**4** A school wants to create a database to allow students to register for different enrichment activities that will be held on the school’s Enrichment Day. An enrichment activity falls under one of three categories – Arts, Cultural, and Sports.

It is expected that the database should be normalised.

When a student registers for an activity, the following information is recorded:

• StudentID - unique 6-digit register number of the student.

• Type - type of activity ('A’, ‘C’ or 'S').

• Venue - where the activity will be held.

• Session - whether the activity is conducted in the morning or afternoon ('AM' means the morning session, and 'PM' means the afternoon session).

For the Arts category, the following extra information is recorded:

• Performance – “True” for performance arts, “False” for visual arts.

For Cultural, the following extra information is recorded:

• Race – which race the culture belongs to.

For Sports, the following extra information is recorded:

• Contact – “C” to denote contact sports, “NC” to denote non-contact sports.

• Cost - the amount of money in dollars (not more than $50) the student must pay the instructor.

The information is to be stored in four different tables:

Registration

Arts

Cultural

Sports

**Task 4.1**

Create an SQL file called TASK4\_l\_<your name>.sql to show the SQL code to create the database register.db with the four tables. The table, Registration, must use StudentID as its **primary key.** The other tables must refer to the StudentID as a **foreign key**.

Save your SQL code as

TASK4\_1\_<your name>.sql [5]

**Task 4.2**

The school wants to allow students to register over the internet. The form design for the webpage is shown below:

StudentID:

Type (‘A’, ‘C’ or ‘S’):

Venue:

Session:

**Arts**

Performance (True) or Visual Arts (False):

**Cultural**

Race:

Fill in the extra detail(s) for the chosen type of activity:

Generate  
Report

**Sports**

Contact (C or NC):  
  
Cost:

Submit

Write a Python program and the necessary files to create a web application that:

* accepts the input from the web form (assume input is keyed in correctly)
* updates the registration details into register.db
* creates and returns a HTML document that enables the web browser to display a table tabulating the StudentID and Type of activity registered for the morning session.

Save your Python program as

TASK4\_2\_<your name>.py with any additional files / sub-folders as needed in a folder named TASK4\_2\_<your name>

[12]

**Task 4.3**

Test your web application by entering the following records via the form’s submit button:

192701, A, Hall, AM, True

192703, A, MPR, PM, False

192723, S, Field, AM, C, 20

192803, C, 5-56, AM, Malay

192820, S, 5-60, PM, NC, 15

193005, C, LT4, PM, Chinese

193006, C, LT4, PM, Chinese

Save the output of the program when the user clicks on the “Generate Report” button as TASK4\_3\_<your name>.html [3]

**Task 4.4**

Write SQL code to count the number of different races for the cultural activities. Run this query.

Save this code as

TASK4\_4\_<your name>.sql

[4]