTPUT.PUT_LINE (SQLERRM);
END;
/
```

Database Design Process

This database project is developed by ORACLE. I developed six new tables and inserted data from file.
I learned several important lessons through the design process. These include:

1) Designing tables is the most important step and must be done early in the project.

2) Building a database from scratch is often easier than revising an existing database– which is why initial design is so important and was stressed throughout the course!

Discussion & Conclusion

The project was a learning experience for us and allowed us to improve upon our SQL skills. From this we learn about database management system, SQL query, function procedure, trigger, cursor etc. that help us for future database development. We developed a database system for managing the information of Organization of KUET Sports.

Reference

https://www.w3schools.com/sql/