Class: CC05

Group No: 7

1- Mai Hữu Nghĩa (2052612)

2- Trần Trí Đạt (2052443)

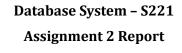
3- Triệu Phúc Nguyên (2011715)

4- Trần Trọng Nhân (2053288)

Please feel free to go to our online folder via the following

link or scan the QR code:

https://github.com/TravisMai/CO2013_DBS_HK221



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Content	Student	Note ²
	No.1	
PART 1: CREATE DATABASE (4p)		
I. Create table (2.5p)		
- Table 1-10	2	
- Table 11-18	1	
- Table 18-24	3	
- Table 20-24	4	
II. Insert (1.5p)		
- Table 2,3,5,15,16,17,18	1	
- Table 1,3,4,9,11,14,19,20	2	
- Table 2,6,7,8,13,18,19	3	
- Table 10,12,21,22,23,24	4	
PART 2: STORE PROCEDURE, FUNCTION, TRIGGER		
2.1.1	2	
- A trainee can participate 3 seasons at most (0.5p)	3	
- Cannot participate a season if had joined in a debut		
night (0.5p)		
2.1.2 Calculate the total number of votes of a group	1	
(derived attribute of table 19) (0.5 p)		
2.1.3 A trainee has at most:	2	

 $^{^1}$ Student(s) who do this task. Student No (1..4) is the same as group member in the top of page 1.

² For lecturer's use only

- 1 group stage in episode 2, 3, 4 (0.25 p)	4	
- 1 group stage and one individual stage in episode 5		
(0.25 p)		
2.2.1 Print list of trainees come to the next episode (or	1	
debut if input episode is debut night) (0.5p)		
	3	
2.2.2 Create a procedure/function to retrieve the result	2	
of a trainee in a season (0.5p)		
PART 3: BUILDING APPLICATIONS (3p)		
I. Create user (0.5p)	1	
	2	
II. Implement features		
2.1.1 Log in (0.25p)	1	
2.1.2 Log out (0.25p)	2	
2.2.1 Add information for a new trainee (0.5p)	1	
	2	
	3	
2.2.2 Search information of trainees by name (0.5p)	1	
	2	
	4	
2.2.3. View information of a trainee (0.5p)	1	
	2	
2.3.4. Retrieve result of a trainee in a season (0.5p)	1	
	2	
Bonus:	1	
- User interface is attractive and friendly (0.5p) - Building a data model (0.5p)	2	
		1

PART 1: CREATE DATABASE IN MARIADB (XAMPP)

I. Create table

1. Company (Cnumber, name, address, phone, Edate)

```
-- Company --
   CREATE Table Company (
        Cnumber char(4) not NULL primary key,
        Name text not NULL,
        CAddress text,
        Phone numeric(10) not NULL UNIQUE,
       Edate date
    );
-- Trigger check Company number --
    DELIMITER //
   CREATE OR REPLACE TRIGGER check CNumber
   AFTER INSERT ON company
    FOR EACH ROW
   BEGIN
        IF (new.Cnumber NOT RLIKE '[C][0-9][0-9][0-9]') THEN
            SIGNAL SQLSTATE '45000' SET
                    MESSAGE TEXT = 'Not correct Company Number';
       END IF;
   END;
    //
    DELIMITER ;
    DELIMITER //
   CREATE OR REPLACE TRIGGER check CNumber Update
    AFTER UPDATE ON company
    FOR EACH ROW
    BEGIN
        IF (new.Cnumber NOT RLIKE '[C][0-9][0-9][0-9]') THEN
            SIGNAL SQLSTATE '45000' SET
                    MESSAGE TEXT = 'Not correct Company Number';
       END IF;
   END;
    //
    DELIMITER ;
```

2. Person (SSN, Fname, Lname, address, phone)

```
-- Person --
   CREATE table Person(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        Fname text,
        Lname text,
        PAddress text,
        Phone numeric(10) not NULL UNIQUE
   );
  3. Trainee (SSN, DoB, photo, company_ID)
-- Trainee --
   CREATE table Trainee(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        DoB date,
        Photo varchar (2083),
        Company ID char(4),
        foreign key (Ssn) references Person(Ssn) on delete cascade,
        foreign key (Company ID) references Company (Cnumber) on delete
set null
   );
  4. MC (SSN)
-- MC --
   CREATE table MC(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        foreign key (Ssn) REFERENCES person(Ssn) on delete CASCADE
   );
  5. Mentor (SSN)
-- Mentor --
   CREATE table Mentor(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        foreign key (Ssn) references person(ssn) on delete CASCADE
    );
  song sequecing(num)
-- Table for auto increament --
        CREATE table song sequecing (
            Num INT NOT NULL AUTO INCREMENT PRIMARY KEY
        );
```

7. Song (<u>number</u>, released_year, name, singer_SSN_fist_performed)

```
-- Table for song --
        CREATE table Song(
            Number varchar(5) not NULL PRIMARY KEY,
            Released year year,
            Name text,
            Singer_SSN_first_performed numeric(12,0),
                 FOREIGN KEY (Singer_SSN_first_performed) references
Singer(Ssn) on DELETE set NULL
        );
-- Create a trigger for `Song` auto INCREMENT --
    DELIMITER //
   CREATE TRIGGER Song num insert
   BEFORE INSERT ON song
    FOR EACH ROW
    BEGIN
        INSERT INTO song sequecing VALUES (NULL);
        SET new.Number = CONCAT("S", LPAD(LAST INSERT ID(), 3, '0'));
   END;//
    DELIMITER ;
  8. ThemeSong (song ID)
-- Themesong --
    CREATE table ThemeSong(
        Song ID varchar(5) not NULL PRIMARY KEY,
        FOREIGN KEY (Song ID) references Song(number) on DELETE cascade
   );
  9. SongComposedBy (song_ID, composer_SSN)
-- SongComposedBy --
    CREATE table SongComposedBy(
        Song_ID varchar(5) not NULL,
        Composer_Ssn numeric(12,0) not NULL,
        primary key (Song_ID, Composer_Ssn),
        FOREIGN KEY (Song_ID) REFERENCES Song(number),
        FOREIGN KEY (Composer Ssn) references SongWriter(Ssn)
    );
```

```
10. Singer (SSN, guest_ID)
-- Singer --
    CREATE table Singer(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        Guest ID INT,
        FOREIGN KEY (Ssn) REFERENCES Mentor(Ssn),
        FOREIGN KEY (Guest_ID) references InvitedGuest(guest_ID)
    );
  11. SingerSignatureSong (SSN, song_name)
-- SingerSignatureSong --
    CREATE table SingerSignatureSong(
        Ssn numeric(12,0) not NULL PRIMARY KEY,
        Song name text,
        FOREIGN KEY (Ssn) REFERENCES Singer(Ssn)
    );
  12. Producer (SSN)
-- Producer --
    CREATE table Producer(
        Ssn numeric(12,0) NOT NULL PRIMARY KEY,
        FOREIGN KEY (Ssn) REFERENCES Mentor(Ssn) on DELETE cascade
    );
  13. ProducerProgram (SSN, Program_name)
-- ProducerProgram --
    CREATE table ProducerProgram(
        Ssn numeric (12,0) not null,
        Program name varchar(512),
        primary key (Ssn, Program name),
        foreign key (Ssn) references Producer (Ssn) on DELETE cascade
    );
  14. SongWriter (SSN)
-- SongWriter --
    CREATE table SongWriter(
        Ssn numeric (12,0) not null,
        primary key (Ssn),
        foreign key (Ssn) references Mentor(Ssn) on DELETE cascade
    );
```

15. Season (<u>year</u>, location, themesong_ID, MC_SSN)

```
-- Season --
    CREATE table Season(
        SYear year primary key,
        Location text,
        Themesong ID varchar(5),
        MC Ssn NUMERIC(12,0) not null,
         FOREIGN KEY (Themesong ID) REFERENCES ThemeSong(Song ID) on
delete set NULL,
        FOREIGN key (MC Ssn) REFERENCES MC(Ssn) on DELETE cascade
  16. SeasonMentor (year, SSN mentor)
-- SeasonMentor --
    CREATE TABLE SeasonMentor(
        Syear year not null,
        Ssn mentor NUMERIC(12,0) not null,
        PRIMARY KEY (Syear, Ssn mentor),
        FOREIGN KEY (Syear) REFERENCES Season(Syear) on delete cascade,
           FOREIGN KEY (Ssn_mentor) REFERENCES Mentor(Ssn) on delete
cascade
    );
  17. SeasonTrainee (year, SSN_trainee)
-- SeansonTrainee --
   CREATE TABLE SeasonTrainee (
        Syear year not NULL,
        Ssn trainee NUMERIC(12,0) not NULL,
        PRIMARY KEY (Syear, Ssn trainee),
        FOREIGN KEY (Syear) REFERENCES Season(Syear) on delete cascade,
        FOREIGN KEY (Ssn trainee) REFERENCES Trainee(Ssn) on delete
cascade
```

);

18. MentorValuateTrainee (year, SSN trainee, SSN mentor, score)

Primary KEY (Syear, Ep No),

```
-- MentorValuateTrainee --
   CREATE TABLE MentorValuateTrainee(
        Syear year not NULL,
        Ssn trainee NUMERIC(12,0) not null,
        Ssn mentor NUMERIC(12,0) not null,
        Score INT(3),
        CONSTRAINT CheckScore CHECK (Score>=0 and Score <=100),
        PRIMARY KEY (Syear, Ssn mentor, Ssn trainee),
        FOREIGN KEY (Syear) REFERENCES Season(Syear) on delete cascade,
           FOREIGN KEY(Ssn_trainee)REFERENCES Trainee(Ssn) on delete
cascade,
           FOREIGN KEY (Ssn mentor) REFERENCES Mentor(Ssn) on delete
cascade
   );
  19. Episode (year, No. name, datetime, duration)
-- Episode --
   CREATE TABLE Episode(
        Syear year not NULL,
        Ep No int(1) not NULL CHECK (Ep No>=1 and Ep no \leq=5),
        Name text,
        Datetime DATETIME,
        Duration int(3),
```

FOREIGN KEY (Syear) REFERENCES Season(Syear) on DELETE cascade

);

20. Stage (<u>year, ep_No, stage_No</u>, is_group, skill, total vote, song_ID)

```
-- Stage --

CREATE TABLE Stage(

Syear year not NULL,

Ep_No int(1) not NULL CHECK (Ep_No>=1 and Ep_no <=5),

Stage_No INT(3) NOT NULL,

Is_Group BOOLEAN NOT NULL, -- Yes: group, No: individual --

Skill int(1) default 4,

Total_Votes INT, -- Derived attribute --

Song_ID varchar(5) NOT NULL,

CONSTRAINT CheckSkill CHECK (Skill>=1 and Skill<=4),

PRIMARY KEY (Syear, ep_no, Stage_No),

FOREIGN KEY (Syear, Ep_No) REFERENCES Episode(Syear, Ep_no) on delete cascade,

FOREIGN KEY (Song_ID) REFERENCES Song(Number) on delete cascade
);
```

21. StageIncludeTrainee (year, ep_No, stage_No, SSN_trainee, role, no_of_votes)

```
-- StageIncludeTrSainee --
    CREATE TABLE StageIncludeTrainee(
        SYear year NOT NULL,
        Ep_No INT(1) NOT NULL,
        Stage_No INT(3) NOT NULL,
        Ssn trainee Numeric(12,0) NOT NULL,
        Role INT(1) NOT NULL DEFAULT 1,
            CHECK (Role>=1 and Role<=3),
        No of votes INT(3)
            CHECK (No of votes >= 0 AND No_of_votes <=500),
        PRIMARY KEY(SYear, Ep_No, Stage_No, Ssn_Trainee),
       FOREIGN KEY (SYear, Ep No, Stage No) references Stage (Syear,
Ep No, Stage no) on delete cascade,
        FOREIGN KEY (Ssn trainee) REFERENCES Trainee(SsN) on delete
cascade
    );
```

22. InvitedGuest (guest ID)

```
-- InvitedGuest --
    CREATE TABLE InvitedGuest (
        Guest ID INT NOT NULL AUTO INCREMENT PRIMARY KEY
    );
  23. GGroup (Gname, no_of_member, guest_ID)
-- GGroup --
    CREATE TABLE GGroup (
        Gname VARCHAR (100) NOT NULL PRIMARY KEY,
        No of member INT(2)
            CHECK (No of member \geq= 1 AND No of member \leq=20),
        Guest ID INT NOT NULL,
         FOREIGN KEY (Guest ID) references InvitedGuest(Guest ID) ON
DELETE CASCADE
    );
  24. GroupSignatureSong (Gname, song_name)
-- GroupSignatureSong --
    CREATE TABLE GroupSignatureSong(
        Gname VARCHAR(100) NOT NULL,
        Song name VARCHAR (100) NOT NULL,
        PRIMARY KEY (Gname, Song name),
        FOREIGN KEY (Gname) References GGroup(Gname) ON DELETE CASCADE
    );
  25. GuestSupportStage (guest_ID, <u>year, ep_No, stage_No)</u>
-- GuestSupportStage --
    CREATE TABLE GuestSupportStage(
        Guest ID INT NOT NULL,
        Syear year not nULL,
        Ep_No INT(1) NOT NULL,
        Stage_No INT(3) NOT NULL,
        PRIMARY KEY (SYear, Ep_No, Stage_No),
         FOREIGN KEY (Guest ID) REFERENCES InvitedGuest (Guest ID) ON
DELETE CASCADE,
        FOREIGN KEY (Syear, Ep No, Stage No) REFERENCES Stage (Syear,
Ep No, Stage No) ON DELETE CASCADE
    );
```

II. Insert

Insert data for all tables in the database.

Requirements: The data in the tables must be meaningful, and each table has at least 4 rows (except table 14 – at least 2 rows).

```
table 14 - at least 2 rows).
-- Company --
     INSERT INTO COMPANY VALUES
("C100", "Ghost", "Dien
                                            Phu
                                                                        District
                                                                                         10,
                               Bien
                                                        Street,
HCMC", 08361869275, '1992-08-19'),
("C101", "Ancient", "Nguyen
                                                                  District
                                 Van
                                          Khoi
                                                    Street,
                                                                                Go
                                                                                        Vap,
HCMC",01285102784,'1978-03-24'),
("C102", "Deviant", "Ly
                                                       Street,
                                                                        District
                                                                                         10,
                                             Τo
HCMC", 09768256719, '1984-06-13'),
("C103", "Asgard", "Bui
                                                                        District
                                           Xuan
                                                         Street,
                                                                                          1,
HCMC",03958269132,'2000-11-05');
     -- Person --
    INSERT INTO Person VALUES
    (111120180001, "Johnny", "Dang", "Dong Van Cong Street, District 2, HCMC", 0354887693),
    (111120180002, "Luon", "Vuituoi", "Cong Quynh Street, District 1, HCMC", 0354887694),
    (111120180003, "Leo", "Nguyen", "Ly Thuong Kiet Street, District 10, HCMC", 0354887695),
    (111120180004, "Daniel", "Wellington", "Ky Con Street, District 1, HCMC", 0354887696),
(111120180005, "Julliet", "Johnson", "Tran Hung Dao Street, District 1, HCMC", 0354887697),
    (111120180006, "Romeo", "Smith", "Tran Dinh Xu Street, District 1, HCMC", 0354887698),
    (111120180007, "Walter", "White", "Le Loi Street, District 1, HCMC", 0354887699),
    (111120180008, "Don", "Brown", "Nguyen Hue Street, District 1, HCMC", 0354887700),
    (111120180009, "Boba", "Green", "Tran Hung Dao Street, District 5, HCMC", 0354887701),
    (111120180010, "Samael", "Morning", "Ho Hao Hon Street, District 1, HCMC", 0354887702),
    (111120180011, "Lucifer", "Morningstar", "Le Lai Street, District 1, HCMC", 0354887703),
    (111120180012, "Don", "Chisao", "Nguyen Du Street, District 1, HCMC", 0354887704),
    (111120180013, "Tom", "Vecna", "Tran Hung Dao Street, District 1, HCMC", 0354887705),
(111120180014, "Jerry", "Peterson", "Tran Dinh Xu Street, District 1, HCMC", 0354887706),
    (111120180015, "Sam", "Waltersom", "Le Loi Street, District 1, HCMC", 0354887707),
    (111120180016, "Ching", "Sunat", "Nguyen Hue Street, District 1, HCMC", 0354887708),
    (111120180017, "Sinat", "San", "Tran Hung Dao Street, District 5, HCMC", 0354887709),
    (111120180018, "Mohamale", "Christ", "Ho Hao Hon Street, District 1, HCMC", 0354887710),
    (111120180019, "John", "Smith", "Le Lai Street, District 1, HCMC", 0354887711),
    (111120180020, "Dat", "Tran", "Nguyen Du Street, District 1, HCMC", 0354887712),
    (111120180021, "Khoa", "Nguyen", "Dong Van Cong Street, District 2, HCMC", 0354887713),
    (111120180022, "Minh", "Tran", "Cong Quynh Street, District 1, HCMC", 0354887714),
```

(111120180023, "Thien", "Ly", "Ly Thuong Kiet Street, District 10, HCMC", 0354887715),

(111120180025, "Nghia", "Dinh", "Tran Hung Dao Street, District 1, HCMC", 0354887717), (111120180026, "Hao", "Mai", "Tran Dinh Xu Street, District 1, HCMC", 0354887718),

(111120180024, "Nguyen", "Le", "Ky Con Street, District 1, HCMC", 0354887716),

```
(111120180027, "Ron", "Wesley", "Le Loi Street, District 1, HCMC", 0354887719),
    (111120180028, "Emma", "Watson", "Nguyen Hue Street, District 1, HCMC", 0354887720),
    (111120180029, "Harry", "Stone", "Tran Hung Dao Street, District 5, HCMC", 0354887721),
    (111120180030, "Charles", "Tree", "Ho Hao Hon Street, District 1, HCMC", 0354887722),
    (111120180031, "Sam", "Leaf", "Dong Van Cong Street, District 2, HCMC", 0354888822),
    (111120180032, "Ching", "Ly", "Cong Quynh Street, District 1, HCMC", 0354888823),
    (111120180033, "Sinat", "Pham", "Ly Thuong Kiet Street, District 10, HCMC", 0354888824),
    (111120180034, "Mohamale", "John", "Ky Con Street, District 1, HCMC", 0354888825),
    (111120180035, "John", "Robert", "Tran Hung Dao Street, District 1, HCMC", 0354888826),
    (111120180036, "Dat", "Michael", "Tran Dinh Xu Street, District 1, HCMC", 0354888827),
    (111120180037, "Khoa", "William", "Le Loi Street, District 1, HCMC", 0354888828),
    (111120180038, "Minh", "David", "Ly Thuong Kiet Street, District 10, HCMC", 0354888829),
    (111120180039, "Thien", "Richard", "Ky Con Street, District 1, HCMC", 0354888830),
(111120180040, "Nguyen", "Joseph", "Tran Hung Dao Street, District 1, HCMC", 0354888831),
    (111120190001, "Ella", "Ice", "Le Lai Street, District 1, HCMC", 0354887723),
(111120190002, "Ellizabeth", "Queenie", "Nguyen Du Street, District 1, HCMC", 0354887724),
    (111120190003, "Jane", "Root", "Tran Hung Dao Street, District 1, HCMC", 0354887725),
    (111120190004, "Ngan", "Roof", "Tran Dinh Xu Street, District 1, HCMC", 0354887726),
    (111120190005, "Thuy", "Phan", "Le Loi Street, District 1, HCMC", 0354887727),
    (111120190006, "Duy", "Tham", "Nguyen Hue Street, District 1, HCMC", 0354887728),
    (111120190007, "Tri", "Leaf", "Tran Hung Dao Street, District 5, HCMC", 0354887729),
    (111120190008, "Hieu", "Ly", "Ho Hao Hon Street, District 1, HCMC", 0354887730),
    (111120190009, "Hoa", "Pham", "Le Lai Street, District 1, HCMC", 0354887731),
    (111120190010, "Teo", "John", "Dong Van Cong Street, District 2, HCMC", 0354887732),
    (111120190011, "Ti", "Robert", "Cong Quynh Street, District 1, HCMC", 0354887733),
(111120190012, "Tan", "Michael", "Ly Thuong Kiet Street, District 10, HCMC", 0354887734),
    (111120190013, "Tai", "William", "Ky Con Street, District 1, HCMC", 0354887735),
    (111120190014, "Chuong", "David", "Tran Hung Dao Street, District 1, HCMC", 0354887736),
    (111120190015, "Vy", "Richard", "Tran Dinh Xu Street, District 1, HCMC", 0354887737),
    (111120190016, "Nam", "Joseph", "Le Loi Street, District 1, HCMC", 0354887738),
    (111120190017, "Quan", "Charles", "Nguyen Hue Street, District 1, HCMC", 0354887739),
    (111120190018, "Sang", "Thomas", "Tran Hung Dao Street, District 5, HCMC", 0354887740),
    (111120190019, "Chieu", "Ti", "Ho Hao Hon Street, District 1, HCMC", 0354887741),
    (111120190020, "Toi", "Tan", "Le Lai Street, District 1, HCMC", 0354887742),
    (111120190021, "Khuya", "Tai", "Nguyen Du Street, District 1, HCMC", 0354887743),
    (111120190022, "Jacob", "Chuong", "Tran Hung Dao Street, District 1, HCMC", 0354887744),
    (111120190023, "Oliver", "Jake", "Tran Dinh Xu Street, District 1, HCMC", 0354887745),
    (111120190024, "John", "Jack", "Le Loi Street, District 1, HCMC", 0354887746),
    (111120190025, "Robert", "Harry", "Nguyen Hue Street, District 1, HCMC", 0354887747),
(111120190026, "Michael", "Jacob", "Tran Hung Dao Street, District 5, HCMC", 0354887748),
    (111120190027, "William", "Charlie", "Ho Hao Hon Street, District 1, HCMC", 0354887749),
    (111120190028, "David", "Thomas", "Le Lai Street, District 1, HCMC", 0354887750),
    (111120190029, "Richard", "George", "Nguyen Du Street, District 1, HCMC", 0354887751),
    (111120190030, "Joseph", "Oscar", "Dong Van Cong Street, District 2, HCMC", 0354887752),
    (111120190031, "Oliver", "Jake", "Ho Hao Hon Street, District 1, HCMC", 0354888853),
    (111120190032, "John", "Jack", "Le Loi Street, District 1, HCMC", 0354888854),
```

```
(111120190033, "Robert", "Harry", "Tran Hung Dao Street, District 1, HCMC", 0354888855),
   (111120190034, "Michael", "Jacob", "Tran Dinh Xu Street, District 1, HCMC", 0354888856),
   (111120190035, "Ti", "Charlie", "Le Loi Street, District 1, HCMC", 0354888857),
   (111120190036, "Tan", "Thomas", "Nguyen Hue Street, District 1, HCMC", 0354888858),
   (111120190037, "Tai", "George", "Tran Dinh Xu Street, District 1, HCMC", 0354888859),
   (111120190038, "Charles", "Chieu", "Le Loi Street, District 1, HCMC", 0354888860),
   (111120190039, "Thomas", "Toi", "Nguyen Hue Street, District 1, HCMC", 0354888861),
   (111120190040, "Ti", "Khuya", "Le Lai Street, District 1, HCMC", 0354888862),
   (222220180001, "Charles", "James", "Cong Quynh Street, District 1, HCMC", 0354887753),
(222220180002, "Thomas", "William", "Ly Thuong Kiet Street, District 10, HCMC", 0354887754),
   (222220180003, "Margaret", "Emma", "Le Lai Street, District 1, HCMC", 0354887755),
   (222220180004, "Olivia", "Samantha", "Nguyen Du Street, District 1, HCMC", 0354887756),
   (222220190001, "Isla", "Bethany", "Tran Hung Dao Street, District 1, HCMC", 0354887757),
(222220190002, "Emily", "Elizabeth", "Tran Dinh Xu Street, District 1, HCMC", 0354887758),
   (222220190003, "Poppy", "Joanne", "Le Loi Street, District 1, HCMC", 0354887759),
   (222220190004, "Ava", "Megan", "Nguyen Hue Street, District 1, HCMC", 0354887760),
(333320180001, "Patricia", "Elizabeth", "Tran
                                            Hung
                                                    Dao
                                                           Street,
                                                                      District
                                                                                  5,
HCMC", 0354887761),
   (333320190001, "Jennifer", "Linda", "Ho Hao Hon Street, District 1, HCMC", 0354887762);
    -- Trainee --
    INSERT INTO Trainee VALUES
    (111120180001, '1998-02-11', "uploads/sheaf-of-rice.png", "C100"),
    (111120180002, '1999-10-23', "uploads/sheaf-of-rice.png", "C101"),
    (111120180003, '1985-05-07', "uploads/sheaf-of-rice.png", "C102"),
    (111120180004, '2002-10-07', "uploads/sheaf-of-rice.png", "C103"),
    (111120180005, '1997-02-11', "uploads/sheaf-of-rice.png", "NULL"),
    (111120180006, '1996-03-12', "uploads/sheaf-of-rice.png", "C100"),
    (111120180007, '1995-04-11', "uploads/sheaf-of-rice.png", "C101"),
    (111120180008, '1994-05-10', "uploads/sheaf-of-rice.png", "C102"),
    (111120180009, '1993-06-08', "uploads/sheaf-of-rice.png", "C103"),
    (111120180010, '1992-07-07', "uploads/sheaf-of-rice.png", "NULL"),
    (111120180011, '1991-08-06', "uploads/sheaf-of-rice.png", "C100"),
    (111120180012, '1990-09-04', "uploads/sheaf-of-rice.png", "C101"),
    (111120180013, '1989-10-03', "uploads/sheaf-of-rice.png", "C102"),
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    INSERT INTO MC VALUES
    (333320180001), (333320190001), (111120180022), (111120180023);
    -- Mentor --
    INSERT INTO Mentor VALUES
    (222220180001), (222220180002), (222220180003), (222220180004),
    (222220190001), (222220190002), (222220190003), (222220190004);
    -- Song --
    INSERT INTO Song (Released year, Name, Singer SSN first performed )
VALUES
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(2018, 'Themesong 2018', NULL), (2019, 'Themesong 2019', NULL),
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    (1999, 'Unstoppable', NULL), (2000, 'Data', NULL),
    (2001, 'Sensitive', NULL), (2002, 'Happy birthday to you', NULL);
    -- Themesong --
    INSERT INTO ThemeSong VALUES ('S001'), ('S002');
    -- SongComposedBy --
    INSERT INTO SongComposedBy VALUES
    ('S001',222220190001),('S002',222220190002),('S003',222220190003),
    ('S004',222220190001),('S005',222220190002),('S006',222220190003);
    -- Singer --
INSERT INTO Singer VALUES(222220180001,1),(222220180002,2),(222220180003,NULL);
    -- SingerSignatureSong --
    INSERT INTO SingerSignatureSong VALUES
    (222220180001, 'Hello'), (222220180002, 'I believe I can fly'),
    (222220180003, 'The Earth');
    -- Producer --
    INSERT INTO Producer VALUES(222220180004), (222220190004);
    -- ProducerProgram --
    INSERT INTO ProducerProgram VALUES
    (222220180004, 'LoveYou3000'), (222220180004, 'Dark Pictures'),
    (222220190004, 'Mementos'), (222220190004, 'Persona');
    -- SongWriter --
    INSERT INTO SongWriter VALUES
    (222220190001), (222220190002), (222220190003);
    -- Season --
    INSERT INTO Season VALUES
(2018, 'Hanoi', 'S001', 333320180001), (2019, 'HCMC', 'S002', 333320190001);
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-- MentorValuateTrainee --
INSERT INTO MentorValuateTrainee VALUES
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   -- -- StageIncludeTrainee --
   INSERT INTO StageIncludeTrainee VALUES
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Practice: Database system – S221

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('2019',5,961,111120190033,1,NULL);
   -- InvitedGuest --
   INSERT INTO InvitedGuest VALUES (1), (2), (3), (4), (5), (6), (7), (8);
   -- Group --
   INSERT INTO GGroup VALUES
    ('MenInBlack',5,5),('Beatles',6,6),('Walkers',4,7),('Cters',5,8);
   -- GroupSignatureSong --
   INSERT INTO GroupSignatureSong VALUES
    ('MenInBlack', 'See You Again'), ('Beatles', 'Hello'),
    ('Walkers', 'Faded'), ('Cters', 'Despacito');
   -- GuestSupportStage --
   INSERT INTO GuestSupportStage VALUES
    (2,2018,4,841),(4,2018,4,842),(6,2018,4,843),(8,2018,4,844),
    (1,2019,4,941),(3,2019,4,942),(5,2019,4,943),(7,2019,4,944);
```

PART 2: STORE PROCEDURE, FUNCTION, TRIGGER (3 points)

I. Trigger

1.1 Trigger to check a trainee can participate 3 seasons at most

```
a. Create trigger
-- 1. Trigger to check constraint --
    -- a. Trainee can participate 3 seasons at most --
    DELIMITER //
    CREATE OR REPLACE TRIGGER at most three season
    AFTER INSERT ON seasontrainee
    FOR EACH ROW
    BEGIN
        DECLARE Total year int;
           SELECT count(s.Syear) INTO Total year FROM seasontrainee s
WHERE s.Ssn_trainee = new.Ssn_trainee GROUP BY s.Ssn trainee;
        IF (Total_year > 3) THEN
            SIGNAL SQLSTATE '45000' SET
                    MESSAGE TEXT = 'Max 3 season';
        END IF;
    END;
    //
    DELIMITER ;
    DELIMITER //
    CREATE OR REPLACE TRIGGER at most three season update
    AFTER UPDATE ON seasontrainee
    FOR EACH ROW
    BEGIN
        DECLARE Total year int;
           SELECT count(s.Syear) INTO Total year FROM seasontrainee s
WHERE s.Ssn_trainee = new.Ssn_trainee GROUP BY s.Ssn_trainee;
        IF (Total year > 3) THEN
            SIGNAL SQLSTATE '45000' SET
                    MESSAGE_TEXT = 'Max 3 season';
        END IF;
    END;
    //
```

DELIMITER ;

b. Test trigger

b1. Insert

First, we insert two more seasons: 2020 and 2021 in "season" table.

Suppose that we choose the trainee with SSN = 111120180005 taking part in season 2018.

Run these statements below (Choose SSN of trainee who did not participate in the debut night of previous season).

```
INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES
('2019', '111120180005')
```

```
✓ 1 row inserted.

INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2019', '111120180005');

INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2020', '111120180005'))

✓ 1 row inserted.

INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2020', '111120180005');
```

```
INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES
('2021', '111120180005')
```

Since the trainee has joined 3 season, the error textbox is shown below:

Error

```
SQL query: Copy @ Edit
```

```
INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2021', '111120180005')
```


#1644 - Max 3 season

1.2 Trigger to check a trainee success to join in a debut night, then he/she cannot register as a trainee of later seasons

a. Create trigger -- b. If a trainee success to join in a debut night, then he/she cannot register as a trainee of later seasons --DELIMITER // CREATE OR REPLACE TRIGGER join_debut_night AFTER INSERT ON seasontrainee FOR EACH ROW BEGIN DECLARE Debut season year; DECLARE errorMessage text; SELECT s.SYear INTO Debut season FROM stageincludetrainee s WHERE s.Ep No = 5 and s.Ssn trainee = new.Ssn trainee ORDER BY s.SYear DESC LIMIT 1; IF (debut_season IS NOT NULL) THEN IF (new.Syear > debut_season) THEN SET errorMessage = concat("Joined debut night on ", debut season); SIGNAL SQLSTATE '45000' SET MESSAGE TEXT = errorMessage; END IF; END IF; END; // DELIMITER ; DELIMITER // CREATE OR REPLACE TRIGGER join debut night update AFTER UPDATE ON seasontrainee FOR EACH ROW BEGIN DECLARE Debut season year;

```
DECLARE errorMessage text;
        SELECT s.SYear INTO Debut season FROM stageincludetrainee s
        WHERE s.Ep No = 5 and s.Ssn trainee = new.Ssn trainee
        ORDER BY s.SYear DESC
        LIMIT 1;
        IF (debut season IS NOT NULL) THEN
            IF (new.Syear > debut season) THEN
                   SET errorMessage = concat("Joined debut night on ",
debut season);
                SIGNAL SQLSTATE '45000' SET
                    MESSAGE TEXT = errorMessage;
            END IF;
        END IF;
    END;
    //
    DELIMITER ;
  b. Test trigger
     b1. Insert
     INSERT INTO `seasontrainee` (`Syear`, `Ssn trainee`) VALUES
     ('2019', '111120180001')
```

This trainee has joined in the debut night, Episode 5 of Season 2018, then he/she cannot register as a trainee in Season 2019.

```
Error

SQL query: Copy.  Edit

INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2019', '111120180001')

MySQL said:  
#1644 - Joined debut night on 2018
```

```
INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES
('2019', '111120180020');
```

Since he/she did not take part in debut night of Season 2018, the insert statement is accepted:

```
✓ 1 row inserted.

INSERT INTO `seasontrainee` (`Syear`, `Ssn_trainee`) VALUES ('2019', '111120180020');
```

b2. Update

Suppose we update the Season year 2018 to 2019 of the trainee whose SSN = 111120180002

```
UPDATE `seasontrainee` SET `Syear` = '2019'
WHERE `seasontrainee`.`Syear` = 2018
AND CONCAT(`seasontrainee`.`Ssn trainee`) = '111120180002'
```

Because he/she participated in debut night of Season 2018, we cannot update the value to other seasons.

```
Error

SQL query: Copy

UPDATE `seasontrainee` SET `Syear` = '2019'
WHERE `seasontrainee`.`Syear` = 2018
AND CONCAT(`seasontrainee`.`Ssn_trainee`) = '111120180002';

MySQL said: 

#1644 - Joined debut night on 2018
```

We can update Season of trainee that did not join in debut night of any seasons:

```
UPDATE `seasontrainee` SET `Syear` = '2019'
WHERE `seasontrainee`.`Syear` = 2018
AND CONCAT(`seasontrainee`.`Ssn_trainee`) = '111120180005';
```

```
I row affected. (Query took 0.0116 seconds.)

UPDATE `seasontrainee` SET `Syear` = '2019' WHERE `seasontrainee`.`Syear` = 2018
AND CONCAT(`seasontrainee`.`Ssn_trainee`) = '111120180005';

[Edit inline][Edit][Create PHP code]
```

2. Trigger to calculate the total number of votes of a group (derived attribute of table 19) when number of votes of a member (no_of_votes of table 20) is updated

a. Create trigger -- 2. Write trigger to calculate the total number of votes of a group (derived attribute of table 19) ---- when number of votes of a member (no of votes of table 20) is updated --DELIMITER // CREATE OR REPLACE TRIGGER Update total vote AFTER UPDATE ON stageincludetrainee FOR EACH ROW BEGIN DECLARE different int; SET different = new.No_of_votes - old.No_of_votes; UPDATE stage s SET s.Total Votes = s.Total Votes + different WHERE (s.Syear, s.Ep No, s.Stage No) = (new.Syear, new.Ep_no, new.Stage No); END; // DELIMITER ; DELIMITER // CREATE OR REPLACE TRIGGER Insert total vote AFTER INSERT ON stageincludetrainee FOR EACH ROW BEGIN DECLARE new vote int; SET new_vote = new.No_of_votes; UPDATE stage s SET s.Total Votes = s.Total Votes + new vote WHERE (s.Syear,s.Ep No,s.Stage_No) = (new.Syear, new.Ep_no, new.Stage_No); END;

```
//
    DELIMITER ;
    DELIMITER //
    CREATE OR REPLACE TRIGGER Delete_total_vote
   AFTER DELETE ON stageincludetrainee
    FOR EACH ROW
   BEGIN
        DECLARE old_vote int;
        SET old_vote = old.No_of_votes;
        UPDATE stage s
        SET s.Total_Votes = s.Total_Votes - old_vote
           WHERE (s.Syear, s.Ep_No, s.Stage_No) = (old.Syear, old.Ep_no,
old.Stage No);
   END;
    //
    DELIMITER ;
```

b. Test trigger

b1. Update: The table below shows the total votes of Group who participated in 2018, Episode 2, Stage_No 821 is 1343 in "Stage" table

Syear	Ep_No	Stage_No	Is_Group	Skill	Total_Votes	Song_ID
2018	1	801	0	4	NULL	S001
2018	2	821	1	1	1343	S003
2018	2	822	1	1	465	S004

Now, in "stageincludetrainee" table, we update the value of the vote where SYear = 2018,

Ep_No = 2, Stage_No = 821 and Ssn_trainee = 111120180003 to 50

```
UPDATE `stageincludetrainee` SET `No_of_votes` = '50'
WHERE `stageincludetrainee`.`SYear` = 2018
AND `stageincludetrainee`.`Ep_No` = 2
AND `stageincludetrainee`.`Stage_No` = 821
AND CONCAT(`stageincludetrainee`.`Ssn_trainee`) = '111120180003';
After updating, the total votes in "Stage" table has changed from 1343 to 1392
```

Practice: Database system – S221

Syear	Ep_No	Stage_No	Is_Group	Skill	Total_Votes	Song_ID
2018	1	801	0	4	NULL	S001
2018	2	821	1	1	1392	S003
2018	2	822	1	1	465	S004

b2. Delete

Next, we delete the tuple of Ssn_trainee = 111120180003 in "stageincludetrainee" table

DELETE FROM stageincludetrainee

WHERE `stageincludetrainee`.`SYear` = 2018

AND `stageincludetrainee`.`Ep No` = 2

AND `stageincludetrainee`.`Stage No` = 821

AND CONCAT(`stageincludetrainee`.`Ssn_trainee`) = '111120180003'

As a result, the total votes has changed from 1392 to 1342 in "stage" table

Syear	Ep_No	Stage_No	Is_Group	Skill	Total_Votes	Song_ID
2018	1	801	0	4	NULL	S001
2018	2	821	1	1	1342	S003
2018	2	822	1	1	465	S004

b3. Insert

Lastly, we insert the tuple of $Ssn_{trainee} = 111120180003$ with total_votes = 126 in "stageincludetrainee" table

The total_votes has changed from 1342 to 1468 in "stage" table

Syear	Ep_No	Stage_No	ls_Group	Skill	Total_Votes	Song_ID
2018	1	801	0	4	NULL	S001
2018	2	821	1	1	1468	S003
2018	2	822	1	1	465	S004

3.1 Trigger to ensure that a trainee has at most one group stage in episode 2, 3, 4

```
a. Create trigger
-- 3. Write trigger to ensure that a trainee has: --
  -- a. at most one group stage in episode 2, 3, 4 --
  DELIMITER //
  CREATE OR REPLACE TRIGGER group stage check
  AFTER INSERT ON stageincludetrainee
  FOR EACH ROW
  BEGIN
    DECLARE group stage joined int(3);
    DECLARE errorMessage text;
    SELECT count(sit.Stage No) INTO group stage joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep No, sit.Stage No) = (s.Syear, s.Ep No, s.Stage No)
     WHERE sit.Syear = new.Syear AND sit.Ep No = new.Ep No AND new.Ep no != 1 AND new.Ep no
!= 5 AND s.Is Group = 1 AND sit.Ssn trainee = new.Ssn trainee;
    IF (group stage joined > 1) THEN
      SET errorMessage = concat(new.Ssn trainee, "already joined a group stage");
      SIGNAL SQLSTATE '45000' SET
           MESSAGE TEXT = errorMessage;
    END IF;
  END;
  //
  DELIMITER;
  DELIMITER //
  CREATE OR REPLACE TRIGGER group stage check update
  AFTER UPDATE ON stageincludetrainee
  FOR EACH ROW
  BEGIN
    DECLARE group_stage_joined int(3);
    DECLARE errorMessage text;
    SELECT count(sit.Stage No) INTO group stage joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep_No, sit.Stage_No) = (s.Syear, s.Ep_No, s.Stage_No)
     WHERE sit.Syear = new.Syear AND sit.Ep No = new.Ep No AND new.Ep no != 1 AND new.Ep no
!= 5 AND s.Is Group = 1 AND sit.Ssn trainee = new.Ssn trainee;
```

result:

```
IF (group stage joined > 1) THEN
    SET errorMessage = concat(new.Ssn trainee, "already joined a group stage");
    SIGNAL SQLSTATE '45000' SET
        MESSAGE_TEXT = errorMessage;
  END IF;
END;
//
DELIMITER;
 b. Test trigger
    b1. Insert
    Assume that we choose the trainee with SSN = 111120180010 and Stage_No = 822.
    Now we insert one more tuple of this trainee with Stage_No = 823.
    INSERT INTO `stageincludetrainee` (`SYear`, `Ep No`, `Stage No`,
    `Ssn trainee`, `Role`, `No of votes`) VALUES ('2018', '2', '823',
    '111120180010', '1', '47')
    As he has joined the group stage whose Stage_No = 822, the error will occur and we get the
```

Error SQL query: Copy INSERT INTO `stageincludetrainee` (`SYear`, `Ep_No`, `Stage_No`, `Ssn_trainee`, `Role`, `No_ MySQL said: #1644 - 111120180010 already joined a group stage

```
b2. Update
```

We can change the value of Stage_No of any trainees since he/she can only join 1 group stage.

```
UPDATE `stageincludetrainee` SET `Stage_No` = '823'
WHERE `stageincludetrainee`.`SYear` = 2018
AND `stageincludetrainee`.`Ep_No` = 2
AND `stageincludetrainee`.`Stage_No` = 822
AND CONCAT(`stageincludetrainee`.`Ssn_trainee`) = '111120180010'
```

```
UPDATE `stageincludetrainee` SET `Stage_No` = '823' WHERE

`stageincludetrainee`.`SYear` = 2018 AND `stageincludetrainee`.`Ep_No` = 2 AND

`stageincludetrainee`.`Stage_No` = 822 AND

CONCAT(`stageincludetrainee`.`Ssn_trainee`) = '111120180010';

[Edit inline][Edit][Create PHP code]
```

a. Create trigger

3.2 Trigger to ensure that a trainee has at most one group stage and one individual stage in episode 5

```
-- b. at most one group stage and one individual stage in episode 5 --
  DELIMITER //
  CREATE OR REPLACE TRIGGER stage five check
  AFTER INSERT ON stageincludetrainee
  FOR EACH ROW
  BEGIN
    DECLARE group stage joined int(3);
    DECLARE indi stage joined int(3);
    SELECT count(sit.Stage No) INTO group stage joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep No, sit.Stage No) = (s.Syear, s.Ep No, s.Stage No)
       WHERE sit.Syear = new.Syear AND sit.Ep no = 5 AND s.Is Group = 1 AND sit.Ssn trainee =
new.Ssn trainee;
    SELECT count(sit.Stage No) INTO indi stage joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep No, sit.Stage No) = (s.Syear, s.Ep No, s.Stage No)
       WHERE sit.Syear = new.Syear AND sit.Ep_no = 5 AND s.Is_Group = 0 AND sit.Ssn trainee =
new.Ssn trainee;
    IF (group stage joined > 1) THEN
      SIGNAL SQLSTATE '45000' SET
           MESSAGE TEXT = "Already joined a group stage";
    END IF;
    IF (indi stage joined > 1) THEN
      SIGNAL SQLSTATE '45000' SET
           MESSAGE TEXT = "Already joined a individual stage";
    END IF;
  END;
```

```
//
  DELIMITER;
  DELIMITER //
  CREATE OR REPLACE TRIGGER stage_five_check_update
  AFTER UPDATE ON stageincludetrainee
  FOR EACH ROW
  BEGIN
    DECLARE group_stage_joined int(3);
    DECLARE indi stage joined int(3);
    SELECT count(sit.Stage_No) INTO group_stage_joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep No, sit.Stage No) = (s.Syear, s.Ep No, s.Stage No)
       WHERE sit.Syear = new.Syear AND sit.Ep no = 5 AND s.Is Group = 1 AND sit.Ssn trainee =
new.Ssn trainee;
    SELECT count(sit.Stage No) INTO indi stage joined
    FROM stageincludetrainee sit join stage s
    ON (sit.SYear, sit.Ep No, sit.Stage No) = (s.Syear, s.Ep No, s.Stage No)
       WHERE sit.Syear = new.Syear AND sit.Ep_no = 5 AND s.Is_Group = 0 AND sit.Ssn_trainee =
new.Ssn trainee;
    IF (group_stage_joined > 1) THEN
      SIGNAL SQLSTATE '45000' SET
           MESSAGE TEXT = "Already joined a group stage";
    END IF;
    IF (indi stage joined > 1) THEN
      SIGNAL SQLSTATE '45000' SET
           MESSAGE_TEXT = "Already joined a individual stage";
    END IF;
  END;
  //
  DELIMITER;
```

b. Test trigger

Error

SQL query: Copy

INSERT INTO `stageincludetrainee` (`SYear`, `Ep_No`, `Stage_No`, `Ssn_trainee`, `Role`, `No_

MySQL said: (a)

#1644 - Already joined a individual stage

Error

SQL query: Copy

INSERT INTO `stageincludetrainee` (`SYear`, `Ep_No`, `Stage_No`, `Ssn_trainee`, `Role`, `No_

MySQL said: (a)

#1644 - Already joined a group stage

II. Store Procedure/Function

- 1. Procedure/function to print list of trainees come to the next episode (or debut if input episode is debut night)
 - a. Create procedure/function

```
-- II. Store Procedure/Function --
-- 1. Create a procedure/function to print list of trainees come to the
next episode (or debut if input episode is debut night) --
DELIMITER //
CREATE OR REPLACE PROCEDURE next_ep_list
(InYear year, InEp int(1))
BEGIN
     IF (InEp = 1) THEN
        SELECT s.Ssn trainee, AVG(m.Score)
        FROM stageincludetrainee s JOIN mentorvaluatetrainee m
        ON s.SYear = m.Syear AND s.Ssn trainee = m.Ssn trainee
        WHERE (s.SYear, s.Ep No) = (InYear, InEp)
        GROUP BY s.Ssn trainee
        ORDER BY AVG(m.Score) DESC
        LIMIT 30;
    END IF;
    IF (InEp = 2) THEN
     SELECT s.Ssn_trainee, s.No_of_votes
        FROM stageincludetrainee s
        WHERE (s.Syear, s.Ep_No) = (InYear, InEp)
        ORDER BY s.No_of_votes DESC
        LIMIT 20;
    END IF;
    IF (InEp = 3) THEN
        SELECT sit.Ssn_trainee, sit.No_of_votes
        FROM stageincludetrainee sit
        WHERE (sit.SYear, sit.Ep_No) = (InYear, InEp)
        AND sit.Ssn_trainee NOT IN(
            SELECT lgt1.Ssn trainee
            FROM (
                SELECT * FROM stageincludetrainee sit
                WHERE (sit.SYear, sit.Ep No, sit.Stage No) IN (
                    SELECT s.Syear, s.Ep_No, s.Stage No
```

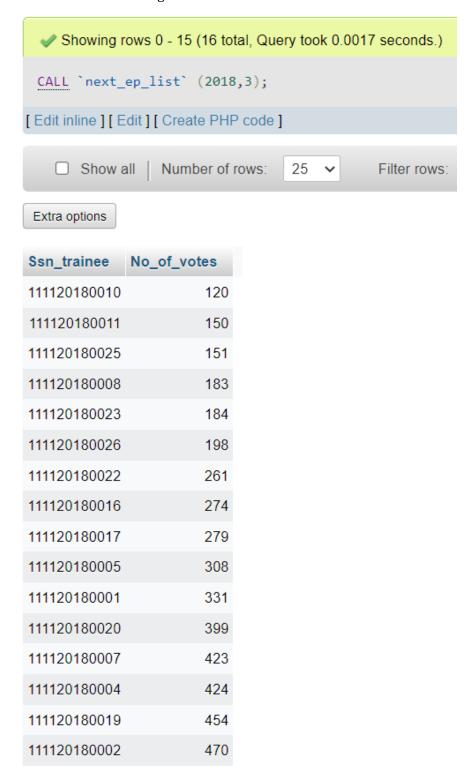
```
FROM stage s
                WHERE(s.SYear, s.Ep_No) = (InYear,InEp)
                AND (s.Total Votes) IN(
                    SELECT MIN(s.Total Votes)
                    FROM stage s
                    WHERE (s.SYear, s.Ep_No) = (InYear,InEp)
                    GROUP BY s.Song ID
                )
            )
        )AS lgt1
        WHERE (
            SELECT
                     COUNT(*)
            FROM (
                SELECT * FROM stageincludetrainee sit
                WHERE (sit.Syear, sit.Ep_No, sit.Stage_No) IN (
                    SELECT s.Syear, s.Ep_No, s.Stage_No
                    FROM stage s
                    WHERE(s.SYear, s.Ep No) = (InYear,InEp)
                    AND (s.Total Votes) IN(
                        SELECT MIN(s.Total Votes)
                        FROM stage s
                        WHERE (s.SYear, s.Ep No) = (InYear,InEp)
                        GROUP BY s.Song ID
                       )
                 )
            ) AS lgt2
            WHERE lgt2.Stage No = lgt1.Stage No AND
                  lgt2.No_of_votes <= lgt1.No_of_votes</pre>
            ) <= 2
      ORDER BY sit.No of votes;
END IF;
IF (InEp = 4) THEN
 SELECT s.Ssn trainee, s.No of votes
    FROM stageincludetrainee s
    WHERE (s.Syear, s.Ep No) = (InYear, InEp)
    ORDER BY s.No of votes DESC
```

```
LIMIT 10;
    END IF;
    IF (InEp = 5) THEN
     SELECT s.Ssn_trainee, s.No_of_votes
        FROM stageincludetrainee s
        WHERE (s.Syear, s.Ep_No) = (Inyear, InEp)
        AND s.Stage_No IN(
            SELECT stage.Stage_No
            FROM stage
            WHERE (stage.Syear, stage.Ep No, stage.Is Group) = (InYear,
InEp, 0)
        ORDER BY s.No_of_votes DESC
        LIMIT 5;
    END IF;
END;
//
DELIMITER ;
```

b. Call procedure/function

Assume that we would like to check the list of trainees who will come to **Episode 4** in Season 2018, we can use the command:

We will obtain the result as the image:



2. Procedure/function to retrieve the result of a trainee in a season

a. Create procedure/function

```
-- 2. Create a procedure/function to retrieve the result of a trainee
in a season --
DELIMITER //
CREATE OR REPLACE PROCEDURE trainee result
(InYear year, InSsn decimal(12,0))
BEGIN
    SELECT a.Ep no as 'Episode', b.Score as 'Result'
    FROM (
        SELECT 1 as Ep no, NULL as 'Score'
        UNION ALL
        SELECT 2 as Ep no, NULL as 'Score'
        UNION ALL
        SELECT 3 as Ep no, NULL as 'Score'
        UNION ALL
        SELECT 4 as Ep no, NULL as 'Score'
        UNION ALL
        SELECT 5 as Ep no, NULL as 'Score'
    ) AS a
    LEFT JOIN (
        SELECT 1 as Ep_no, format(AVG(mvt.Score),2) as 'Score'
        FROM mentorvaluatetrainee mvt
        WHERE (mvt.Syear, mvt.Ssn trainee) = (InYear, InSsn)
        UNION
        SELECT 2 as Ep no, format(sit.No of votes,0) as 'Score'
        FROM stageincludetrainee sit
          WHERE (sit.SYear, sit.Ep No, sit.Ssn trainee) = (InYear, 2,
InSsn)
        UNION
        SELECT 3 as Ep_no, format(sit.No_of_votes,0) as 'Score'
        FROM stageincludetrainee sit
```

```
WHERE (sit.SYear, sit.Ep No, sit.Ssn trainee) = (InYear, 3,
InSsn)
        UNION
        SELECT 4 as Ep_no, format(sit.No_of_votes,0) as 'Score'
        FROM stageincludetrainee sit
          WHERE (sit.SYear, sit.Ep_No, sit.Ssn_trainee) = (InYear, 4,
InSsn)
        UNION
        SELECT 5 as Ep_no, format(sit.No_of_votes,0) as 'Score'
        FROM stageincludetrainee sit
        WHERE sit.Ssn trainee = InSsn
        AND sit.Stage No IN(
            SELECT s.Stage No
            FROM stage s
            WHERE (s.Syear, s.Ep_No, s.Is_Group) = (InYear, 5, 0)
        )
    ) as b
   ON a.Ep no = b.Ep no;
END;
//
DELIMITER ;
```

b. Call procedure/ function

Assume that we would like to check the result of trainees who participate in 2018 and has the Ssn = 111120180002, we can use the following command:

We will obtain the result as the image:



PART 3: BUILDING APPLICATIONS (3 points)

- I. Create user
 - 1. Create user

```
CREATE USER 'sManager'@'localhost' IDENTIFIED BY 'password';
```

2. Grant privileges

```
GRANT ALL PRIVILEGES ON *.* TO `sManager`@`localhost` IDENTIFIED BY PASSWORD '*2470C0C06DEE42FD1618BB99005ADCA2EC9D1E19' WITH GRANT OPTION;
```

GRANT ALL PRIVILEGES ON `reality_show`.* TO `sManager`@`localhost`;

II. Programming environment

Apache, MySQL and PHP

III. How to connect application to MariDb (XAMPP) database

We use XAMPP to code our application. XAMPP is a free and Open-source cross-platform Web Server Solution Stack built by Apache Friends, which consists mostly of the Apache HTTP Server, MariaDB/MySQL Database, and interpreters for PHP and Perl scripts.

More detail will be provided in the online version (page 1)

IV. Implement features

1. Code for adding information for a new trainee

```
<?php
$servername = 'localhost';
$username = 'sManager';
$password = 'shop01';
$dbname = "reality show";
try {
    $ssn = $POST['ssn'];
    $fname = $ POST['fname'];
    $lname = $ POST['lname'];
    $phone = $_POST['phone'];
    $address = $ POST['address'];
    dob = POST['dob'];
    $photo = 'uploads/sheaf-of-rice.png';
    $company = $ POST['company'];
    $syear = $_POST['season'];
    $sql = "INSERT INTO `person` (Ssn, Fname, Lname, PAddress, Phone)
      VALUES ($ssn,'$fname','$lname','$address','$phone');
     INSERT INTO `trainee` (Ssn, DoB, Photo, Company ID)
    VALUES ($ssn,'$dob','$photo','$company');
    INSERT INTO `seasontrainee` (`Syear`, `Ssn trainee`)
    VALUES ('$syear', '$ssn');";
    $conn = new PDO("mysql:host=$servername;dbname=$dbname", $username,
$password);
    /* set the PDO error mode to exception */
    $conn->setAttribute(PDO::ATTR ERRMODE, PDO::ERRMODE EXCEPTION);
    $conn->exec($sql);
    echo "New record created successfully";
} catch (PDOException $e) {
   echo $sql . "<br>" . $e->getMessage();
}
$conn = null;
?>
```

2. Code for searching information of trainees by name (full name of trainee includes the search string).

```
<?php
$swhere = "";
if (!empty($category_ids)):
    if (isset($_GET['search']) && !empty($_GET['search'])) {
        $swhere .= " and (p.Ssn LIKE '%{$_GET['search']}%' or p.Fname
        LIKE '%{$ GET['search']}%' or p.Lname LIKE</pre>
```

```
'%{$ GET['search']}%' or (concat(p.Fname,' ',p.Lname)
                                                                    LIKE
        '%{$ GET['search']}%') )";
    }
$trainee = $conn->query("SELECT DISTINCT t.*, p.Fname as fname, p.Lname
    lname FROM `trainee` t inner join `seasontrainee` st on
st.Ssn trainee=t.Ssn inner join `season` s on st.Syear=s.SYear inner
join person p on p.Ssn=t.Ssn where t.Ssn != 0 {$swhere} order by
RAND()");
while ($row = $trainee->fetch_assoc()):
?>
  3. Code for getting trainee Ssn to show detail information
if (isset($ GET['Ssn']) && $ GET['Ssn'] > 0) {
      $qry = $conn->query("SELECT DISTINCT t.*, st.Syear as syear,
p.Fname as fname, p.Lname as lname, p.PAddress as `address`, p.Phone as
phone, count(st.Syear) as cyear FROM `trainee` t inner join
`seasontrainee` st on st.Ssn trainee=t.Ssn inner join `season` s on
st.Syear=s.SYear inner join person p on p.Ssn=t.Ssn where t.Ssn != 0
and t.Ssn = '{\S GET['Ssn']}'");
    if (\$qry->num\ rows > 0) {
        foreach (qry \rightarrow fetch_assoc() as k \Rightarrow v) {
            $$k = $v;
        }
    } else {
                            echo "<script> alert('Unkown
location.replace('./?page=trainee') </script>";
        exit;
    }
} else {
                 echo "<script> alert('Ssn
                                                      is required.');
location.replace('./?page=trainee') </script>";
    exit;
}
?>
  4. Code for showing detail information
<div class="content py-3">
 <div class="card card-outline card-primary rounded-0 shadow">
```

```
<div class="card-header">
 <h2 class="card-title"><b>Trainee's detail infomation</b></h2>
</div>
<div class="card-body">
 <div class="container-fluid">
   <div id="msg"></div>
   <div class="row">
     <div class="col-lg-4 col-md-5 col-sm-12 text-center">
       <div class="position-relative overflow-hidden" id="prod-img-holder">
         <img src="<?= validate_image(isset($Photo) ? $Photo : "") ?>" id="prod-img"
           class="img-thumbnail" style="background-color:#f2faf4">
       </div>
     </div>
     <div class="col-lg-8 col-md-7 col-sm-12">
       <h3><b>
           <?= $fname ?>
             <?= $lname ?> &nbsp;
         </b><i class="fas fa-user-tie fa-spin" style="color:#54c577"></i></h3>
       <div class="d-flex w-100" style="padding-bottom:10px">
         <div class="col-auto px-0">Ssn: &nbsp; </div>
           <h5 class="card-title text-truncate w-100 hah">
               <?= $Ssn ?> &nbsp;
             </h5>
       </div>
       <div class="d-flex" style="padding-bottom:10px">
         <div class="col-auto px-0">Date of birth: &nbsp; </div>
         <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
           <?= $DoB ?>
             </div>
       </div>
       <div class="d-flex" style="padding-bottom:10px">
         <div class="col-auto px-0">Company: &nbsp; </div>
         <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
```

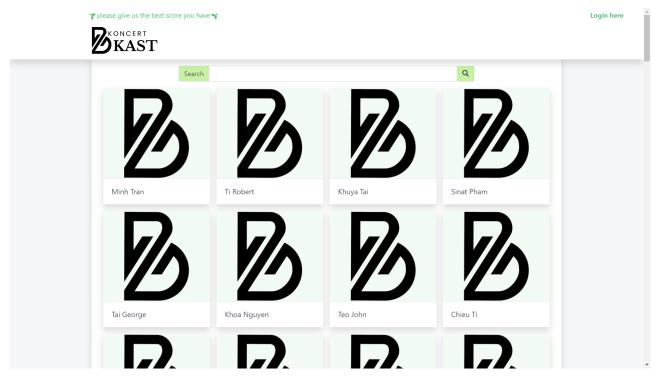
```
<?= $Company_ID ?>
                 </div>
           </div>
           <div class="d-flex" style="padding-bottom:10px">
             <div class="col-auto px-0">Phone: &nbsp; </div>
             <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
               <?= $phone ?>
                 </div>
           </div>
           <div class="d-flex" style="padding-bottom:10px">
             <div class="col-auto px-0">Address: &nbsp; </div>
             <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
               <?= $address ?>
                 </div>
           </div>
           <div class="d-flex" style="padding-bottom:10px">
             <div class="col-auto px-0">Best result season: &nbsp; </div>
             <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
                 <?=
                  $swhere = "";
                  $swhere .= "sit.Ssn_trainee ='{$_GET['Ssn']}'";
                               $bestresult = $conn->query("SELECT sit.SYear as best_year FROM
stageincludetrainee sit WHERE {$swhere} ORDER BY sit.Ep_No DESC LIMIT 1;");
                  $row = $bestresult->fetch_assoc();
                ?>
               <?= isset($row['best_year']) ? $row['best_year'] : 'No result' ?>
               </div>
```

```
</div>
            <div class="d-flex" style="padding-bottom:10px">
              <div class="col-auto px-0">Joined season: &nbsp; </div>
              <div class="col-auto px-0 flex-shrink-1 flex-grow-1">
                <?= $cyear ?>
                  <?=
                    $swhere = "";
                    $swhere .= "st.Ssn_trainee ='{$_GET['Ssn']}'";
                                $trainee = $conn->query("SELECT DISTINCT st.Syear as syear FROM
`seasontrainee` st where {$swhere}");
                    while ($row = $trainee->fetch_assoc()):
                    ?>
                    <a class="text" href="javascript:void(0)"</pre>
                    data-year="<?= $row['syear'] ?>" data-ssn="<?= $Ssn ?>">
                        <?= $row['syear'] ?> &nbsp;
                    </a>
                    <?php endwhile; ?>
              </div>
            </div>
          </div>
       </div>
     </div>
    </div>
  </div>
</div>
   5. Code for calling a store procedure/ function of Part 2
<div class="container-fluid">
  <div class="row">
    <div class="col-3 border tablecolor"><span class="">Episode</span></div>
    <div class="col-3 border tablecolor"><span class="">Result</span></div>
  </div>
```

```
</div>
<?php
require_once('./../config.php');
if (isset($_GET['year']) && isset($_GET['ssn'])) {
  $qry = $conn->query("CALL trainee_result('{$_GET['year']}','{$_GET['ssn']}') ");
  while ($row = $qry->fetch assoc()) {
?>
<div class="container-fluid">
  <div class="row">
    <div class="col-3 border"><span class="font-weight-bolder">
         <?= isset($row['Episode']) ? $row['Episode'] : " ?>
       </span></div>
    <div class="col-3 border"><span class="font-weight-bolder">
         <?= isset($row['Result']) ? $row['Result'] : 'No result' ?>
       </span></div>
  </div>
</div>
<?php } ?>
<div class="clear-fix mb-3"></div>
<div class="text-right">
         <button class="btn btn-default bg-gradient-dark text-light btn-sm btn-flat" type="button"
data-dismiss="modal"><i
       class="fa fa-times"></i> Close</button>
</div>
</div>
<?php
  exit;
}
?>
```

V. Application screenshot

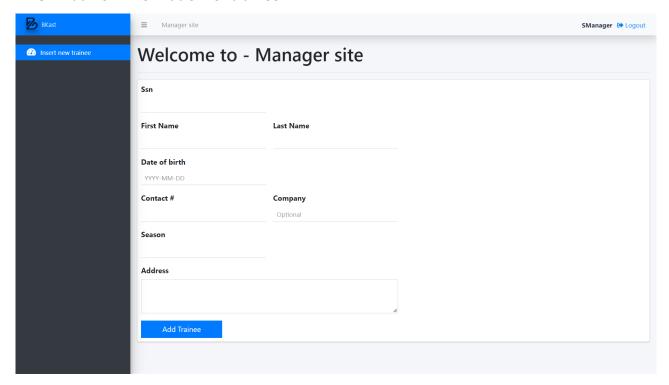
1. Main page



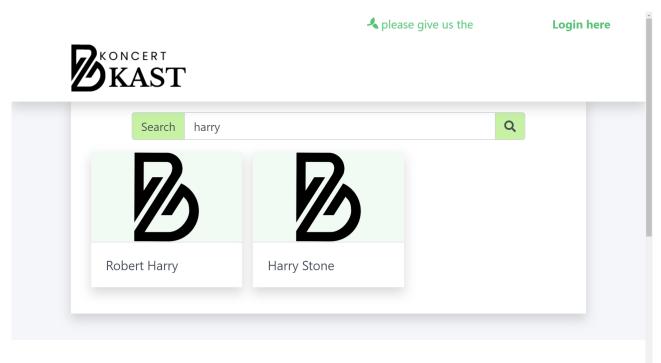
2. Login for Manager

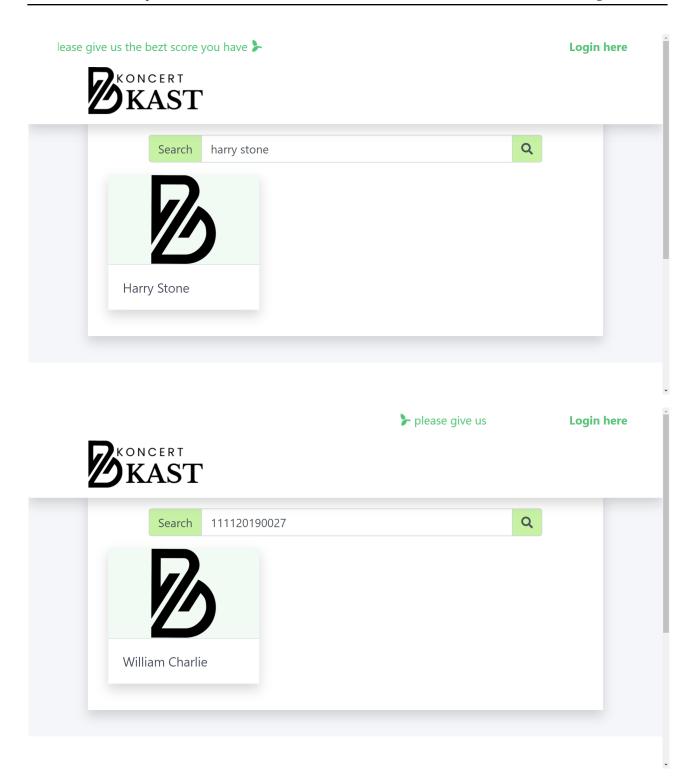


3. Add new information for trainee

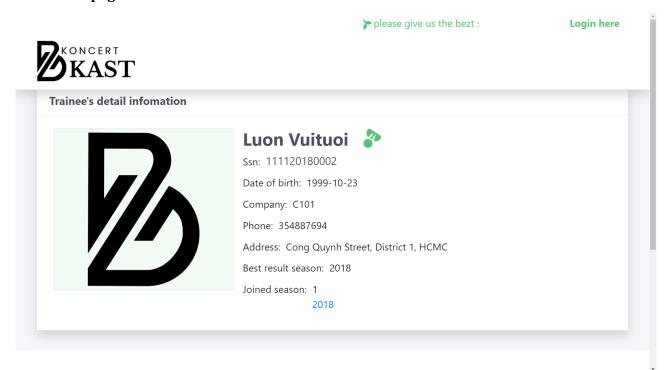


4. The search tool can search for first name, last name, full name or Ssn





5. The page to show the trainee detail information after select



6. Clicking the year to retrieve result of a trainee in a season (call a store procedure)

