Web Application Revision Practice 7 [HCI/2023/Prelim/P2/Task 4]

Name your Jupyter Notebook as:

`Task4_<your name>_<centre number>_<index number>.ipynb`

A donut store owner currently keeps paper records about its members, donuts on sale and the purchase records by members. The store owner 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 donuts, a table about the members and a table about the sales. The fields in each table are:

`Donut`:

- `DonutID` – donut's unique number, for example, 5
- `DonutName` – donut's name
- `UnitPrice` – price of one donut

`Member`:

- `MemberNumber` – member's unique number, for example, 101
- `MemberName` – member's name
- `Phone` – member's contact number

`Sale`:

- `SaleID` – the purchase's unique number, for example, 1030
- `MemberNumber` – the member's unique number
- `DonutID` – the donut's unique number
- `Date` – the date that the member purchased the donut, for example, `'20230720'`
- `Quantity` – the number of donuts purchased

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 `STORE` with the three tables given. Define the primary and foreign keys for each table. [4]

Task 4.2

The text files `DONUT.txt`, `MEMBER.txt`, and `SALE.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. [3]

Task 4.3

Write a Python program to input a member's number and display

- the member's name,
- a table tabulating the donut names, dates and quantity of all the sales from this member

Test your program by running the application with the member number 104. [6]

Save your Jupyter Notebook for Task 4.

Task 4.4

The store owner wants to filter the purchases by `Date` and display the results in a web browser.

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

- receives a `Date` string from an HTML form,
- returns an HTML document that enables the web browser to display a table tabulating the names and the total quantity of each donut sold on that date, in descending order of the total quantity.

Save your Python program as
`Task4_4_<your name>_<centre number>_<index number>.py`

with any additional files/subfolders as needed in a folder name
`Task4_4_<your name>_<centre number>_<index number>`

Run the web application with the date entered as `'20230721'`.

Save the output as
`Task4_4_<your name>_<centre number>_<index number>.html` [12]