



Birzeit University
Faculty Of Engineering And Technology
Electrical and Computer Engineering Department

Samples Architecture project
ENCS4370

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2024-2025

First sample:

```
8104904: Hgb, 2003-05, 14.2
1382071: Hgb, 1990-01, 98.19
1382071: BGT, 2020-01, 85.84
8233056: BGT, 2020-01, 60.77
2707081: LDL, 2009-09, 90.3
6216728: LDL, 2021-03, 100.98
2707081: BPT, 2001-03, 110.7
5413009: BPT, 2020-09, 160.45
5413009: DBP, 2006-02, 60.8
2884050: DBP, 2019-12, 70.44
2884050: Hgb, 2030-11, 17.1
2884050: BGT, 2025-10, 88.88
1782048: LDL, 2026-06, 87.53
4515046: BPT, 1999-06, 88.5
1431462: DBP, 2000-02, 76.55
1575872: DBP, 2003-02, 999.33
```

Add a new patient test:

```
Insert on of the menu
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
6. Delete a test
1
Enter the ID from 7 digits
1211769
Enter the test name with 3 characters
```


Search for a test by patient ID :

Retrieve all patient tests:

```
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
6. Delete a test
2
Enter the ID from 7 digits
2884050

Insert one of the menu

Insert one of the menu
1.Retrieve all patient tests
2.Retrieve all up normal patient tests:
3.Retrieve all patient tests in a given specific period
1
2884050: DBP, 2019-12, 70.44
2884050: Hgb, 2030-11, 17.1
2884050: BGT, 2025-10, 88.88
Insert on of the menu
1. Add a new medical test
```

Retrieve all up normal patient tests:

```
Insert one of the menu
1.Retrieve all patient tests
2.Retrieve all up normal patient tests:
3.Retrieve all patient tests in a given specific period
2
2884050: DBP, 2019-12, 70.44
2884050: Hgb, 2030-11, 17.1
2884050: BGT, 2025-10, 88.88
```

Insert one of the menu

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
6. Delete a test

2

Enter the ID from 7 digits

5413009

Insert one of the menu

1. Retrieve all patient tests
2. Retrieve all up normal patient tests:
3. Retrieve all patient tests in a given specific period

2

5413009: DBP, 2006-02, 60.8

Insert one of the menu

Retrieve all patient tests in a given specific period:

2

Enter the ID from 7 digits

2884050

Insert one of the menu

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 test date with 7 characters

2019-122884050: DBP, 2019-12, 70.44

Average test value:

Calculated values:

1. Hgb:

- Sum of scores: $15.80 + 14.2 + 98.19 + 17.1 = 145.29$
- Number of scores: 4
- Average = $145.29 / 4 \approx 36.32$

2. BGT:

- Sum of scores: $85.84 + 60.77 + 88.88 = 235.49$
- Number of scores: 3
- Average = $235.49 / 3 \approx 78.50$

3. LDL:

- Sum of scores: $90.3 + 100.98 + 87.53 = 278.81$
- Number of scores: 3
- Average = $278.81 / 3 \approx 92.94$

4. BPT:

- Sum of scores: $110.7 + 160.45 + 88.5 = 359.65$
- Number of scores: 3
- Average = $359.65 / 3 \approx 119.88$

5. DBP:

- Sum of scores: $60.8 + 70.44 + 76.55 + 999.33 = 1207.12$
- Number of scores: 4
- Average = $1207.12 / 4 \approx 301.78$



MIPS calculated values:

2. Search for a test by patient ID:

3. Search for unnorml tests

4. Average test value

5. Update an existing test

6. Delete a test

4

Hgb Averige: 36.322502

BGT Averige: 78.496666

LDL Averige: 92.93667

BPT Averige: 119.88333

DBP Averige: 301.78

Insert on of the menu

Update an existing test result:

Before updating on first row:

[illegible]

```
5
Enter the ID from 7 digits
1211769
Enter the test name with 3 characters
HgbEnter the test date with 7 characters
2019-08Enter the result
50.75
The data has been saved on the file
Insert on of the menu
```

After updating on first row:

Delete a test:

```

3. Search for unnormal tests
4. Average test value
5. Update an existing test
6. Delete a test
6
Enter the ID from 7 digits
1211769
Enter the test name with 3 characters
HgbEnter the test date with 7 characters
2019-08The data has been saved on the file

```

After deleting:

[illegible]

And: with row 8

```

1. Search for a test by patient ID
2. Add a new test
3. Search for unnormal tests
4. Average test value
5. Update an existing test
6. Delete a test
6
Enter the ID from 7 digits
5413009
Enter the test name with 3 characters
BPTEnter the test date with 7 characters
2020-09The data has been saved on the file

```

1	6216728:	LDL,	2021-03,	60.52	
2	8104904:	Hgb,	2003-05,	14.2	
3	1382071:	Hgb,	1990-01,	98.19	
4	1382071:	BGT,	2020-01,	85.84	
5	8233056:	BGT,	2020-01,	60.77	
6	2707081:	LDL,	2009-09,	90.3	
7	2707081:	BPT,	2001-03,	110.7	
8	5413009:	DBP,	2006-02,	60.8	
9	2884050:	DBP,	2019-12,	70.44	
10	2884050:	Hgb,	2030-11,	17.1	
11	2884050:	BGT,	2025-10,	88.88	
12	1782048:	LDL,	2026-06,	87.53	
13	4515046:	BPT,	1999-06,	88.5	
14	1431462:	DBP,	2000-02,	76.55	
15	1575872:	DBP,	2003-02,	999.33	
16	NUL	575872:	DBP,	2003-02,	999.33
17	NUL	NUL	NUL	NUL	NUL

Second sample:

5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 14.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
7788990: Hgb, 2009-09, 5.9
4455667: DBP, 2005-01, 18.89
1122334: DBP, 2002-09, 19.98
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14

Add a new patient test:

```
Insert on of the menu
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
6. Delete a test
1
Enter the ID from 7 digits
1211243

1
Enter the ID from 7 digits
1211243
Enter the test name with 3 characters
LDLEnter the test date with 7 characters
2000-02Enter the result
17.17
The data has been saved on the file
```

New test saved into the file :

```
1211243: LDL, 2000-02, 17.17
5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 14.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
7788990: Hgb, 2009-09, 5.9
4455667: DBP, 2005-01, 18.89
1122334: DBP, 2002-09, 19.98
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14
```

Search for a test by patient ID :

Retrieve all patient tests:

```
The data has been saved on the file
Insert one of the menu
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
6. Delete a test
2
Enter the ID from 7 digits
1010111

Insert one of the menu
1.Retrieve all patient tests
2.Retrieve all up normal patient tests:
3.Retrieve all patient tests in a given specific period
1
1010111: BGT, 2002-06, 14.14
1010111: Hgb, 2020-11, 11.10
```

Retrieve all up normal patient tests:

```
Insert on of the menu
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
6. Delete a test
2
Enter the ID from 7 digits
4455667

Insert one of the menu
1.Retrieve all patient tests
2.Retrieve all up normal patient tests:
3.Retrieve all patient tests in a given specific period
2
4455667: DBP, 2005-01, 18.89
```

Retrieve all patient tests in a given specific period:

```
Insert on of the menu
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
6. Delete a test
2
Enter the ID from 7 digits
3344556

Insert one of the menu
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 test date with 7 characters
2008-033344556: Hgb, 2008-03, 19.39
```

Average test value:

Calculated values:

1. Hgb:

- Sum of scores: $19.39 + 5.9 + 11.1 + 19.2 = 55.59$
- Number of scores: 4
- Average = $55.59/4 \approx 13.8975$

2. BGT:

- Sum of scores: $3.29 + 80.14 + 15.11 + 18.39 = 116.93$
- Number of scores: 4
- Average = $116.93/4 \approx 29.2325$

3. LDL:

- Sum of scores: $17.17 + 6.59 + 13.9 + 14.39 + 10.14 = 62.19$
- Number of scores: 5
- Average = $62.19/5 \approx 12.438$

4. BPT: NO TESTS

5. DBP:

- Sum of scores: $11.1 + 18.89 + 19.98 + 10.19 = 60.16$
- Number of scores: 4
- Average = $60.16/4 \approx 15.04$

MIPS calculated values:

Insert on of the menu

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
6. Delete a test

4

Hgb Averige: 13.8975

BGT Averige: 29.2325

LDL Averige: 12.438

BPT Averige: NaN

DBP Averige: 15.04

Update an existing test result:

Before updating on first row:

```
1211243: LDL, 2000-02, 17.17
5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 80.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
7788990: Hgb, 2009-09, 5.9
4455667: DBP, 2005-01, 18.89
1122334: DBP, 2002-09, 19.98
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14
```

Let's update its result:

```
Insert on of the menu
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
6. Delete a test
5
Enter the ID from 7 digits
1211243
Enter the test name with 3 characters
LDLEnter the test date with 7 characters
2000-02Enter the result
54.54
The data has been saved on the file
```

After updating on first row:

```
1211243: LDL, 2000-02, 54.54
5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 80.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
7788990: Hgb, 2009-09, 5.9
4455667: DBP, 2005-01, 18.89
1122334: DBP, 2002-09, 19.98
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14
```

Delete a test:

(As you can see, we have 17 records)

```
7788990: Hgb, 2009-09, 88.81
1122334: DBP, 2002-09, 20.19
1211243: LDL, 2000-02, 54.54
5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 80.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
4455667: DBP, 2005-01, 18.89
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14
```

```

Insert on of the menu
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
6. Delete a test
6
Enter the ID from 7 digits
7788990
Enter the test name with 3 characters
HgbEnter the test date with 7 characters
2009-09The data has been saved on the file

```

Test is gone:
(We have 16 records left after deletion)

```

1122334: DBP, 2002-09, 20.19
1211243: LDL, 2000-02, 54.54
5566778: BGT, 2010-05, 3.29
8899001: LDL, 2006-07, 6.59
1010111: BGT, 2002-06, 80.14
6677889: DBP, 2020-07, 11.10
3344556: Hgb, 2008-03, 19.39
4455667: DBP, 2005-01, 18.89
5566778: LDL, 2002-09, 13.9
8899001: BGT, 2004-05, 15.11
1010111: Hgb, 2020-11, 11.10
6677889: LDL, 2020-02, 14.39
3344556: BGT, 2018-04, 18.39
7788990: DBP, 2019-03, 10.19
4455667: Hgb, 2020-06, 19.20
1122334: LDL, 2020-02, 10.14

```