A Report

On the work done during 3rd semester subject

Database Management Systems

of

B.Tech. Computer Engineering

Database Design for competitive Programming Platform

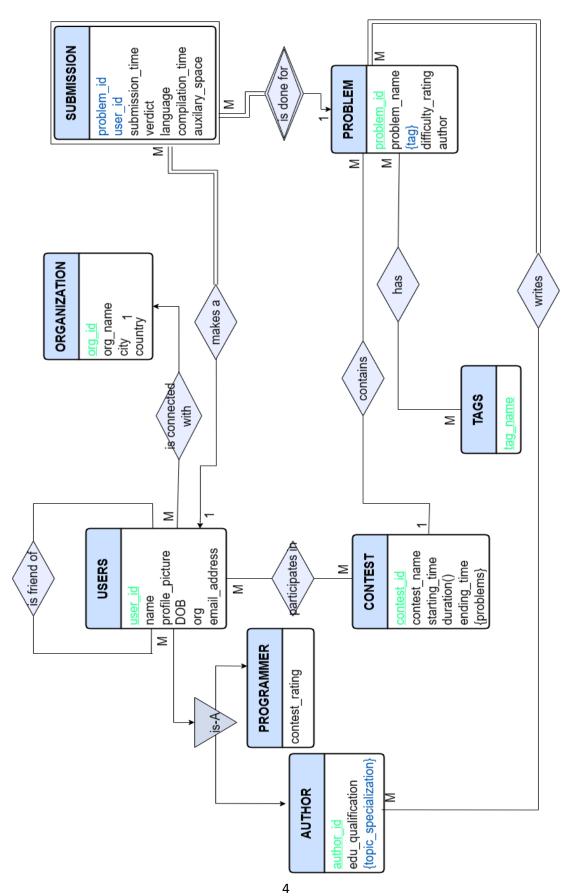|	
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Contents

Brief information about the system

ER Diagram

Schema

Normalization comments (optional)

CRUD Operations

```sql
create table users(
    user_id number primary key,
    name varchar2(25) not null,
    profile_picture_loc varchar2(100 char) default 'https://www.pngall.com/wp-
content/uploads/5/User-Profile-PNG.png',
    DOB date not null,
    org varchar2(28),
    email_addr varchar2(30) check(email_addr like '%@%.%') ) ;

create table author(
    author_id number primary key,
    user_id number references users(user_id),
    edu_qualification varchar2(28) );

create table programmer(
    user_id number references users(user_id),
    contest_rating number default 0 not null);

create table is_friend_of(
    friend1 number references users(user_id),
    friend2 number references users(user_id),
    check(not friend1 = friend2)) --relationship(recursive);

create table tags(
    tag_name varchar2(20) primary key)

create table organization(
        org_id number primary key,
    org_name varchar2(45) not null,
    city varchar2(30),
    country varchar2(16),
    user_id number references users(user_id));

create table contest(
    contest_id number primary key,
    contest_name varchar2(30) unique,
    start_time timestamp(2),
```

```sql
        end_time timestamp(2));
alter table contest add constraint time_constraint check(start_time < end_time);

create table participates_in(
        user_id number references users(user_id),
    contest_id number references contest(contest_id),
    constraints participation_pk primary key(user_id,contest_id));

create table problem(
    problem_id number primary key,
    problem_name varchar2(28) unique,
    difficulty_rating number not null check(difficulty_rating between 800 and 3500),
    author number references author(author_id),
    user_id number references users(user_id));
alter table contest add problem_id number references problem(problem_id);

create table has(
    problem_id number references problem(problem_id),
    tag_name varchar2(20) references tags(tag_name));

create table writes(
    author_id number references author(author_id),
    problem_id number references problem(problem_id));

create table submission(
    problem_id number references problem(problem_id),
    user_id number references users(user_id),
    submission_time timestamp(2) not null,
    verdict varchar(10) not null check(verdict in('passed','failed')),
    lang varchar(10) not null check(lang
in('Javascript','C','C++','Java','Python','Perl','Ruby','PHP','Kotlin','Rust','Haskell','C#','Go')),
    complilation_time decimal(5,5),
    auxilary_space decimal(5,5));

create table makes_a(
    user_id number references users(user_id),
    problem_id number references problem(problem_id),
    submission_id number primary key);
```

create table **is_done_for**(
    user_id number references users(user_id),
    problem_id number references problem(problem_id),
    submission_id number primary key);

References