

탐색

[CSED421-01 Database System](#)[Course Resources](#)[Previous Resources](#)▼ [Project_backup](#)[5. KD Tree \(2017 - Spring\)](#)[Programming](#)[Contest: Continuous](#)[Subgraph Matching](#)▼ [Projects](#)[1. Why DBMS?](#)[▶ EDU/COSMOS](#)[Implementation](#)[Programming](#)[Contest: In-memory](#)[Index](#)▼ [Projects Q&A](#)[1. Why DBMS ?](#)[2. Buffer Manager](#)[3. Object Manager](#)[4. Btree Manager](#)[5. KD Tree](#)▼ [Redbase project](#)[2. Paged File\(PF\)](#)[3. Record](#)[Management\(RM\)](#)[4. Indexing\(IX\)](#)[사이트맵](#)[Projects](#) >

1. Why DBMS?

Hard deadline: 11:59 pm, Sep. 21, 2020 (no late submission allowed)

Environments

- OS : Ubuntu 14.04 or above
- Compiler : g++ 4.7 or above (Please do not use external libraries)

Purpose and Goal

The purpose of this assignment is primarily three-fold...

Firstly, through this assignment it is hoped that you will take the opportunity to familiarize yourself with **Linux C++ environment**, which you will be using for the more difficult assignments to follow, and the coding style expected and the submission process.

Secondly, we would like to introduce you to the types of queries that are regularly asked of Database Management Systems (DBMS), and get you thinking about how the required results are produced in code.

Lastly, this assignment is meant to give you a glimpse into what the world would be like without advanced DBMS tools - a good a place as any to begin this course. Welcome to CSED421.

The assignments are designed to complement the material in class, and improve the understand thereof. Make use of this opportunity to explore the subject matter in greater depth.

Outline

The result of your work for this assignment should be simple C++ programs that will read a given data set from a file, of specified format, and output the correct result (for that given data set) to stdout. In essence, your program will execute a specific "query" on a table of data. The program should accept the filename(s) containing tables of data as its command-line parameter(s).

The data you will be using is an excerpt taken from an example on-line shopping/ordering/delivery system. Therefore, some of the fields in the tables you are given will not make sense in the context of the queries you need to write. However, all the information and tables you need to produce a correct answer are provided.

Query #1:

List all the last names (LNAME) of the active customers that live in

Toronto.

You will be provided with a *customer* and *zonecost* tables in separate files. So your program should be executed as :

```
<your_binary> q1 <customer.file> <zonecost.file>
```

```
ex) ./a.out q1 customer.txt zonecost.txt (on your local directory)
```

The order of columns and file format will not change. Below are sample files similar to ones that your programs will be tested against.

customer table

UNAME	PASSWD	LNAME	FNAME	ADDR	ZONE	SEX	AGE	LIMIT	BALANCE	CREDITCARD	EMAIL	ACTIVE
rimon	rimon	Barr	Rimon	22 Greenside Cres., Thornhill, ON L3T	6W9	2	m	102	100	-22.13	1234567890	1
barr@cs.cornell.edu	vitomik	Pupovir	Vitomik	12 Treford Pl., Toronto, ON, M6J	1Z5	1	m	201	100	7.79	1@cdf.toronto.edu	1
gabe	gabe	Belipsky	Gabe	178 Jarvis,	200	8.24				5	m	112
2@cdf.toronto.edu	babas	Khahremanp	Babas	6 Sussex	100	43.20		2345678901				1
3@cdf.toronto.edu	inactive	active	in		100	0.00						8
where	inactive@cdf.toronto.edu		lube									0
lubeq	lube	Tuik	Lubeq	downtown	m	320	100	26.24				1
4@cdf												

zonecost table

ZONEID	ZONEDESC	PRICE
1	Toronto	5.00
2	North York	7.00
3	Mississauga	8.00
4	Etobicoke	8.00
5	CDF	0.00
6	Transylvania	12.00
7	Atlantis	12.00
8	Mars	50.00

A customer is active if the value of the last field (called 'ACTIVE') in the customer table is set to 1. A customer lives in Toronto if the value of the ZONE field matches a value of the ZONEID field in the zonecost table and the corresponding ZONEDESC entry in the zonecost table equals 'Toronto'.

Your program should output one line for each result record of the query, displaying the last name of the customers only. No other output is required. Be careful not to make any assumptions while writing your program, just to make it easier to write. For example, in the zonecost table, there could be two entries with ZONEDESC Toronto but different values for zoneid.

It is expected that this program will use features available in C++. Use streams for data input and output. Create objects to encapsulate records of each table, and try to make them as self contained as possible. Marks will be awarded for proper class design and encapsulation.

Query #2:

Output the BARCODE and the PRODDISC for each product that has been purchased by at least two customers.

In this case you will need the *lineitem* and *products* tables, and your program should be executed as:

```
<your_binary> q2 <lineitem.file> <products.file>
```

```
ex) ./a.out q2 lineitem.txt products_a.txt (on your local directory)
```

Shown below is some sample data. You can assume that the BARCODE field is a key for the products table, and you can assume that UNAME uniquely identifies a customer.

lineitem table

UNAME PRICE	DATE	TIME	BARCODE	QUANTITY	
-----	-----	-----	-----	-----	-----
rimon	04/15/1998	16:59:09	1016	1	2.68
rimon	04/15/1998	16:59:09	1023	3	2.15
vitomik	04/15/1998	17:02:34	1013	2	1.49
vitomik	04/15/1998	17:02:34	1023	3	2.15
vitomik	04/15/1998	17:02:34	1010	2	5.24
vitomik	04/15/1998	17:02:34	1007	2	2.39
vitomik	04/15/1998	17:02:34	1011	1	9.95
vitomik	04/15/1998	17:02:34	1008	1	3.15
babas	03/10/1998	17:32:58	1019	10	3.12
rimon	04/15/1998	08:00:00	1002	2	2.56
rimon	04/15/1998	08:00:00	1008	5	3.15
gabe	04/12/1998	17:40:29	1019	1	3.12
gabe	04/12/1998	17:40:29	1002	2	2.56

lube	04/17/1998 16:22:26	1016	3	2.68
lube	04/17/1998 16:22:26	1023	5	2.15
lube	04/17/1998 16:22:26	1013	1	1.49
lube	04/17/1998 16:22:26	1005	1	0.96

products table

BARCODE	PRICE		MFG
PRODESC			
SUPPLIER	TAXABLE	CATEGORY	SALE_PERCENT

1001	3.38	Apple	
juice			Oceanspray
XYZ	1	Beverage	0.00
1002	2.56	Orange	
juice			Tropicana
XYZ	1	Beverage	0.10
1003	4.21		
Lemonade			Oceanspray
XYZ	1	Beverage	0.00
1004	1.35	Chocolate	
drink			Hershey
XYZ	1	Beverage	0.00
1005	0.96		
Gatorade			Gatorade
XYZ	1	Beverage	0.00
1006	2.99	Milk homogenised 2%	
4L		Dairy Farms	XYZ
1		Beverage	0.00
1007	2.39	Celestial seasonings	
tea		Bigelow	XYZ
1		Beverage	0.20
1008	3.15	Special K	
12oz			Kellogg
XYZ	1	Cereal	0.00
1009	1.85	Oatmeal	
cereal			Quaker
XYZ	1	Cereal	0.00
1010	5.24		
Waffles			Eggo
XYZ	1	Cereal	0.00
1011	9.95	Sunflower cooking oil,	
34oz		Crisco	XYZ
1		Cooking	0.05
1012	3.58	Distilled white	
vinegar		Crisco	XYZ
1		Cooking	0.00
1013	1.49		
Ketchup			Heinz
XYZ	1	Pasta	0.00
1014	1.75	Seafood cocktail	
sauce		Heinz	XYZ
1		Cooking	0.00
1015	0.98	Pizza	
sauce			Heinz
XYZ	1	Cooking	0.00
1016	2.68		
Paprika			McCormicj
XYZ	1	Cooking	0.15

1017	1.98	Shake 'n bake	
chicken		Quaker	
XYZ	1	Cooking	0.00
1018	0.88	Crushed	
tomatoes		Hunts	
XYZ	1	Vegetables	0.00
1019	3.12	Dried	
tomatoes		Hunts	
XYZ	1	Vegetables	0.10
1020	1.44	Mashed	
potatoes		Hamburger helper	
XYZ	1	Vegetables	0.00
1021	5.28		
Garlic		Hunts	
XYZ	1	Vegetables	0.00
1022	2.85	Whole kernel	
corn		Hamburger helper	
XYZ	1	Vegetables	0.00
1023	2.15		
Spaghetti		Hamburger helper	
XYZ	1	Pasta	0.20
1024	1.24	Flavoured	
rice		Hamburger helper	
XYZ	1	Pasta	0.00

What and how to submit

- Create a local folder with **your student ID** as its name in your home directory.
- Copy your Makefile file, source files, and executables into this directory.
- Ensure you provide executables that will run on the provided sample data, as well as all the files required to recompile the executable. Check whether you have copied all files and check that everything works in the directory that you have created.
- If you want to make any comments about your submission, place them into a file called README.txt.
- Submit the .zip file containing your local folder on the LMS.
- If there are any problems, please contact the TAs ASAP.

Grading

- 40% for Q1.
- 40% for Q2.
- 20% for coding style.
(Your coding style should be consistent. We recommend you follow [google coding style guideline](#).)

This assignment must be your sole, independent work.

General comments

- The format of the tables will follow the convention shown. Links have been provided above each table so that you can download the sample files. You can assume that the field widths will remain

constant. In addition, you can assume that all fields are left-aligned.

- If you have any questions about or problems with this assignment, please address them as soon as possible. You can email the TAs

댓글

댓글을 추가할 수 있는 권한이 없습니다.

[로그인](#) | [최근 사이트 활동](#) | [악용사례 신고](#) | [페이지 인쇄](#) | 제공: [Google 사이트 도구](#)