

CSE 102 Spring 2025 – Computer Programming

Assignment 13

Due on 04 June, 2025 at 23:59

You will write a C program that creates a database system and performs operations on it. Your records must be this table:

Person	JobType : enum	Date
id : int	BACKEND_DEVELOPER	day:int
name: char*	FRONTEND_DEVELOPER	month:int
mail:char*	FULLSTACK_DEVELOPER	year:int
job_type : enum	MOBILE_DEVELOPER	
email_verified : boolean	EMBEDDED_SOFTWARE_ENGINEER	
date: struct	GAME_DEVELOPER	
	DEVOPS_ENGINEER	
	TEST_ENGINEER	

I will provide you with an input.txt file containing information about 10 people, with each field separated by commas. You will use dynamic memory allocation for the database. Your table name will be CUSTOMER. id will start from 1. You will use dynamic memory allocation, structs, Enumeration (or enum).

Commands:

There will be 4 command types. Their example usages are below.

INSERT INTO CUSTOMER ("Ali","ali@gtu.edu.tr",1,1,"20.09.2000"); // insert table a record

INSERT INTO CUSTOMER ("Veli", , , , "20.09.2000"); // insert table a record. If there are empty fields in the INSERT INTO statement, you should insert NULL or 0 values depending on the data type.

TRUNCATE TABLE CUSTOMER; // delete table and its content. After this command, the id should start at 1 again.

DELETE FROM CUSTOMER WHERE id=1; // This command will delete all records that satisfy the WHERE condition.

UPDATE CUSTOMER SET email="veli@gtu.edu.tr", job_type=2 WHERE id=2;

If "id" is not in the table print error message.

- ➔ After each command, print table content to output.txt with comma separated. First line will be first version of the table. Print 10 dashes (-) between each version of the table to separate them.
- ➔ Commands will be given with commands.txt file.
- ➔ I will give you example text files.
- ➔ All commands are written in capital letters and are terminated with a semicolon and test your code accordingly.

Notes:

- Your program should have only functions.
- Use dynamic memory allocation. You can use Valgrind to check for memory leaks.
- Do not forget to indent your code and provide comments.
- Check the validity of the user input.
- Submit your homework as a zip file named as your student id (StudentID.zip) and this file should include:
 - YourStudentID.c file
- Programs with compilation errors will get 0.
- The output format must be as given, do not change it.
- Compile your work with the given command "gcc -ansi your_program.c -o your_program".
- For any questions and problems, you can always contact me via email zelihaerim@gtu.edu.tr.