**DOKUZ EYLUL UNIVERSITY**

**ENGINEERING FACULTY**

**DEPARTMENT OF COMPUTER ENGINEERING**

**DATA ORGANIZATION AND MANAGEMENT**

**HOMEWORK II**

**ADDRESS BOOK APPLICATION WITH SIMPLE INDEXING**

**by**

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**11.05.2017**

1. **Description**

This homework just represents simple indexing process. It contains “Insert / update / delete / list / search” operations in c programming. This purpose, using simple indexing some kind of data are kept in a data file, and at the same time an index file. After Index file is read, load to RAM and operations are made in there. Data file and index file are seem binary file and they are unreadable for a human.

1. **General Informations**

For this program, a makefile was created in homework folder. This starts “gcc” command and compiles. In homework folder, there are 5 c files, and there is a makefile. In **index.c** , this represents index file. Actually, there is a linkedlist that contains id, firstname,lastname in index.c. RAM process are made in index.c file. In **file.c**, this represents data file. There are disk read/write operations to save on disk. In functions.c, there are some functions to use the other “c files”. In m**enu.c** , a menu is shown and requests a choice from user. Excepts these, there is flag operation to avoid some errors.

1. **Completed Tasks**
   1. **Insertion operation**

Insertion operation was implemented successfully. Firstly, when insert a new record choosen in menu, person info is entered respectively. New record is added end of data file, and record irstname, lastname, and id informations are added to linkedlist in RAM.

* 1. **Update operation**

Firstly, record is searched this option. Record information which entered PK is got in screen. User can update section that user want. This implementatiton is in file.c

* 1. **.Deletion operation**

Record that will delete is searched firstly. Founded record is deleted from RAM. Related record is marked and updated in disk.

* 1. **.Search operation**

Search operation completely is performed in Ram. Sometimes disk read may require to show all person information.

* 1. **.List operation**
  2. **.Find operation**

1. **Uncompleted Tasks**

Each tasks were implemented. This program is worked.

1. **Additional Informations**

For error control, after each insert/update/delete operations, **a flag file** is created in DATA folder. If program closes properly, this file is deleted in disk. If not, program is read data file entirely, and create a new index file.

There is a ID that is a integer for each person. ID is unique like PK ( name + surname) is used to read from data file in fseek( ID \* sizeof(\*PERSON)). ID, which is kept in DATA folder as “ID” is used to find pointer.

**This program is implemented on Ubuntu 16.04 LTS.**