# Develop SQL code to create the entire database schema, reflecting the constraints identified in previous steps.

Here I listed the Sql code for creating each table and the constraints showed in the schema.

## TABLE Department

**Sql code:**

CREATE TABLE Department(

Department\_id varchar(30) NOT NULL PRIMARY KEY,

Department\_name varchar(50) NOT NULL,

Check(Department\_name LIKE '%Department%'),

Chair\_name varchar(50),

Num\_faculty int

)

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描述已自动生成

## TABLE Student

**Sql code:**

CREATE TABLE Student(

Student\_id varchar(50) NOT NULL PRIMARY KEY,

Student\_initials varchar(30),

CHECK (length(Student\_initials)>1),

Student\_name varchar(50)

)

图形用户界面, 应用程序

描述已自动生成

## TABLE Major

**Sql code:**

CREATE TABLE Major(

Major\_code varchar(3) NOT NULL PRIMARY KEY,

CHECK(length(Major\_code)=3),

Major\_name varchar(50) NOT NULL,

Department\_id varchar(30) NOT NULL,

FOREIGN KEY(Department\_id) REFERENCES Department(Department\_id)

)  
表格

描述已自动生成

## TABLE Event

**Sql code:**

CREATE TABLE Event(

Event\_id varchar(50) NOT NULL PRIMARY KEY,

Event\_name varchar(50) NOT NULL,

Start\_date date,

CHECK(Start\_date > date '2021-12-9'),

End\_date date,

CHECK(End\_date > date '2021-12-9'),

CHECK(End\_date > Start\_date)

)

表格

描述已自动生成

## TABLE Student\_event

**Sql code:**

CREATE TABLE Student\_event(

Student\_id varchar(50) NOT NULL,

Event\_id varchar(30) NOT NULL,

PRIMARY KEY(Student\_id, Event\_id),

Foreign key(Student\_id) references Student (Student\_id) on delete cascade,

Foreign key(Event\_id) references Event (Event\_id) on delete cascade

)

表格

描述已自动生成

## TABLE Student\_major

**Sql code:**

CREATE TABLE Student\_major(

Student\_id varchar(50) NOT NULL,

Major\_code varchar(3) NOT NULL,

PRIMARY KEY(Student\_id, Major\_code),

Foreign key(Student\_id) references Student (Student\_id) ON DELETE CASCADE,

Foreign key(Major\_code) references Major (Major\_code) ON DELETE CASCADE

)

图形用户界面, 应用程序, 表格

描述已自动生成

## Table Department\_Event

**Sql code:**

CREATE TABLE Department\_Event(

Department\_id varchar(30) NOT NULL,

Event\_id varchar(50) NOT NULL,

PRIMARY KEY(Department\_id, Event\_id),

Foreign key (Department\_id) references Department(Department\_id) ON DELETE CASCADE,

Foreign key (Event\_id) references Event (Event\_id) ON DELETE CASCADE

)

图形用户界面, 表格

描述已自动生成

# (b). Create at least 5 tuples for each relation in your database.

## TABLE Department

INSERT INTO Department VALUES('AS','ART and SCIENCE Department', 'JACK', 105)

INSERT INTO Department VALUES('COMP', 'COMPUTER SCIENCE Department', 'Vic', 76)

INSERT INTO Department VALUES('ENG', 'Engineering Department', 'Mike', 90)

INSERT INTO Department VALUES('MSC', 'Music Department', 'Jacob', 98)

INSERT INTO Department VALUES('ECON', 'ECONOMICS Department', 'Nancy', 120)

文本, 表格

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## TABLE Student

INSERT INTO Student VALUES('A10001', 'LEO','LEONARDO')

INSERT INTO Student VALUES('A10002','STE','STEFEN')

INSERT INTO Student VALUES('A10003','JAC','JACKADS')

INSERT INTO Student VALUES('A10004','KO','KOKO')

INSERT INTO Student VALUES('A10005','ZIP','ZIPEI')

表格

描述已自动生成

## TABLE Major

INSERT INTO Major VALUES('ART','ARTIFICIAL INTELLIGENCE','COMP')

INSERT INTO Major VALUES('CSC','Computer Science', 'COMP')

INSERT INTO Major VALUES('JAZ','JAZZ','MSC')

INSERT INTO Major VALUES('FRN','FRENCH','AS')

INSERT INTO Major VALUES('ECE','Electricity Engineering', 'ENG')

图形用户界面

描述已自动生成

## TABLE Event

INSERT INTO Event VALUES('E10001','HAPPY FITTING', date '2021-12-10', date '2021-12-15')

INSERT INTO Event VALUES('E10002','CAKES FESTIVAL', date '2021-12-13',date '2021-12-14')

INSERT INTO Event VALUES('E10003','BOAT COMPETITION', date '2021-12-20',date '2021-12-22')

INSERT INTO Event VALUES('E10004','VIDEO GAMES', date '2021-12-12',date '2021-12-15')

INSERT INTO Event VALUES('E10005','FIND A JOB', date '2021-12-10',date '2021-12-20')

表格

描述已自动生成

## TABLE Student\_event

INSERT INTO Student\_event VALUES('A10001','E10001')

INSERT INTO Student\_event VALUES('A10002','E10002')

INSERT INTO Student\_event VALUES('A10003','E10003')

INSERT INTO Student\_event VALUES('A10004','E10004')

INSERT INTO Student\_event VALUES('A10005','E10005')

表格

描述已自动生成

## TABLE Student\_major

INSERT INTO Student\_major VALUES('A10001','CSC')

INSERT INTO Student\_major VALUES('A10002','ECE')

INSERT INTO Student\_major VALUES('A10003','JAZ’)

INSERT INTO Student\_major VALUES('A10004','FRN')

INSERT INTO Student\_major VALUES('A10005','ART')

表格

描述已自动生成

## TABLE Department\_Event

INSERT INTO Department\_Event VALUES('COMP','E10001')

INSERT INTO Department\_Event VALUES('ENG','E10002')

INSERT INTO Department\_Event VALUES('MSC','E10003')

INSERT INTO Department\_Event VALUES('ECON','E10004')

INSERT INTO Department\_Event VALUES('AS','E10005')

表格

描述已自动生成

# (c). Develop 5 SQL queries using embedded SQL (see Python tutorial).

I listed the code and their running result in the python file in this document.

**(1) List the number of the Faculty in the engineering department.**

**Sql code:**

SELECT NUM\_faculty, Department\_id, Department\_name

FROM Department

where Department\_id = 'ENG'

**running result:**

文本

描述已自动生成

**(2) List the department information including the name, id, chair name belong to the computer science major.**

**Sql code:**

SELECT d.Department\_name, d.Department\_id, d.Chair\_name, m.Major\_code

FROM Major m, Department d

WHERE m.Department\_id = d.Department\_id and m.Major\_code = 'CSC'

**Running result:**

文本

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**(3) List the Start Date, End\_date of event named ‘HAPPY FITTING’**

**Sql code:**

select Start\_date, End\_date, Event\_name

FROM Event

where Event\_name = 'HAPPY FITTING'

**running result:**

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描述已自动生成

**(4) List the Student id of those students who has major in ARTIFICIAL INTELLIGENCE.**

**Sql code:**

select k.Major\_code, m.Major\_name, k.Student\_id

FROM Student\_major k, Major m

WHERE k.Major\_code = m.Major\_code and m.Major\_name = 'ARTIFICIAL INTELLIGENCE'

**Running result:**

文本

描述已自动生成

(5) List the event(s) hold by COMPUTER SCIENCE Department

**Sql code:**

select d.Department\_id, d.Department\_name, k.Event\_id, e.Event\_name

FROM Department\_Event k, Department d, Event e

WHERE d.Department\_id = k.Department\_id and d.Department\_name = 'COMPUTER SCIENCE Department' and e.Event\_id = k.Event\_id

**Running result:**

图片包含 文本

描述已自动生成