

# **Computer organization**

Input:

S, CL, B => Size, Cache Line, Block

Instruction => Associative or Direct or Set (Case sensitive)

T       => Size of Test Case

Command => 0 (if operation is searching) 1 (if operation is inserting)

```
If (Command == 1) {
```

```
    Address
```

```
}
```

```
Else {
```

```
    Data
```

```
    Address
```

```
}
```

Output:

If reading

Print data of address or print Miss

If writing

If data is already present then it will update data

## Test Cases 1

```
10
8
64

Associative
8

0
00000000000011111011000111 123

1
00000000000011111011000111

0
10000000000011111011000111 400

1
10000000000011111011000111

0
10010000000011111011010111 220

1
10010000000011111011010111

0
10110000000011111011011111 83145

1
10110000000011111011011111
```

## Test Case 2

```
10
8
64

Direct

8

0
0000000000001111011000111 123

1
0000000000001111011000111

0
1000000000001111011000111 400

1
1000000000001111011000111

0
1001000000001111011010111 220

1
1001000000001111011010111

0
1011000000001111011011111 83145

1
1011000000001111011011111
```

## Test Case 3

10

8

64

Set

8

0

1111110000101011000110000 123

1

1111110000101011000110000

0

1111010000101011000110000 400

1

1111010000101011000110000

0

1001110000101011000110000 220

1

1001110000101011000110000

0

1001110010101011000110100 83145

1

1001110010101011000110100

File Edit Selection View Go Run Terminal HelpMain.java - ComputerOrganizationAssignment - Visual Studio Code

RUN

▼ RUN

Run and Debug

To customize Run and Debug create a launch.json file.

Set.txt

CO testCase.txt

Direct.txt

Main.java X

1 package Main;

2

3 import java.util.HashMap;

4 import java.io.BufferedReader;

5 import java.io.IOException;

6 import java.io.InputStream;

7 import java.io.InputStreamReader;

8 import java.util.StringTokenizer;

9

10

11 /\*\* Class for buffered reading int and double values \*/

12 class Reader {

13 static BufferedReader reader;

14 static StringTokenizer tokenizer;

15

16 /\*\* call this method to initialize reader for InputStream \*/

17 static void init(InputStream input) {

18 reader = new BufferedReader(

19 new InputStreamReader(input) );

20 tokenizer = new StringTokenizer("");

21 }

22

23 /\*\* get next word \*/

24 static String next() throws IOException {

25 while ( ! tokenizer.hasMoreTokens() ) {

26 tokenizer = new StringTokenizer(

27 reader.readLine() );

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

1: Java Debug Console

HIT

MISS!! Data not found at Address --> 100101000000111110110110

HIT

83145 at Address -->101100000000111101101111

PS C:\Users\harsh\OneDrive\Documents\ComputerOrganizationAssignment>

EXCEPTION BREAKPOINTS

BREAKPOINTS

master Python 3.7.4 64-bit

0 0 0

Connect

Server not selected

amd64

Ln 20, Col 45

Spaces: 4

UTF-8

CRLF

Java

gpg (GnuPG) GnuPG not available!

CO testCase.txt - ComputerOrganizationAssignment - Visual Studio Code

File Edit Selection View Go Run Terminal Help

CO testCase.txt

1 10  
2 8  
3 64  
4  
5 Associative  
6 8  
7  
8 0  
9 0000000000011111011000111 123  
10  
11 1  
12 0000000000011111011000111  
13  
14 0  
15 1000000000011111011000111 400  
16  
17 1  
18 1000000000011111011000111  
19  
20 0  
21 10010000000111110110111 220  
22  
23 1  
24

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Java Debug Console

1  
1011000000011111011011111  
HIT  
MISS!! Data not found at Address --> 0000000000011111011000111  
HIT  
400 at Address --> 1000000000011111011000111  
HIT  
MISS!! Data not found at Address --> 10010000000111110110110  
HIT  
83145 at Address --> 1011000000011111011011111  
PS C:\Users\harsh\OneDrive\Documents\ComputerOrganizationAssignment>

master Python 3.7.4 64-bit

Ln 32, Col 1 (313 selected) Spaces: 4 UTF-8 CRLF Django.txt gpg (GnuPG) GnuPG not available

CO testCase.txt

1 10  
2 8  
3 64  
4  
5 Set  
6  
7 8  
8  
9 0  
10 1111110000101011000110000 123  
11  
12 1  
13 1111110000101011000110001  
14  
15 0  
16 1111010000101011000110000 400  
17  
18 1  
19 1111010000101011000110000  
20  
21 0  
22 1001110000101011000110000 220  
23  
24

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Java Debug Console

1  
1001110000101011000110000  
0  
10011100101011000110100 83145  
1  
10011100101011000110100  
HIT  
MISS!! Data not found at Address --> 1111110000101011000110001  
HIT  
400 At Address --> 1111010000101011000110000  
HIT  
220 At Address --> 1001110000101011000110000  
HIT  
83145 At Address --> 10011100101011000110100  
PS C:\Users\harsh\OneDrive\Documents\ComputerOrganizationAssignment>

master Python 3.7.4 64-bit

Ln 32, Col 1 (297 selected) Spaces: 4 UTF-8 CRLF Django.txt gpg (GnuPG) GnuPG not available

