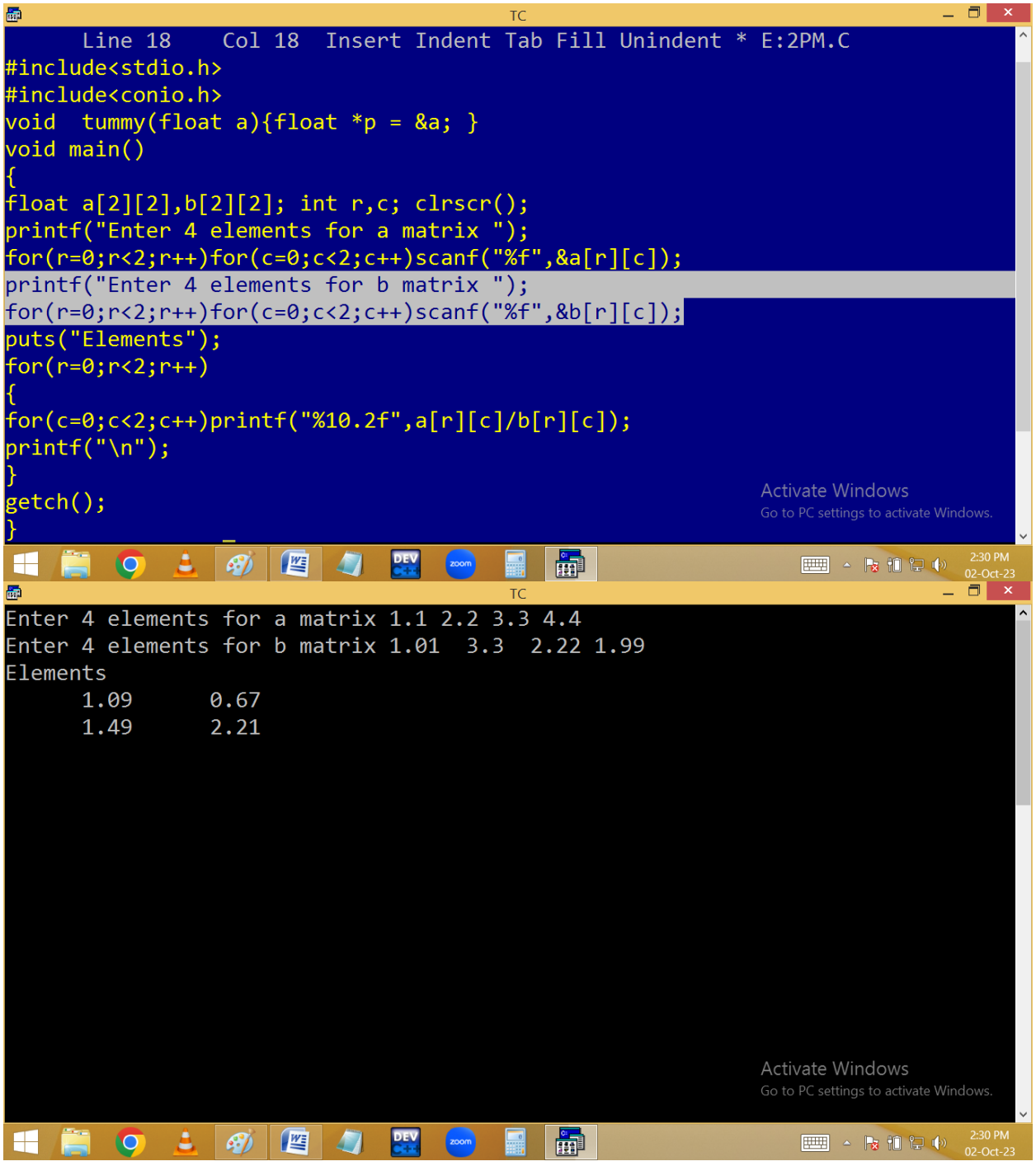
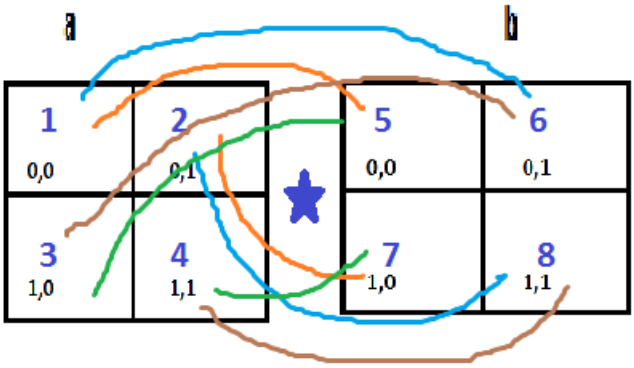
Finding fractions of n*n matrix i.e. a/b:



Matrix multiplication:

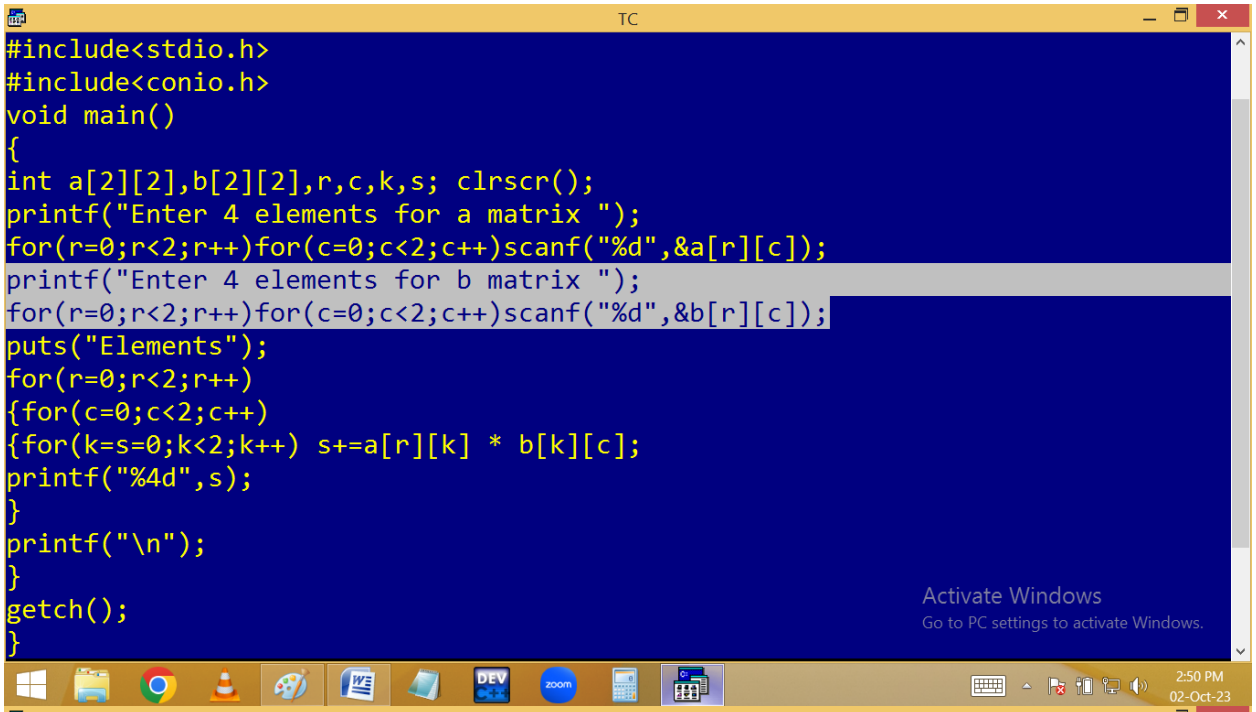


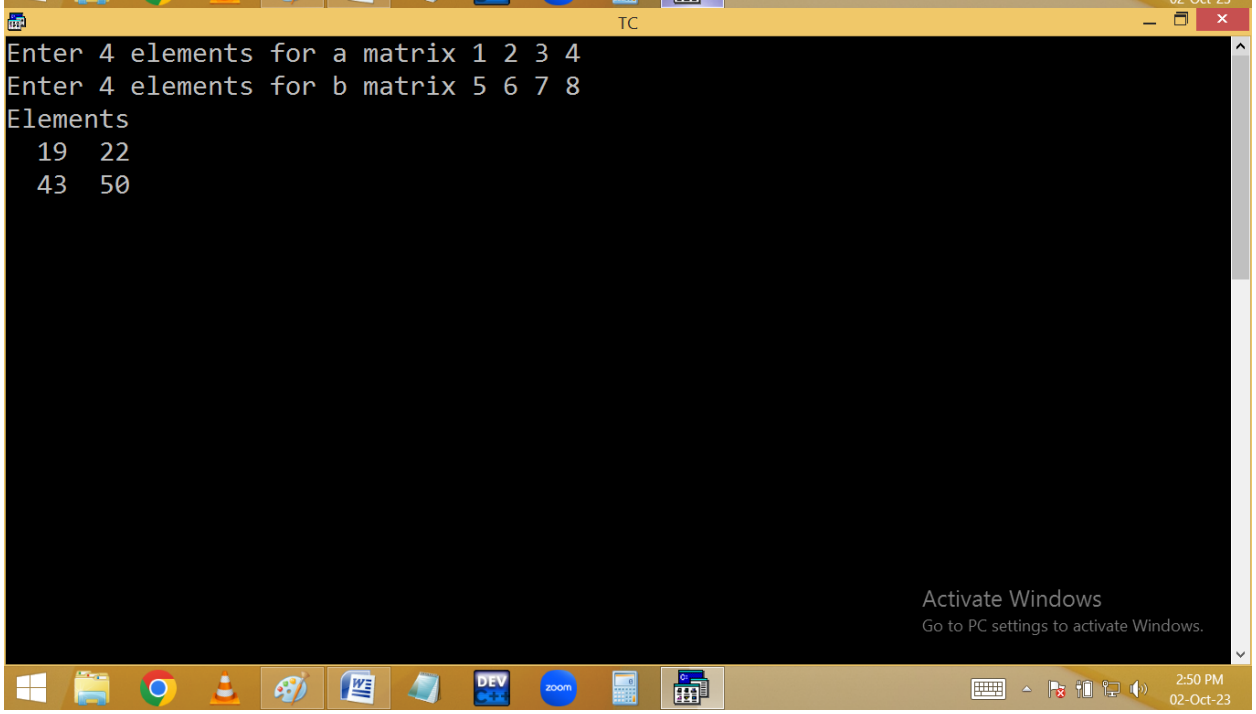
1*5+2*7=19

1*6+2*8=22

3*5+4*7=43

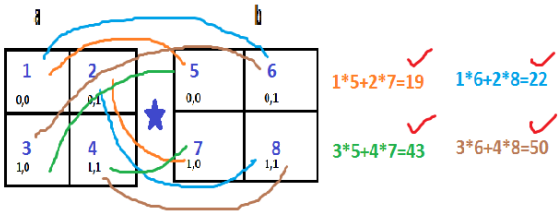
3*6+4*8=50


TC
#include<stdio.h>
#include<conio.h>
void main()
{
int a[2][2],b[2][2],r,c,k,s; clrscr();
printf("Enter 4 elements for a matrix ");
for(r=0;r<2;r++)for(c=0;c<2;c++)scanf("%d",&a[r][c]);
printf("Enter 4 elements for b matrix ");
for(r=0;r<2;r++)for(c=0;c<2;c++)scanf("%d",&b[r][c]);
puts("Elements");
for(r=0;r<2;r++)
{for(c=0;c<2;c++)
{for(k=s=0;k<2;k++) s+=a[r][k] * b[k][c];
printf("%4d",s);
}
printf("\n");
}
getch();
}
Activate Windows
Go to PC settings to activate Windows.
2:50 PM
02-Oct-23


TC
Enter 4 elements for a matrix 1 2 3 4
Enter 4 elements for b matrix 5 6 7 8
Elements
19 22
43 50
Activate Windows
Go to PC settings to activate Windows.
2:50 PM
02-Oct-23

```
for(r=0;r<2;r++)
{
for(c=0;c<2;c++)
{   s=0;
for(k=0;k<2;k++)
{
s+=a[r][k] * b[k][c];
} p(s);
} p("\n");
}
```

r	c	k	s
0	0	012	0+1*5=5+2*7=19
0	1	012	0+1*6=6+2*8=22
1	0	012	0+3*5=15+4*7=43
1	1	012	0+3*6=18+4*8=50



3-dimensional arrays:

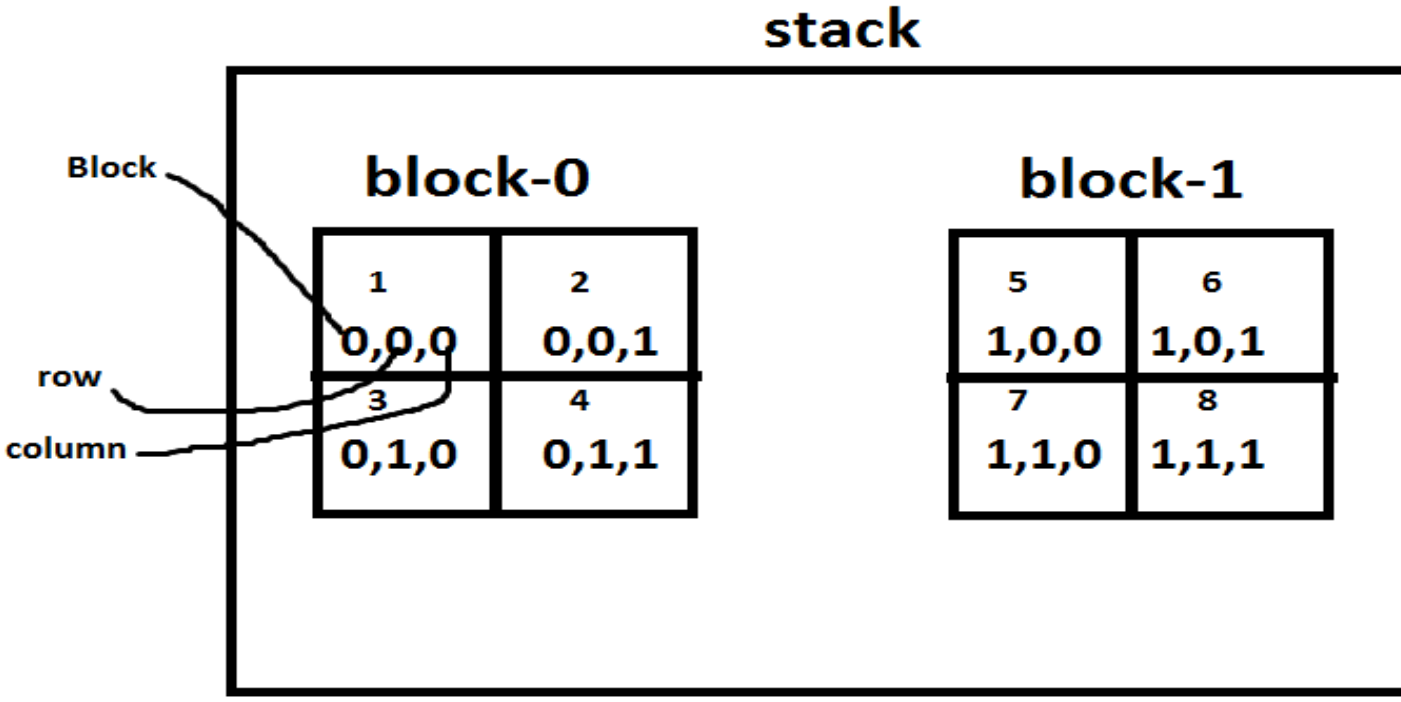
An array with several blocks, rows and columns.

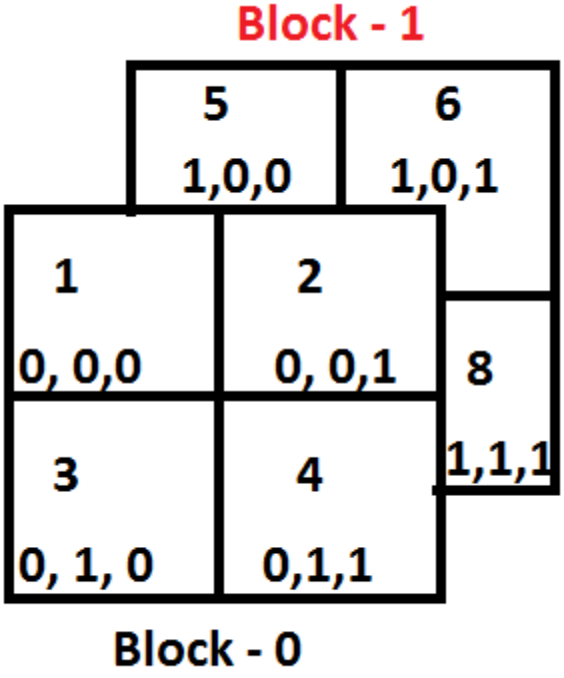
An array with 3 subscripting operators [ ] [ ] [ ].

Syntax:

datatype variable [blocks] [rows] [columns];

Eg: int a[2][2][2]={1,2,3,4,5,6,7,8};


stack
Block
block-0
block-1
row
column
1
0,0,0
2
0,0,1
3
0,1,0
4
0,1,1
5
1,0,0
6
1,0,1
7
1,1,0
8
1,1,1

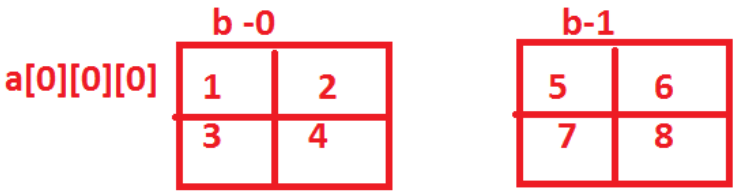

Block - 1
5
1,0,0
6
1,0,1
1
0, 0,0
2
0, 0,1
8
1,1,1
3
0, 1, 0
4
0,1,1
Block - 0

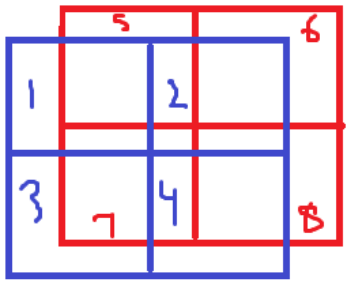
Eg:

rows

int a[2][2][2]; an array with 3 subscripts [ ].

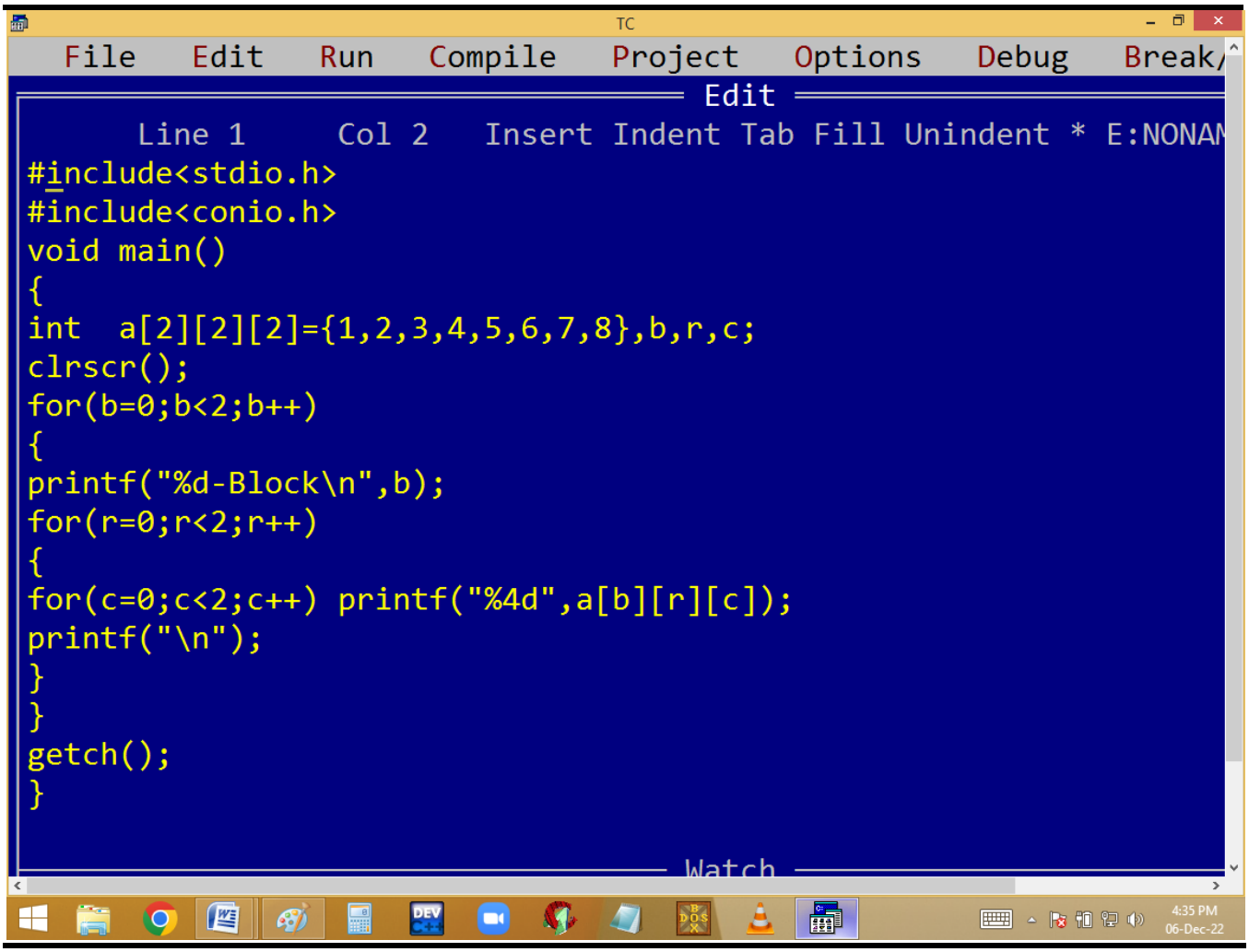
blocks columns

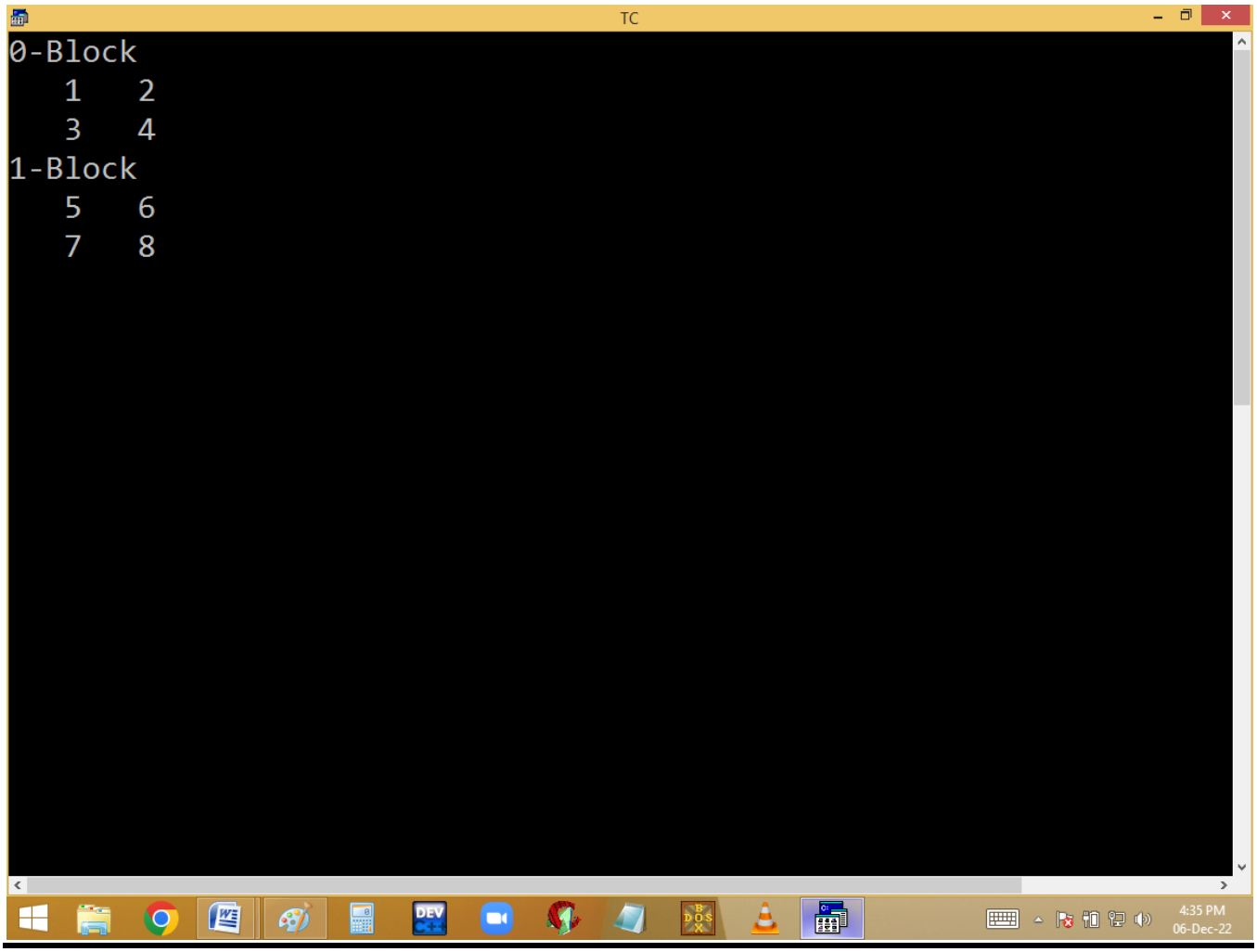




eg: int class[2][60][6];

datatype class[sections][stus][marks];





4-dimensional array:

An array with several sets, blocks, rows and columns.

An array with 4 subscripting operators [ ] [ ] [ ] [ ]

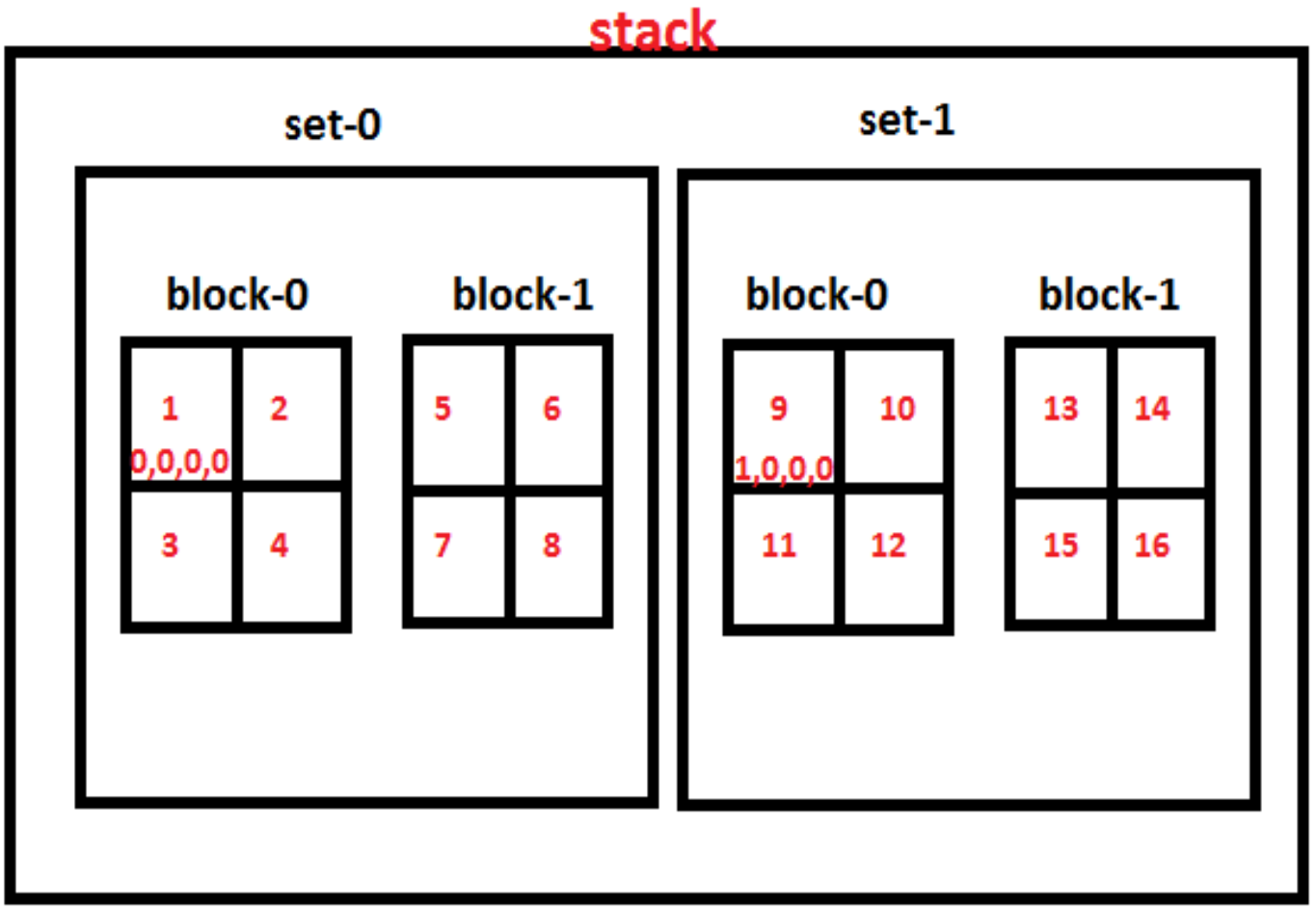
.

Syntax:

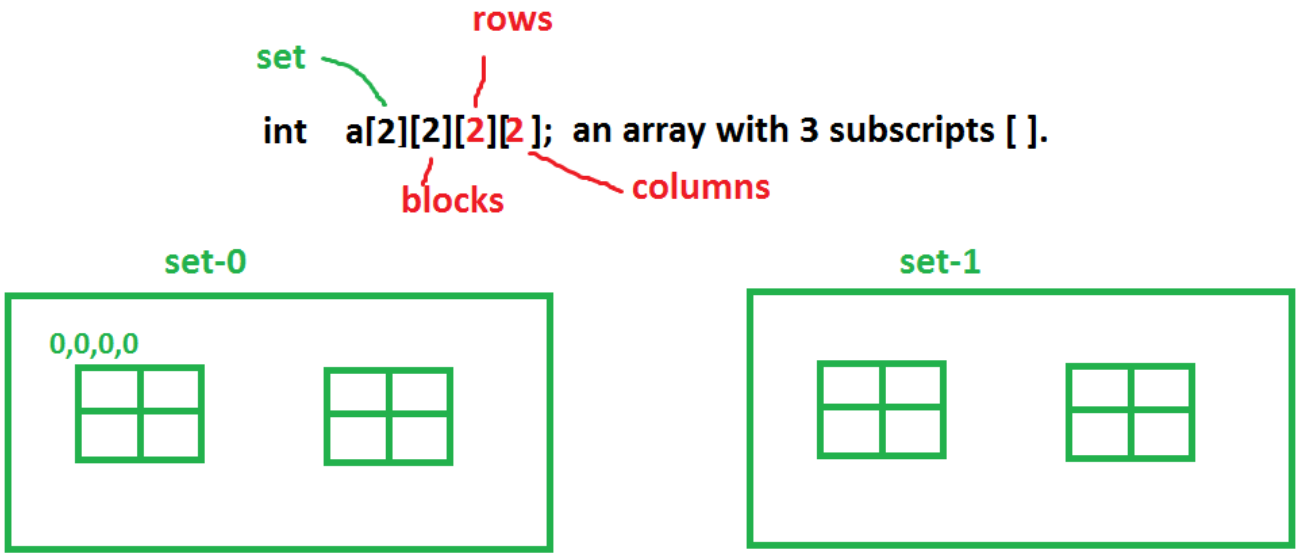
datatype variable [sets] [blocks] [rows] [cols];

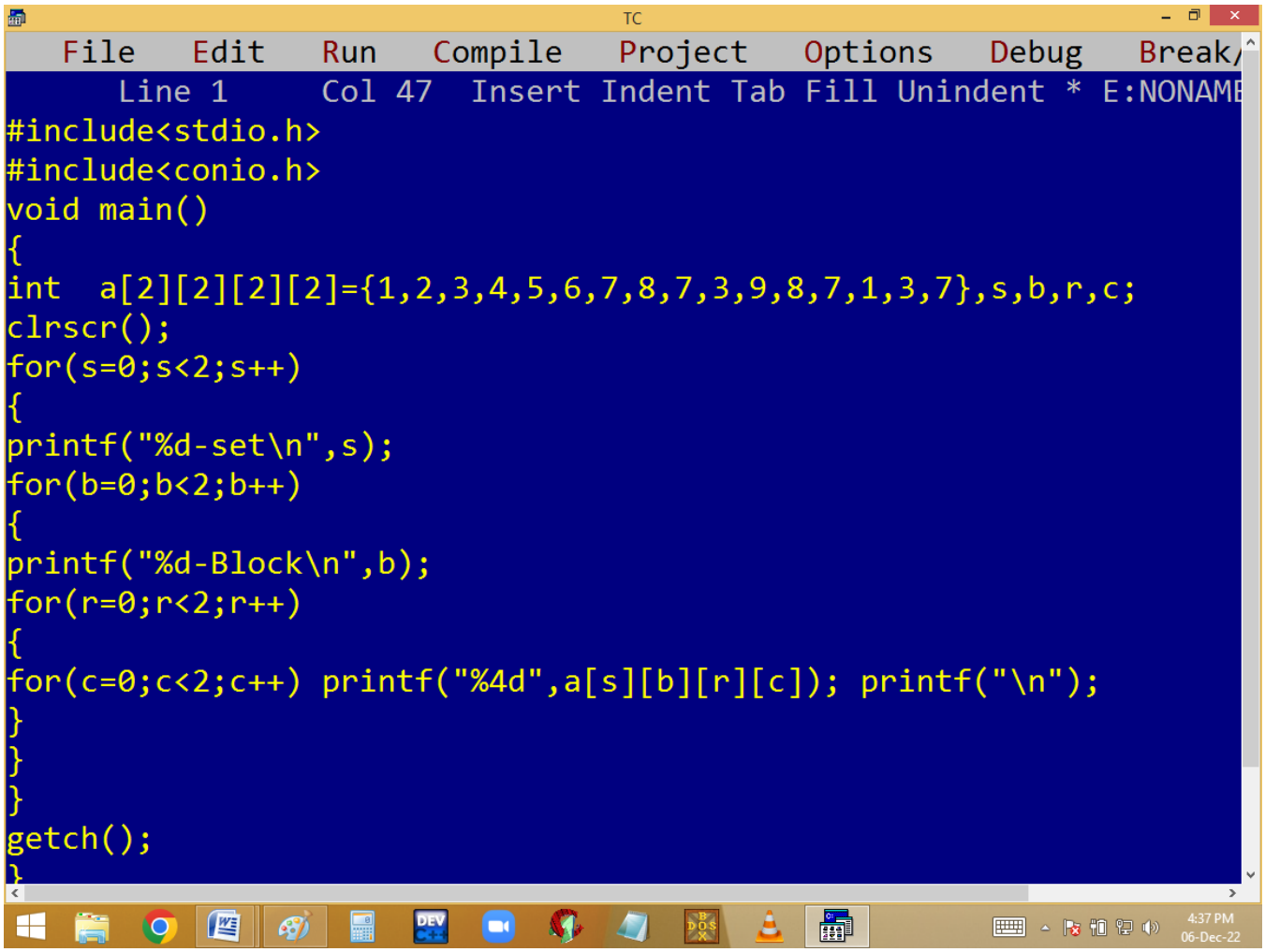
eg:

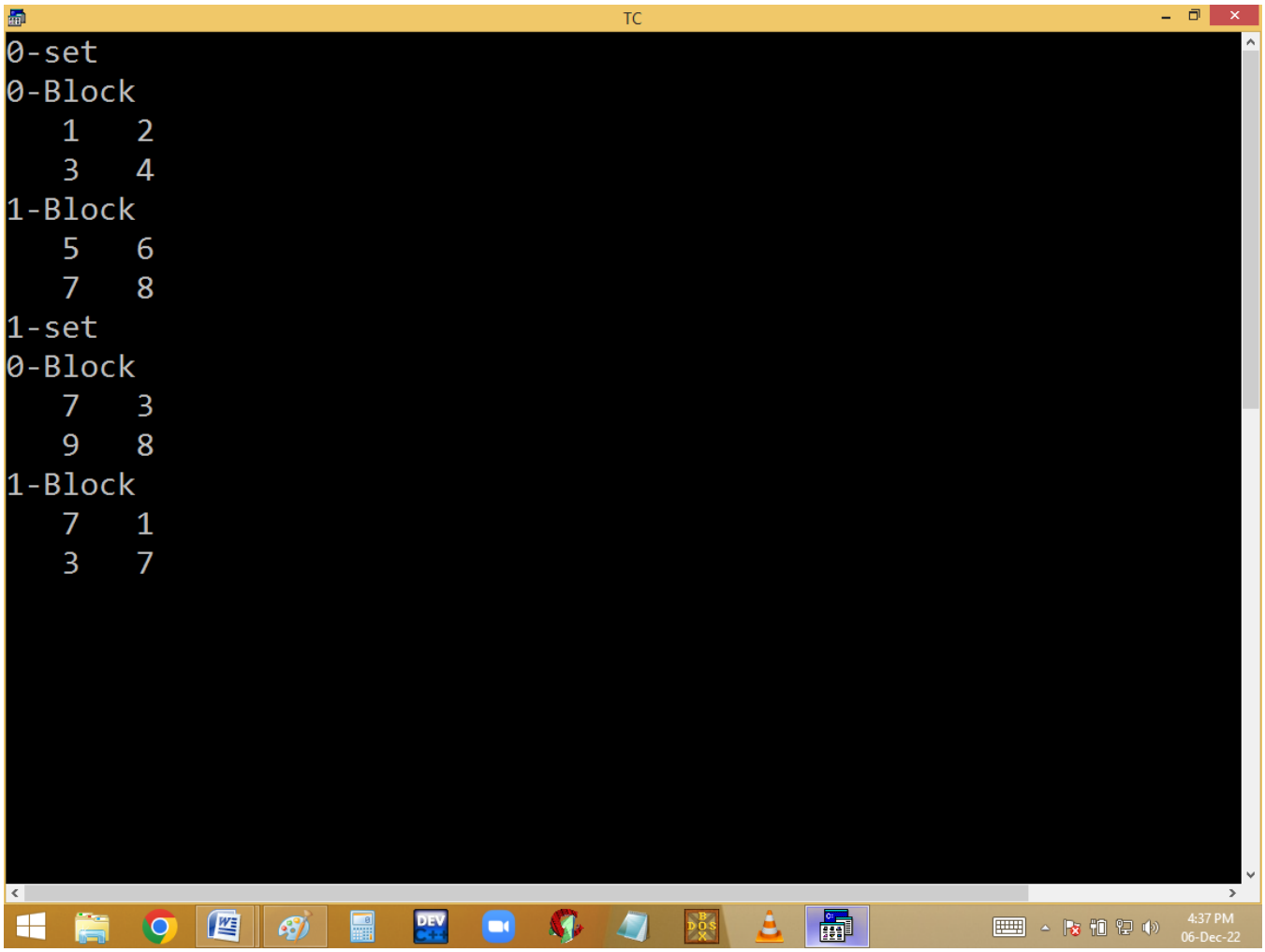
int a[2] [2] [2] [2]= {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16};



datatype var[class][sec][stu][marks];
int school[5][2][60][6];




TC
File Edit Run Compile Project Options Debug Break/
Line 1 Col 47 Insert Indent Tab Fill Unindent * E:NONAME
#include<stdio.h>
#include<conio.h>
void main()
{
int a[2][2][2][2]={1,2,3,4,5,6,7,8,7,3,9,8,7,1,3,7},s,b,r,c;
clrscr();
for(s=0;s<2;s++)
{
printf("%d-set\n",s);
for(b=0;b<2;b++)
{
printf("%d-Block\n",b);
for(r=0;r<2;r++)
{
for(c=0;c<2;c++) printf("%4d",a[s][b][r][c]); printf("\n");
}
}
}
getch();
}
4:37 PM
06-Dec-22



STRINGS

- A group of characters is called string.
- It is one dimensional character array.
- It is alpha-numeric.
- It is an implicit pointer.
- It is a derived data type.

Note:

- One byte should be left for Null char(\0). Otherwise we are getting garbage or junk values. Null char indicates string is completed.
- String variable Size can't be less than string. Otherwise we are getting error.
- Using = operator, we can't copy a string into another. We have to use strcpy() or copy character by character manually.
- Using == (comparison) operator, we can't compare two strings. Use strcmp() or compare the characters one by one manually.

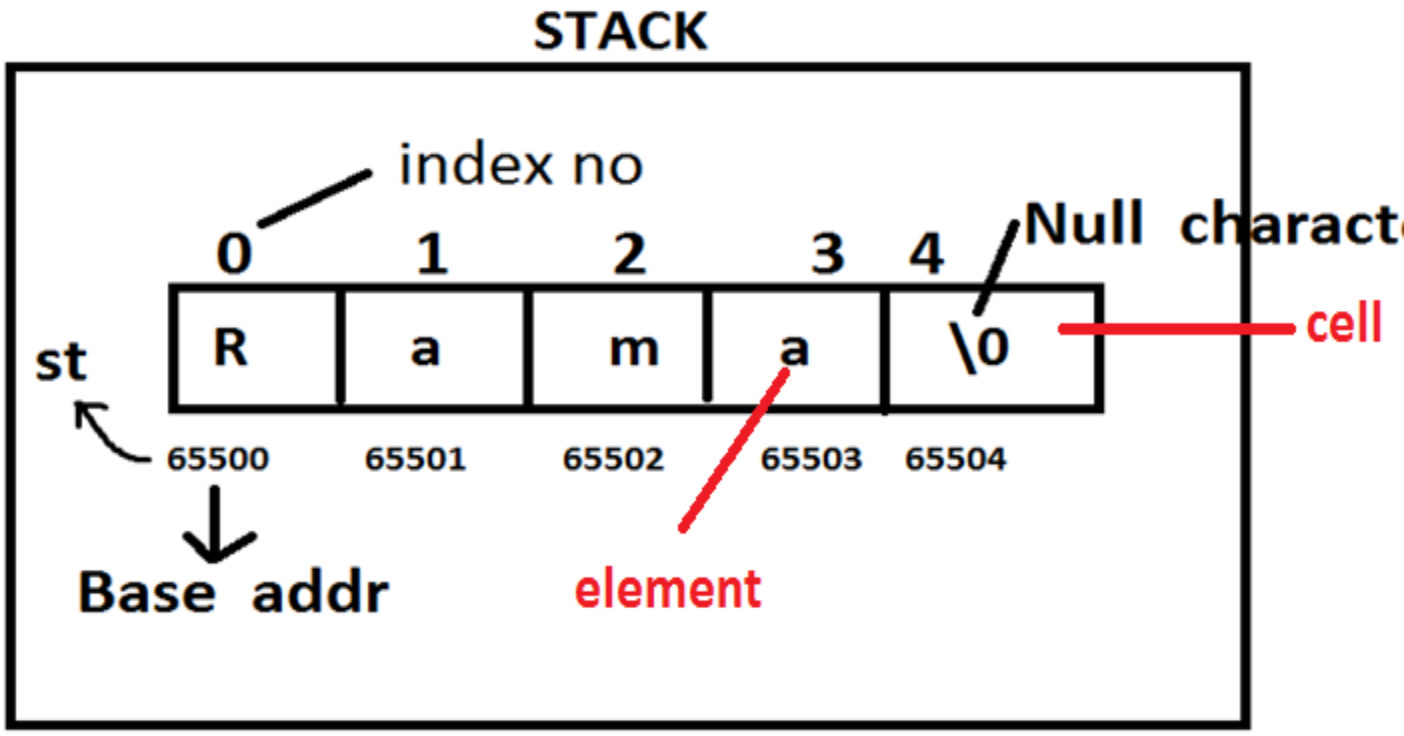
Syntax:

char variable [size] = "string";

or

char variable[ ]="string";

Eg: char st[5] = "Rama";



Note: String is implicit pointer because of string variable stores base address.

String declaration methods:

char st [5] =”rama”; Ok

char st [20] =” Naresh It”; Ok

char st [4] = { ‘r’, ‘a’, ‘m’ }; Ok → char array.

char st[3]= “ram”; It gives garbage values in printing.

char st [3] = “rama”; error

char st[0]; error

char st[0]=”abc”; Ok

char st[-5]; error

char st[5.5]; error

char st[5%3]; Ok ➔ char st[2];

char st[3+2]; ➔ st[5] ➔ Ok

char st[ ] =”Ram”; Ok.

char st[ ] ; error

int n=20;

char st[n]; No

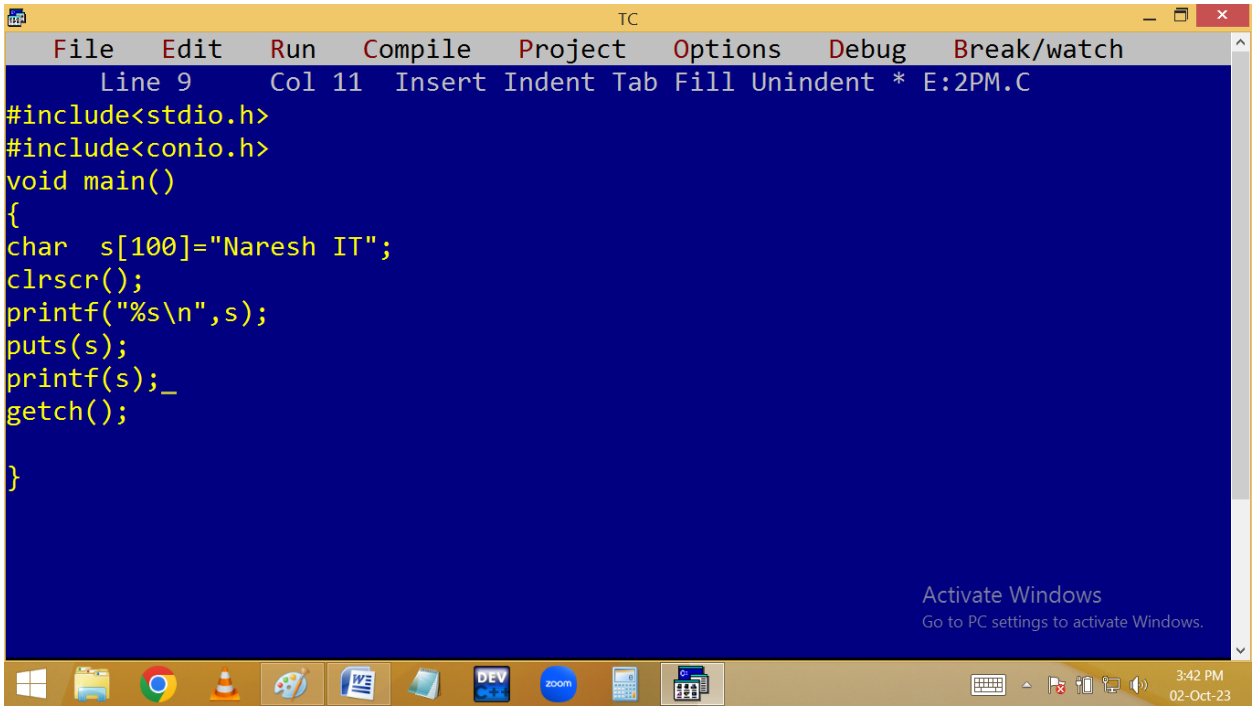
#define n 20

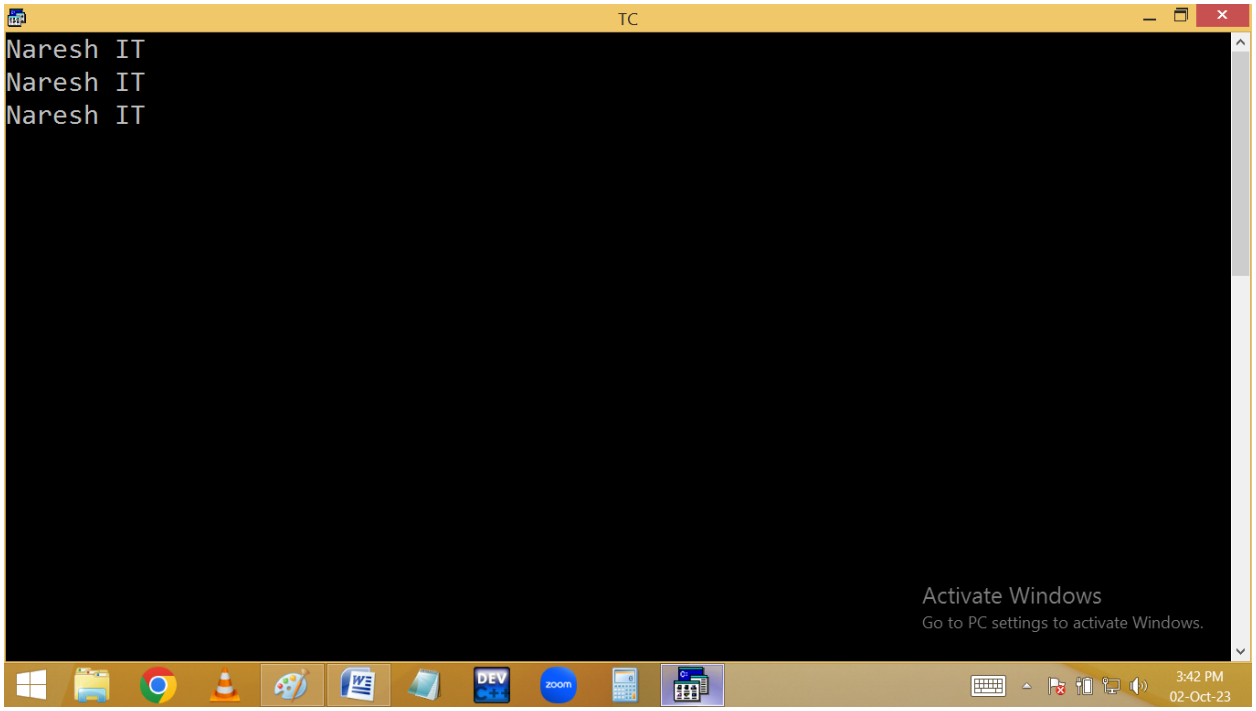
char st[n]; Ok

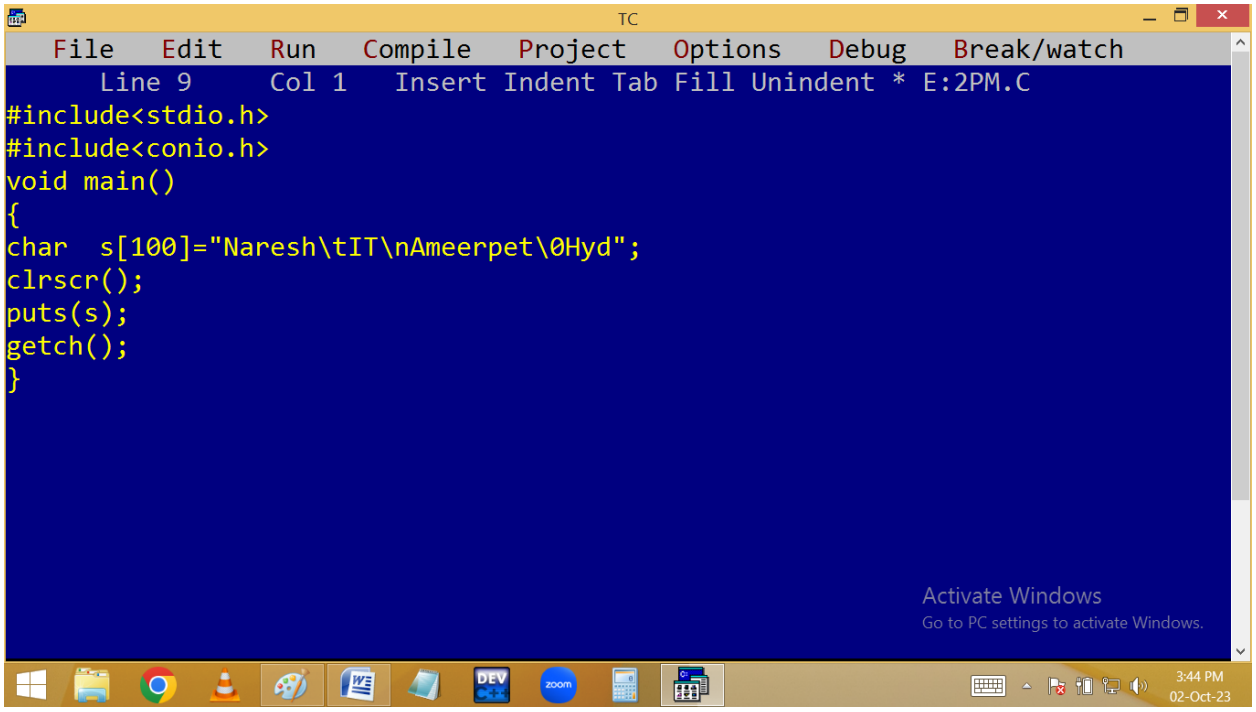
Note: String variable size always constant positive integer value.

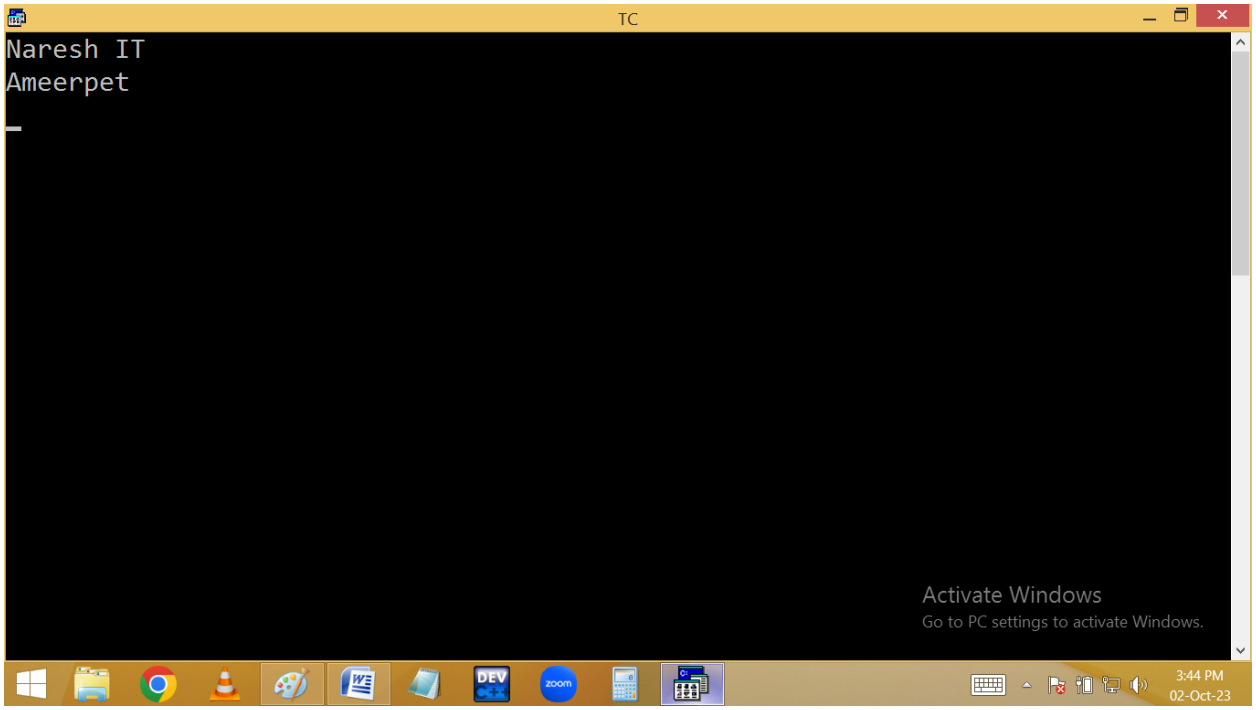
Eg:

Direct initialization of a string:




TC
Naresh IT
Naresh IT
Naresh IT
Activate Windows
Go to PC settings to activate Windows.
3:42 PM
02-Oct-23


TC
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
char s[100]="Naresh\tIT\nAmeerpet\0Hyd";
clrscr();
puts(s);
getch();
}
Activate Windows
Go to PC settings to activate Windows.
3:44 PM
02-Oct-23


TC
Naresh IT
Ameerpet
Activate Windows
Go to PC settings to activate Windows.
3:44 PM
02-Oct-23