4 Name your Jupyter Notebook as:

TASK4_<your name>_<centre number>_<index number>.ipynb

A library currently keeps paper records about its members, books and the books loaned. The library wants to create a suitable database to store the data and to allow them to run searches for specific data. The database will have three tables: a table to store data about the books, a table about the members and a table about the loans. The fields in each table are:

Book:

- BookID – unique book number, for example, 1234
- Title – the book title
- Genre – the type of book, for example, Drama, Sci-fi, Classic.

Member:

- MemberNumber – member's unique number, for example, 634
- FamilyName – member's family name
- GivenName – member's given name.

Loan:

- LoanID – the loan's unique number, for example, 12
- MemberNumber – the member's unique number
- BookID – the unique book number
- DateLoaned – the date that the book was taken out by the member
- Returned – TRUE if the book has been returned, or FALSE if it has **not** been returned.

For each of the sub-tasks 4.1 to 4.3, add a comment statement at the beginning of the code using the hash symbol '#', to indicate the sub-task the program code belongs to, for example:

In [1]:
```
#Task 4.1
Program code
```

Output:

Task 4.1

Write a Python program that uses SQL code to create the database LIBRARY with the three tables given. Define the primary and foreign keys for each table. [6]

Task 4.2

The text files BOOK.txt, MEMBER.txt and LOAN.txt store the comma-separated values for each of the tables in the database.

Write a Python program to read in the data from each file and then store each item of data in the correct place in the database. [5]

Task 4.3

Write a Python program to input a member's number and return the names of all the books that they have had out on loan, and whether each book has been returned. [5]

Test your program by running the application with the member number 200 [2]

Save your Jupyter Notebook.

Task 4.4

Write a Python program and the necessary files to create a web application, that displays the following data, about books that have **not** yet been returned:

- member's family name
- member's given name
- book title.

The program should return an HTML document that enables the web browser to display a table with the required data.

Save your Python program as:

TASK_4_4_<your name>_<centre number>_<index number>.py

with any additional files / subfolders in a folder named:

TASK_4_4_<your name>_<centre number>_<index number> [6]

Run the web application.

Save the webpage output as:

TASK_4_4_<your name>_<centre number>_<index number>.html [2]