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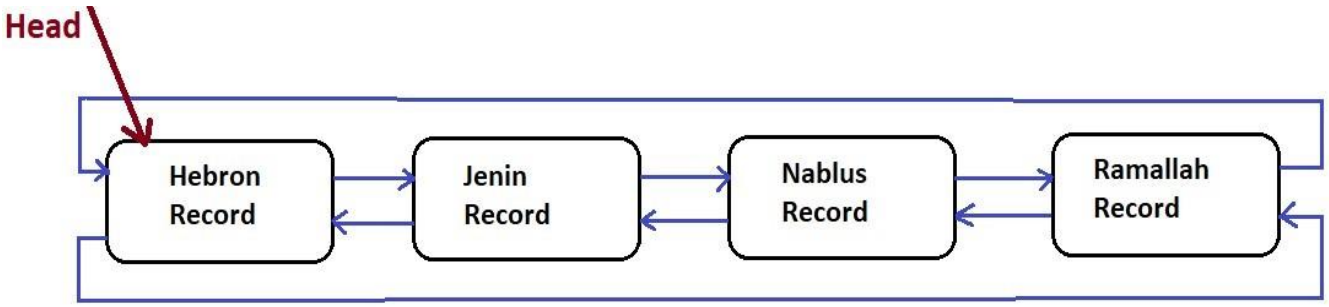
Department of Computer Science
Data Structures
Mini Project – Linked Lists

In this project, you will implement a martyrs' data structure using sorted doubly circular linked list and 2 vectors. The following figures 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:
  - 1st vector: stores Martyr records sorted by Martyr's name
  - 2nd vector: Stores Martyrs records sorted by date.
- 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 vector backward (i.e., start from the latest date back to the earliest) and print the Martyrs' full information
d. 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.