

make .db files so there is no problems w/finding



COSC401 Database Management Systems

Fall 2022

Assignment #1
(due Oct. 12)

menu shows 2!
functions last 1

Consult dbFiles
constantly!

Write a menu driven program to create and operate on a relational database that, prospectively, can be used by a library.

One relation is stored in one data file. Because these files can have different structure, the information about this structure is stored in the system catalog dbFiles maintained by your program (which should be created only the first time you run your program!). This information includes the names and the widths of all columns.

Write functions/methods `createTable()`, `insert()`, `remove()`, `printFile()`, and `purge()` that operate on these files.

The `createTable()` function creates a file whose name and size are entered by the user. Here is an example (the underlined entries are typed by the user):

enter table name: books
enter column name and its length: author 20
enter column name and its length: title 20
enter column name and its length: callNo 5
enter column name and its length:

After this, the text file `books.db` is created and column names `author`, `title`, and `callNo` and their sizes are inserted in `dbFiles`.

`insert()` allows you to add new entries (records) to a file. For example, you may have the following sequence of entries after choosing the insert option:

enter file name: books
author: Burnett Frances
title: The Secret Garden
callNo: MN432
More entries (Y/n):
author: Wesley John
title: Journal
callNo: PQ945
More entries (Y/n): n

every entry may want
to be the same size,
so fill w/ blank space
PAD CELLS

Decide how
+ to find
+ the
record

`remove()` allows you to remove any record from any file. The prompts may be similar to those for inserting records. When deleting a record, put only a tombstone in the data file and continue running your program. A tombstone can be some special character – e.g., the sharp sign `#` – which is written over the first character in the record.

`printFile()` displays the content of a file as a table with aligned columns and column names as captions. *Print tables w/ captions. consult the JbFiles*

After exit is chosen from the menu, call the function `purge()` to process all the data files to be found in `dbFiles`. Purging consists in permanently removing from each file all the records marked for removal.

Deletion should not happen until the end of the session.

Delete marks for deletion then, when program ends, call the `purge()` & go through & delete

Books.JB
 Author, Title, CallNo
 Burnett Frances, The Secret Garden, MN432

BOOKS

Author	Title	CallNo
Burnett Frances	The Secret Garden	MN432
Wesley John	Journal	PQ945
Pushkin Aleksander	Evgeny Onegin	AB123
Bernhardt Sarah	Memoires	KL765
Genlis Stephanie	Memoires	KL766
Byron George	The Giaour	NN333
Wesley Charles	Hymns	SD120
Byron George	Beppo	XY768

(+ tombstone → deleted when exit() is called)

PEOPLE

SSN	Name
123456789	Duff Jes
987654321	Butler Donald
999123456	Kazanopoulos Demos

dbFiles

file name	column name	size
books	Author	20
books	Title	20
books	CallNo	5
people	Name	20
people	SSN	9