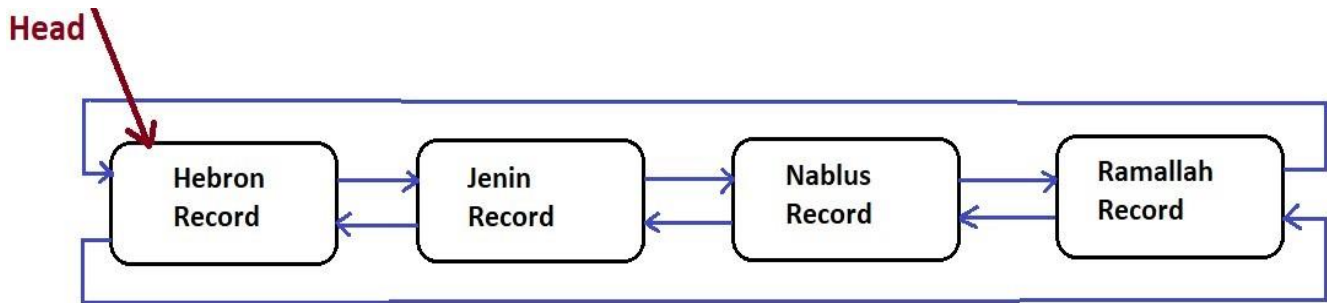


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Data Structures
Mini Project – Linked Lists

In this project, you will implement a martyrs' data structure using sorted doubly circular linked list, stack and vector. The following figure shows the overall data structure:



- The sorted doubly circular linked list contains location records sorted by location in alphabetical order.
- The location record contains two objects of type vector and stack:
 - vector: stores Martyr records sorted by Martyr's name
 - stack: Stores Martyrs records sorted by date (from the earliest date back to the latest as stored in the csv files).
- The data input for this project will be a martyr's csv attached file (btselem.csv).

First: Create the data structure above and fill in the data structure from the file (btselem.csv).

Second: The user will get the first menu (Location Menu) to choose from:

Location Menu:

1. An option to insert new location record.
2. An option to update an existing location
3. An option to delete an existing location
4. An option to search for a location record

If the user chooses (4), then the following options appear to the user:

- a. Martyrs' Menu
- b. Statistics Report

If the user chooses (a), the following menu appears to the user.

Martyrs Menu: after searching/selecting a location, the user can:

1. Insert a new martyr record (i.e., create **one** Martyr record, read its info and add its information to both vectors inside that location).
2. Update a martyr record
3. Delete a martyr record
4. Search for a martyr by name and display his/her information.

If the user chooses (b) then the following report appears to the user.

Statistics Report:

for the selected location from location Menu, generate and display a summary report that includes:

- a. The numbers of martyrs in the selected location.
- b. Print the Martyrs' full information in that location.
- c. Traverse the stack(i.e., start from the latest date back to the earliest) and print the Martyrs' full information
- d. Report the date that had the minimum number of martyrs.

Third:

The program asks the user if he wants to save the changes to the file, as follows:

Do you want to save the changes to the file?

- a. Yes
- b. No

If the user chooses (b) then the program exits without changing the file.

If the user chooses (a):

you will save the updated data structures back to a file in the same format (Name, Age, Event location – District, Date of death, Gender) separated by comma (,). Ask user to select the folder and file name to save the updated information in.