Department of Electrical and Computer Engineering

Computer Architecture

Project 1 :

Medical Test Management System

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Made by :
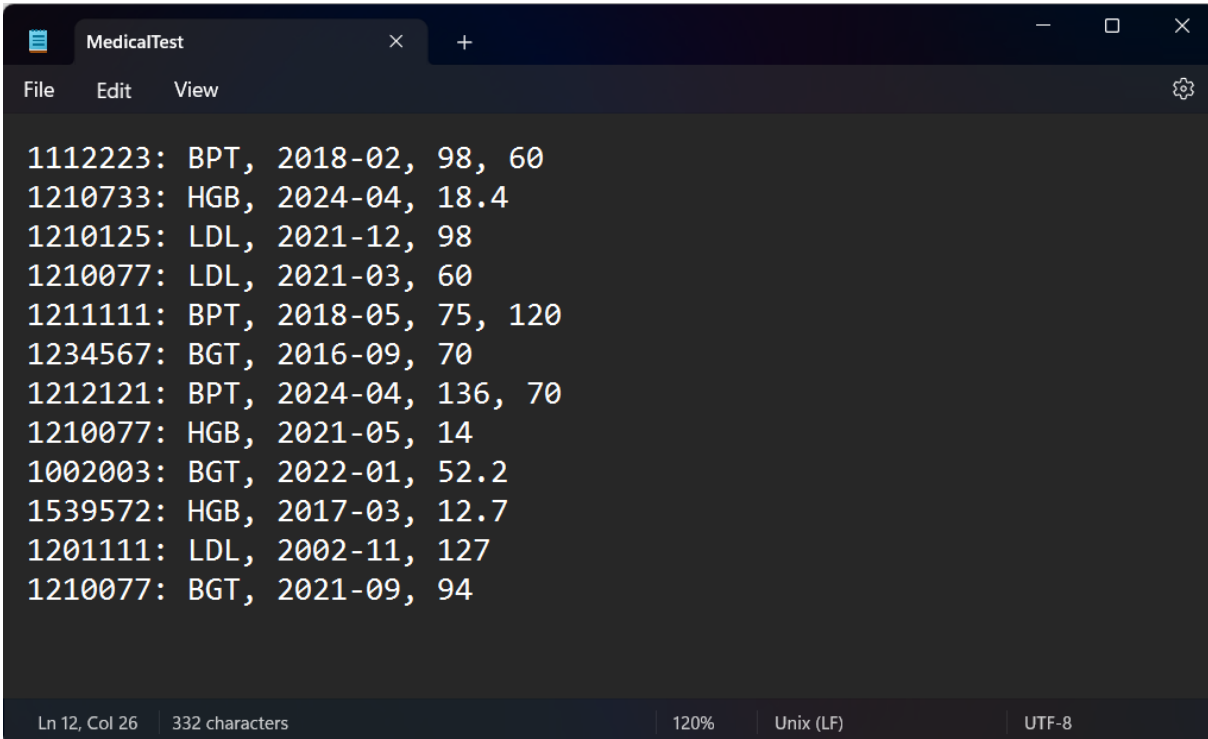
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Sec : 3

Instructor : Dr.Aziz Qaroush

Date : 30/4/2024

Some Simulation Screenshots

File content:

```
MedicalTest                    ×    +

File    Edit    View                                          ⚙

1112223: BPT, 2018-02, 98, 60
1210733: HGB, 2024-04, 18.4
1210125: LDL, 2021-12, 98
1210077: LDL, 2021-03, 60
1211111: BPT, 2018-05, 75, 120
1234567: BGT, 2016-09, 70
1212121: BPT, 2024-04, 136, 70
1210077: HGB, 2021-05, 14
1002003: BGT, 2022-01, 52.2
1539572: HGB, 2017-03, 12.7
1201111: LDL, 2002-11, 127
1210077: BGT, 2021-09, 94

Ln 12, Col 26    332 characters        120%    Unix (LF)        UTF-8
```

The menu:

```
Welcom To Patient Record Management System.
The file has opened succesfully...
Reading from file done, with this number of char: 468


****************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> |
```

1- Adding a new medical test:

```
>> 1
Enter the ID (integer of 7 digits only): 4446667
Enter the test name: BGT
Enter the date of the test with formate YYYY-MM only: 2019-08
Enter the Result of the test: 121
The Test has been added successfully ...

***************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 1
Enter the ID (integer of 7 digits only): 4446667
The patient has the the following tests :
ID: 4446667    TestName: BGT    TestDate: 2019-08    TestResult: 121.0

***************************************************
```

First, we choose the number 1 from the menu , then the system asks to enter the information about the new medical test , then , it will be saved and added to the rest of data in the file .

Some error handling:

```
***************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 1
Enter the ID (integer of 7 digits only): 123456
Invalid ID Number ! , try again please ...
Enter the ID (integer of 7 digits only): 1234567
Enter the test name: ABV
Invalid Test Name ! , try again please ...
Enter the test name: LDL
Enter the date of the test with formate YYYY-MM only: 2025-04
Invalid Date ! , try again please ...
Enter the date of the test with formate YYYY-MM only: 2024-02
Enter the Result of the test: 512
Invalid Result ! , try again please ...
Enter the Result of the test: 50
The Test has been added successfully ...
```

2- Search for a test by patient ID:

Part 1 : Retrieve all patient tests:

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 1
Enter the ID (integer of 7 digits only): 1210077
The patient has the the following tests :
ID: 1210077    TestName: LDL    TestDate: 2021-03    TestResult: 60.0
ID: 1210077    TestName: HGB    TestDate: 2021-05    TestResult: 14.0
ID: 1210077    TestName: BGT    TestDate: 2021-09    TestResult: 94.0

**************************************************
```

Part 2 : Retreive all up normal patient tests:

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 2
Enter the ID (integer of 7 digits only): 1212121
Unnormal tests :
ID: 1212121    TestName: BPT    TestDate: 2024-04    Systolic Blood Pressure: 136.0    Diastolic Blood Pressure: 70.0

**************************************************
```

Part 3 : Retrieve all patient tests in a given specific period :

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 3
Enter the ID (integer of 7 digits only): 1210077
Enter the lower date with formate YYYY-MM only: 2021-04
Enter the upper date with formate YYYY-MM only: 2021-08
ID: 1210077    TestName: HGB    TestDate: 2021-05    TestResult: 14.0


**************************************************
```

3 - Search for unnormal tests

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 3
Enter the test name: BPT
Unnormal tests :
ID: 5525570    TestName: BPT    TestDate: 2018-05    Systolic Blood Pressure: 75.0     Diastolic Blood Pressure: 120.0
ID: 5525570    TestName: BPT    TestDate: 2024-04    Systolic Blood Pressure: 136.0    Diastolic Blood Pressure: 70.0

**************************************************
```

```
    **************************************************
     Choose the operation :
     1- Add a new medical test
     2- Search for a test by patient ID
     3- Search for unnormal tests
     4- Average test value
     5- Update an existing test result
     6- Delete a test
     7- Exit and write the data to the file
    >> 3
    Enter the test name: BGT
    Unnormal tests :
    ID: 1002003    TestName: BGT    TestDate: 2022-01    TestResult: 52.2
    ID: 4446667    TestName: BGT    TestDate: 2019-08    TestResult: 121.0

    **************************************************
```

```
    **************************************************
     Choose the operation :
     1- Add a new medical test
     2- Search for a test by patient ID
     3- Search for unnormal tests
     4- Average test value
     5- Update an existing test result
     6- Delete a test
     7- Exit and write the data to the file
    >> 3
    Enter the test name: HGB
    Unnormal tests :
    ID: 1210733    TestName: HGB    TestDate: 2024-04    TestResult: 18.4
    ID: 1539572    TestName: HGB    TestDate: 2017-03    TestResult: 12.7

    **************************************************
```

```
    **************************************************
     Choose the operation :
     1- Add a new medical test
     2- Search for a test by patient ID
     3- Search for unnormal tests
     4- Average test value
     5- Update an existing test result
     6- Delete a test
     7- Exit and write the data to the file
    >> 3
    Enter the test name: LDL
    Unnormal tests :
    ID: 1201111    TestName: LDL    TestDate: 2002-11    TestResult: 127.0

    **************************************************
```

4 - Average test value:

```
****************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 4
The average test values :
HGB: 15.033334    BGT: 84.3    LDL: 95.0    BPT: 103.0,83.333336

****************************************************
```

5 - Update an existing test result

Before :

```
****************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 1
Enter the ID (integer of 7 digits only): 1210125
The patient has the the following tests :
ID: 1210125    TestName: LDL    TestDate: 2021-12    TestResult: 98.0

****************************************************
```

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 5
Enter the ID (integer of 7 digits only): 1210125
The patient has the the following tests :
ID: 1210125    TestName: LDL    TestDate: 2021-12    TestResult: 98.0

Enter the test name: LDL
Enter the Date with formate YYYY-MM only: 2021-12
Enter the new ID (integer of 7 digits only): 1210125
Enter the new test name: LDL
Enter the new date of the test (with formate YYYY-MM only): 2024-05
Enter the new Result of the test: 87
The Test has been Updated successfully ...
```

After :

```
**************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 1
Enter the ID (integer of 7 digits only): 1210125
The patient has the the following tests :
ID: 1210125    TestName: LDL    TestDate: 2024-05    TestResult: 87.0

**************************************************
```

6- Delete a test :
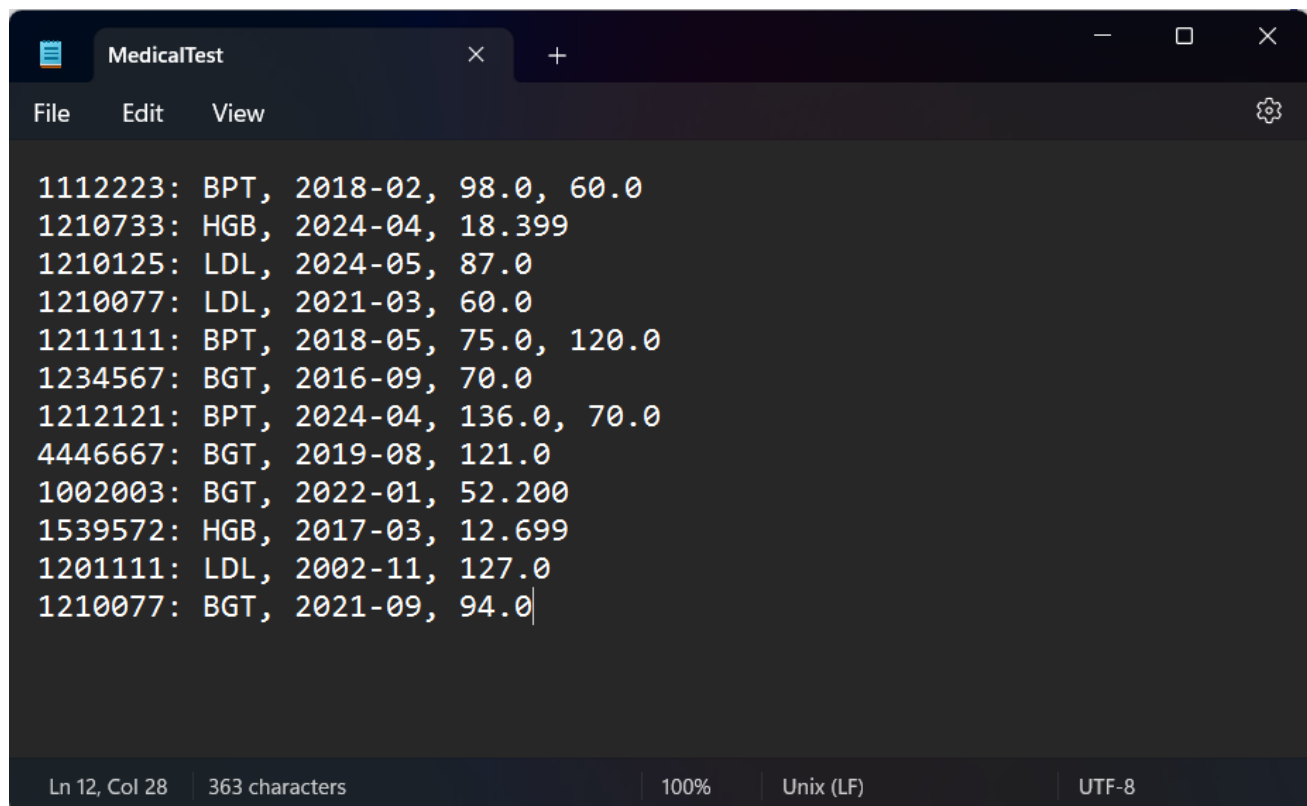
```
***************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 6
Enter the ID (integer of 7 digits only): 1210077
The patient has the the following tests :
ID: 1210077     TestName: LDL     TestDate: 2021-03     TestResult: 60.0
ID: 1210077     TestName: HGB     TestDate: 2021-05     TestResult: 14.0
ID: 1210077     TestName: BGT     TestDate: 2021-09     TestResult: 94.0

Enter the test name: HGB
Enter the Date with formate YYYY-MM only: 2021-05
The Test was deleted successfully ...

***************************************************


***************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 2
 choose the operation :
 1- Retrieve all patient tests
 2- Retrieve all up normal patient tests
 3- Retrieve all patient tests in a given specific period
>> 1
Enter the ID (integer of 7 digits only): 1210077
The patient has the the following tests :
ID: 1210077     TestName: LDL     TestDate: 2021-03     TestResult: 60.0
ID: 1210077     TestName: BGT     TestDate: 2021-09     TestResult: 94.0

***************************************************
```

7 – exit and write the Data to the file :

```
**********************************************************
 Choose the operation :
 1- Add a new medical test
 2- Search for a test by patient ID
 3- Search for unnormal tests
 4- Average test value
 5- Update an existing test result
 6- Delete a test
 7- Exit and write the data to the file
>> 7
The file has opened succesfully...
The data in the file have been updated ...
Thank you for using our programe ...
************* Good Bye *************
```

The content of the file after modification:

```
MedicalTest                    ×    +

File   Edit   View

1112223: BPT, 2018-02, 98.0, 60.0
1210733: HGB, 2024-04, 18.399
1210125: LDL, 2024-05, 87.0
1210077: LDL, 2021-03, 60.0
1211111: BPT, 2018-05, 75.0, 120.0
1234567: BGT, 2016-09, 70.0
1212121: BPT, 2024-04, 136.0, 70.0
4446667: BGT, 2019-08, 121.0
1002003: BGT, 2022-01, 52.200
1539572: HGB, 2017-03, 12.699
1201111: LDL, 2002-11, 127.0
1210077: BGT, 2021-09, 94.0

Ln 12, Col 28    363 characters         100%    Unix (LF)         UTF-8
```