

Indian Institute of Information Technology, Vadodara
International Campus Diu



CS LAB –1

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Q1(a)

```
#include<stdio.h>

int swap(int *a,int *b)
{
    int temp=*a;
    *a = *b;
    *b = temp;
}
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);
    int a[n];
    printf("Enter array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }

    printf("Entered array\n");

    for(int i=0;i<n;i++)
    {
        printf("%d",a[i]);
    }
    printf("\n");

    printf("Reversed array\n");

    for(int i=0;i<=n/2;i++)
    {
        swap(&a[i],&a[n-i-1]);
    }

    for(int i=0;i<n;i++)
    {
        printf("%d",a[i]);
    }
}
```

Output:-

The screenshot shows the Dev-C++ IDE with a project named "D:\DS LAB1 (202211028)\Q1 a\Reverse_Array.cpp". The program is being executed, and the output is displayed in a black console window. The output shows the user entering the value of n as 5, the array elements as 1 2 3 4 5, the entered array as 12345, and the reversed array as 54321. The process exited after 4.11 seconds with a return value of 0. The status bar at the bottom indicates the current line is 15, column is 29, and the file has 44 lines and 540 characters.

```
Enter the value of n
5
Enter array
1 2 3 4 5
Entered array
12345
Reversed array
54321
-----
Process exited after 4.11 seconds with return value 0
Press any key to continue . . .
```

Compilation Time: 0.34s

Line: 15 Col: 29 Sel: 0 Lines: 44 Length: 540 Insert Done parsing in 0 seconds

Q1(b)

```
#include<stdio.h>

int swap(int *a,int *b)
{
    int temp=*a;
    *a = *b;
    *b = temp;
}

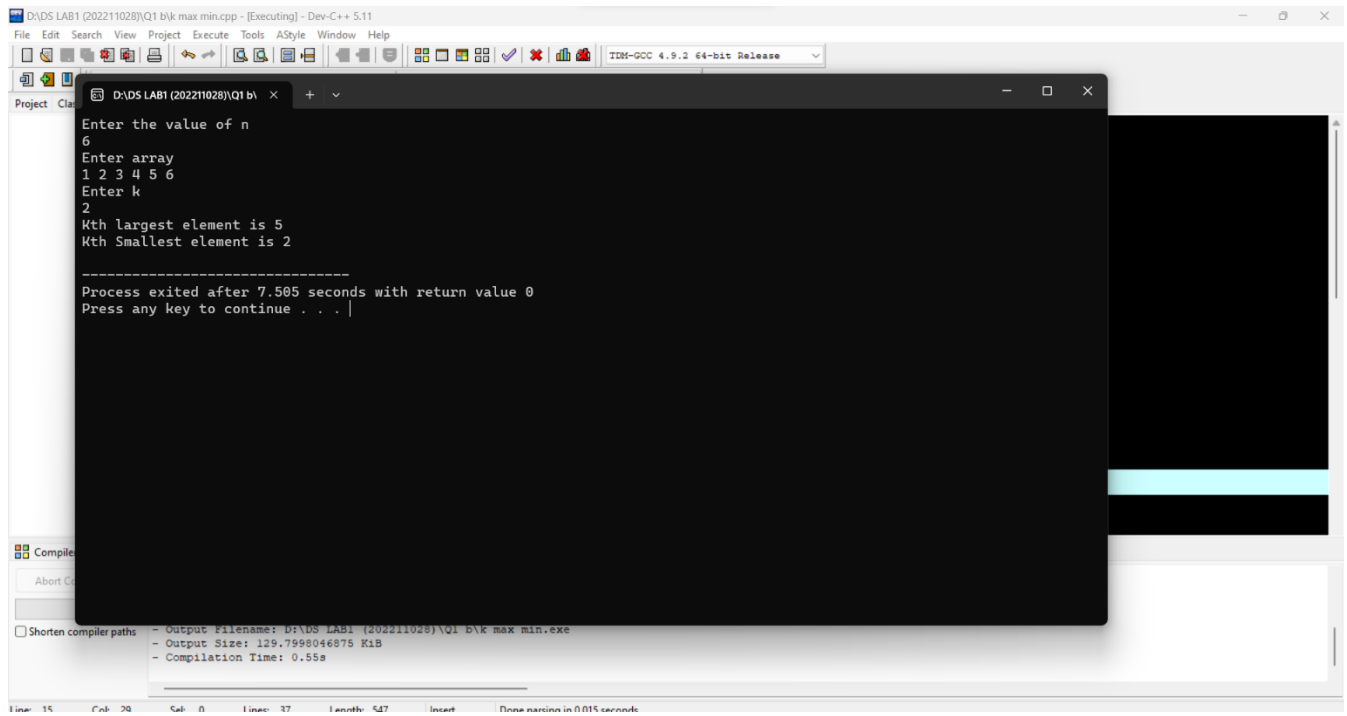
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }

    for(int i=0;i<n-1;++i)
    {
        for(int j=0;j<n-i-1;++j)
        {
            if(a[j]>a[j+1])
                swap(&a[j],&a[j+1]);
        }
    }
    printf("Enter k\n");
    int k;
    scanf("%d",&k);

    printf("Kth largest element is %d \n",a[n-k]);
    printf("Kth Smallest element is %d \n",a[k-1]);
}
```

Output:-



```
D:\DS LAB1 (202211028)\Q1 b\k max min.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
D:\DS LAB1 (202211028)\Q1 b\k max min.exe
Enter the value of n
6
Enter array
1 2 3 4 5 6
Enter k
2
Kth largest element is 5
Kth Smallest element is 2

-----
Process exited after 7.505 seconds with return value 0
Press any key to continue . . . |

Compiler Output:
Shorten compiler paths - Output Filename: D:\DS LAB1 (202211028)\Q1 b\k max min.exe
                        - Output Size: 129.7998046875 KiB
                        - Compilation Time: 0.55s
Time: 15s  Comp: 20s  Cdb: 0  Lines: 37  Length: 547  Inset  Done parsing in 0.015 seconds
```

Q1(c)

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter the value of array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }

    int k;
    printf("Enter the k\n");

    scanf("%d",&k);

    for(int i=0;i<n;i++)
    {
        int sum =a[i];
        if(sum == k)
        {

            printf("Sub array is %d\n",a[i]);

            break;

        }
        else
        {

            for(int j=i+1;j<n;j++)
            {
                sum = sum +a[j];
                if(sum == k)
                {
                    printf("Sub array is \n");
                    for(int k=i;k<=j;k++)
                    {
                        printf("%d",a[k]);
                    }
                    printf("\n");
                    return 0;
                }
            }
        }
    }
}
```

```

    }

}

printf("No sub array found\n");
}

```

Output:-

```

1 #include<stdio.h>
2 int main()
{
    Enter the value of n
    5
    Enter the value of array
    1 2 3 4 5
    Enter the k
    6
    Sub array is
    123

    -----
    Process exited after 18.19 seconds with return value 0
    Press any key to continue . . . |
}

```

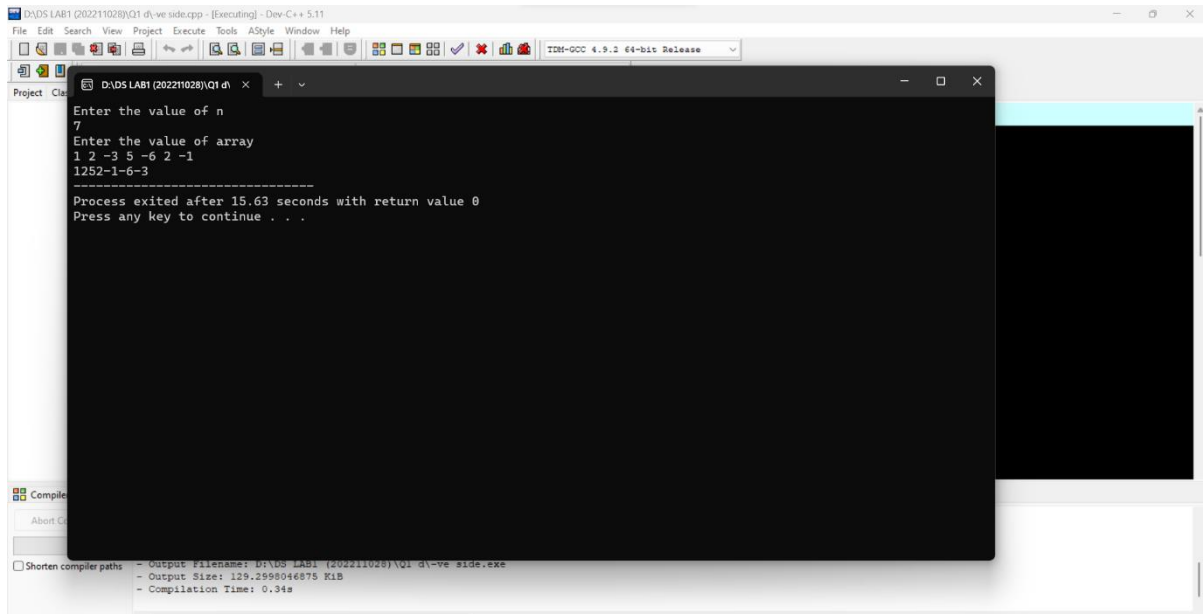
Q1(d)

```
#include<stdio.h>
int swap(int *a,int *b)
{
    int temp=*a;
    *a = *b;
    *b = temp;
}
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter the value of array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    int v=0;
    for(int i=0;i<n;i++)
    {
        if(a[i]<0)
            v++;
    }

    for(int i=0;i<n;i++)
    {
        for(int j=i+1;j<n;j++)
        {
            if(a[i]<0)
                swap(&a[i],&a[j]);
        }
    }
    for(int i=0;i<n;i++)
    {
        printf("%d",a[i]);
    }
    return 0;
}
```


Output:-



```
D:\DS LAB1 (202211028)\Q1 d\~ve side.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
D:\DS LAB1 (202211028)\Q1 d\~ve side.exe
Enter the value of n
7
Enter the value of array
1 2 -3 5 -6 2 -1
1252-1-6-3
-----
Process exited after 15.63 seconds with return value 0
Press any key to continue . . .
```

Compile
About C
Shorten compiler paths
- Output filename: D:\DS LAB1 (202211028)\Q1 d\~ve side.exe
- Output Size: 129.2998046875 KiB
- Compilation Time: 0.34s

Q1(e)

```
#include<stdio.h>
int rep(int a[],int n)
{
    for(int i=0;i<n;i++)
    {
        for(int j=i+1;j<n;j++)
        {
            if(a[i]==a[j])
            {
                return a[i];
            }
        }
    }
    return -1;
}

int nonrep(int a[],int n)
{
    for(int i=0;i<n;i++)
    {
        for(int j=0;j<n;j++)
        {
            if(a[i]==a[j] && i!=j)
                break;

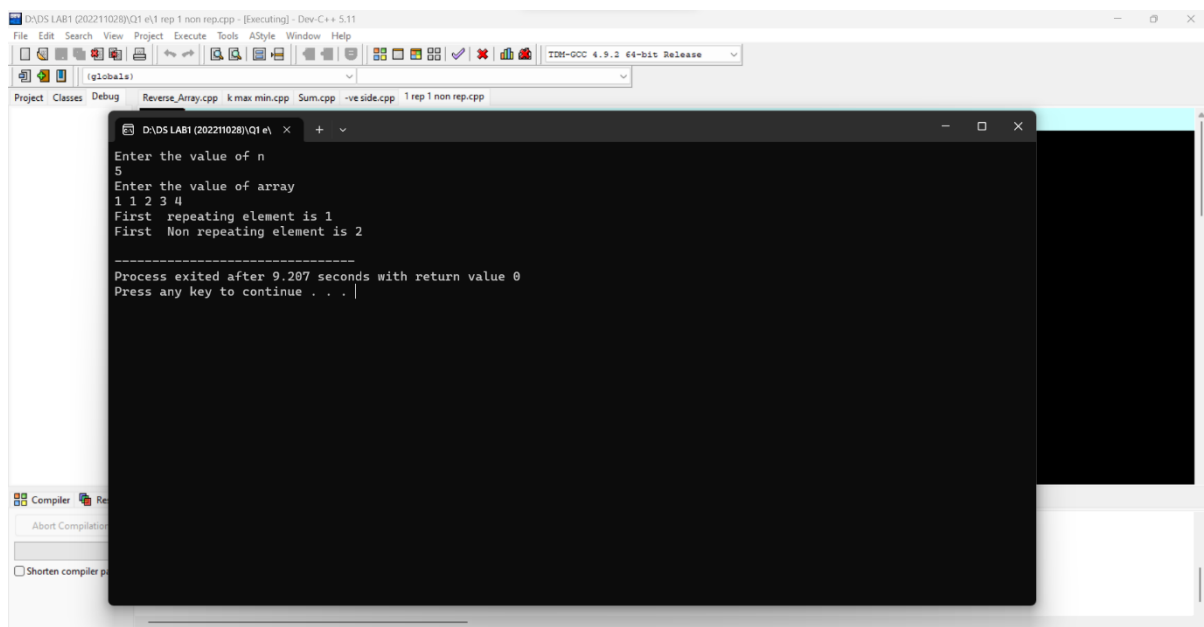
            if(j==n-1)
                return a[i];
        }
    }
    return -1;
}

int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter the value of array\n");
    for(int i=0;i<n;i++)
```

```
{  
    scanf("%d",&a[i]);  
}  
  
int c = rep(a,n);  
printf("First repeating element is %d\n",c);  
int d = nonrep(a,n);  
printf("First Non repeating element is %d\n",d);  
return 0;  
}
```

Output:-



The screenshot shows the Dev-C++ IDE interface. The main window displays the source code of a C++ program. The console window, titled "D:\DS LAB1 (20221028)\Q1 e\ 1 rep 1 non rep.cpp", shows the following output:

```
Enter the value of n  
5  
Enter the value of array  
1 1 2 3 4  
First repeating element is 1  
First Non repeating element is 2  
  
-----  
Process exited after 9.207 seconds with return value 0  
Press any key to continue . . .
```

Q2

```
#include<stdio.h>
int main()
{

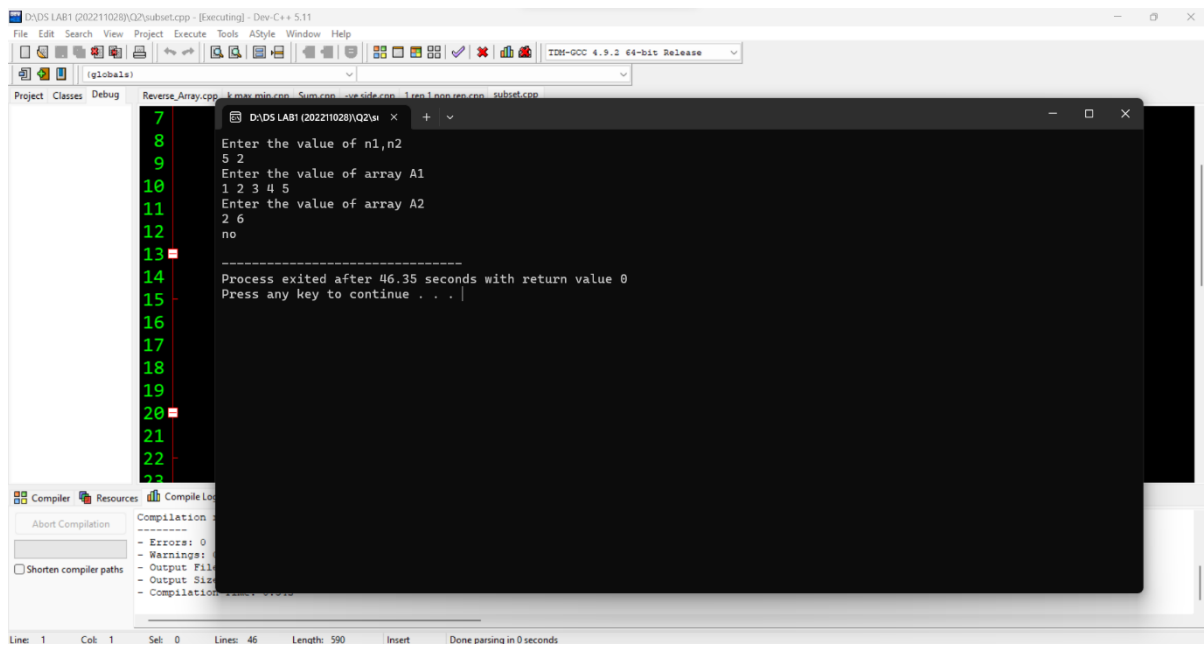
    int n1,n2;
    int v=0;
    printf("Enter the value of n1,n2 \n");
    scanf("%d %d",&n1,&n2);

    int a1[n1];
    printf("Enter the value of array A1\n");
    for(int i=0;i<n1;i++)
    {
        scanf("%d",&a1[i]);
    }

    int a2[n2];
    printf("Enter the value of array A2\n");
    for(int i=0;i<n2;i++)
    {
        scanf("%d",&a2[i]);
    }

    for(int i=0;i<n1;i++)
    {
        for(int j=0;j<n2;j++)
        {
            if(a1[i]!=a2[j])
            {
                v=0;
            }
            else{
                v=1;
            }
        }
    }
    if(v==0)
    printf("no\n");
    else
    printf("yes\n");
    return 0;
}
```

Output:-



The screenshot shows the Dev-C++ IDE with a C++ program being executed. The program prompts the user for two integers, n1 and n2, followed by two arrays A1 and A2. The user enters 5 and 2 for n1 and n2, 1 2 3 4 5 for array A1, and 2 6 for array A2. The program then displays a message indicating it exited after 46.35 seconds with a return value of 0, and prompts the user to press any key to continue.

```
7  
8 Enter the value of n1,n2  
9 5 2  
10 Enter the value of array A1  
11 1 2 3 4 5  
12 Enter the value of array A2  
13 2 6  
14 no  
15 -----  
16 Process exited after 46.35 seconds with return value 0  
17 Press any key to continue . . . |  
18  
19  
20  
21  
22  
23
```

Compiler: TDM-GCC 4.9.2 64-bit Release
Compilation: 0 errors, 0 warnings, 0 output files, 0 output sizes, 0 compilation times

Line: 1 Col: 1 Sel: 0 Lines: 46 Length: 590 Insert Done parsing in 0 seconds

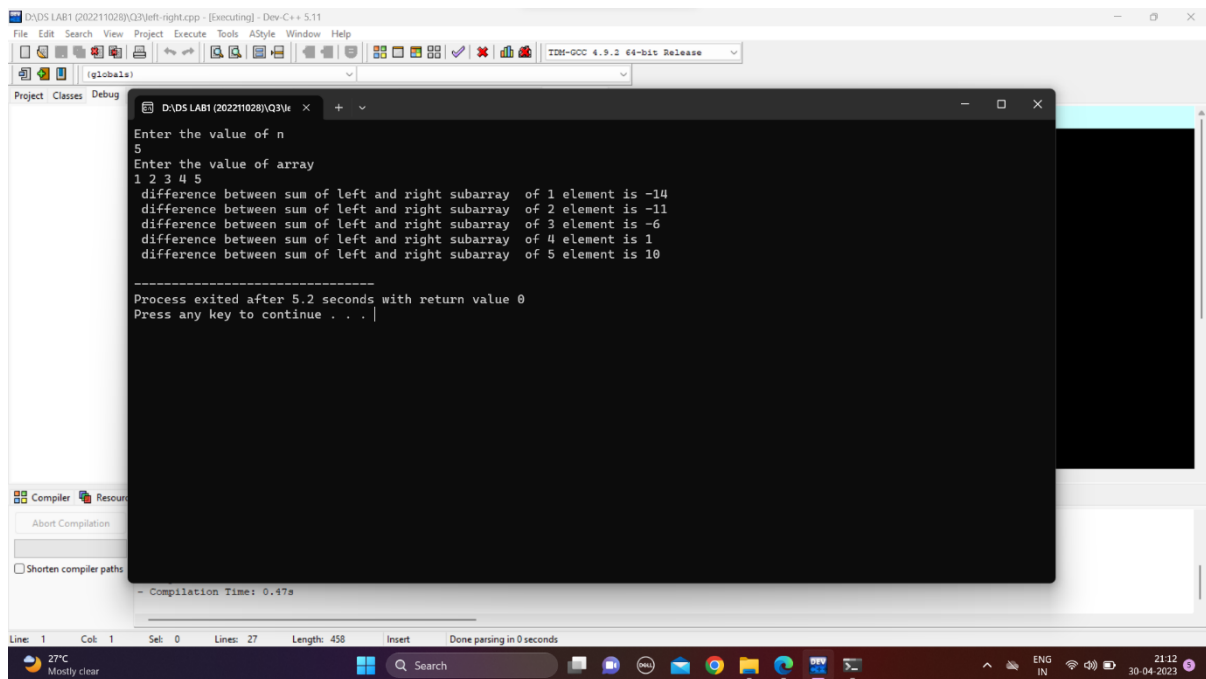
Q3

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter the value of array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    int sum=0;
    for(int i=0;i<n;i++)
    {
        sum=sum+a[i];
    }
    int v=0;
    for(int i=0;i<n;i++)
    {
        v=v+a[i];

        printf(" difference between sum of left and right subarray  of %d
element is %d\n",i+1,(sum-(2*v)+a[i])*-1);
    }
    return 0;
}
```

Output:-



```
D:\DS LAB1 (202211028)\Q3\left-right.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
D:\DS LAB1 (202211028)\Q3\left-right.cpp
Project Classes Debug
D:\DS LAB1 (202211028)\Q3\left-right.cpp
Enter the value of n
5
Enter the value of array
1 2 3 4 5
difference between sum of left and right subarray of 1 element is -14
difference between sum of left and right subarray of 2 element is -11
difference between sum of left and right subarray of 3 element is -6
difference between sum of left and right subarray of 4 element is 1
difference between sum of left and right subarray of 5 element is 10

-----
Process exited after 5.2 seconds with return value 0
Press any key to continue . . . |
```

Compiler Resources
Abort Compilation
Shorten compiler paths
- Compilation Time: 0.47s

Line: 1 Col: 1 Sel: 0 Lines: 27 Length: 458 Insert Done parsing in 0 seconds

27°C Mostly clear Search ENG IN 21:12 30-04-2023

Q4

```
#include<stdio.h>
int swap(int *a,int *b)
{
    int temp=*a;
    *a = *b;
    *b = temp;
}
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);

    int a[n];
    printf("Enter the value of array\n");
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }

    //bubble sort
    for(int i=0;i<n-1;++i)
    {
        for(int j=0;j<n-i-1;++j)
        {
            if(a[j]>a[j+1])
                swap(&a[j],&a[j+1]);
        }
    }

    for(int i=0;i<n;i++)
    {
        for(int j=i+1;j<n;j++)
        {
            if(a[i]==a[j])
                a[j]=0;
        }
    }

    int b[n];
    int k=0;
    for(int i=0;i<n;i++)
    {
        if(a[i]!=0)

            b[k++]=a[i];
    }
}
```



```

    }

    for(int i=0;i<k;i++)
    {
        printf("%d",b[i]);
    }
    return 0;
}

```

Output:-

The screenshot shows the Dev-C++ IDE with a project named 'D:\DS LAB1 (202211028)\Q4\'. The code editor displays a C++ program. The console window shows the following output:

```

Enter the value of n
6
Enter the value of array
1 2 3 3 5 5
1235
-----
Process exited after 53.25 seconds with return value 0
Press any key to continue . . .

```

The compiler window at the bottom shows 'Compilation result' with 'Errors: 0', 'Warnings: 0', 'Output File: a.out', 'Output Size: 1', and 'Compilation Time: 0.00'.

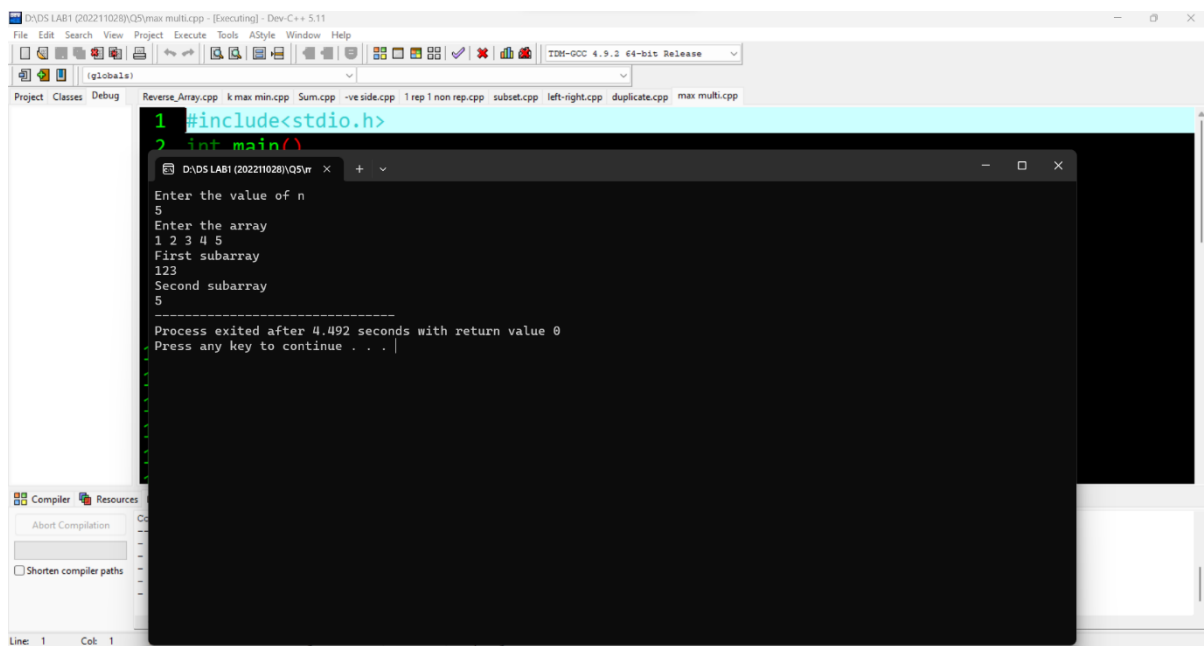
Q5

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the value of n\n");
    scanf("%d",&n);
    printf("Enter the array\n");
    int a[n];
    for(int i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    int max=-1;
    int v=0;
    for (int i = 1; i < n; i++) {
        int leftSum = 0;
        for (int j = i - 1; j >= 0; j--) {
            leftSum += a[j];
        }

        int rightSum = 0;
        for (int k = i + 1; k < n; k++) {
            rightSum += a[k];
        }

        if(((leftSum) * (rightSum ))>max)
        {
            max=leftSum*rightSum;
            v=i;
        }
    }
    printf("First subarray\n");
    for(int i=0;i<v;i++)
    printf("%d",a[i]);
    printf("\n");
    printf("Second subarray\n");
    for(int i=v+1;i<n;i++)
    printf("%d",a[i]);
    return 0;
}
```

Output:-



```
1 #include<stdio.h>
2 int main()
{
    Enter the value of n
    5
    Enter the array
    1 2 3 4 5
    First subarray
    123
    Second subarray
    5
    -----
    Process exited after 4.492 seconds with return value 0
    Press any key to continue . . . |
}
```

Q6(a)

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the n of matrix");
    scanf("%d",&n);

    int a[n][n];
    int b[n][n];
    int c[n][n];

    int i,j;
    printf("Enter 1 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }

    printf("Enter 2 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&b[i][j]);
        }
    }

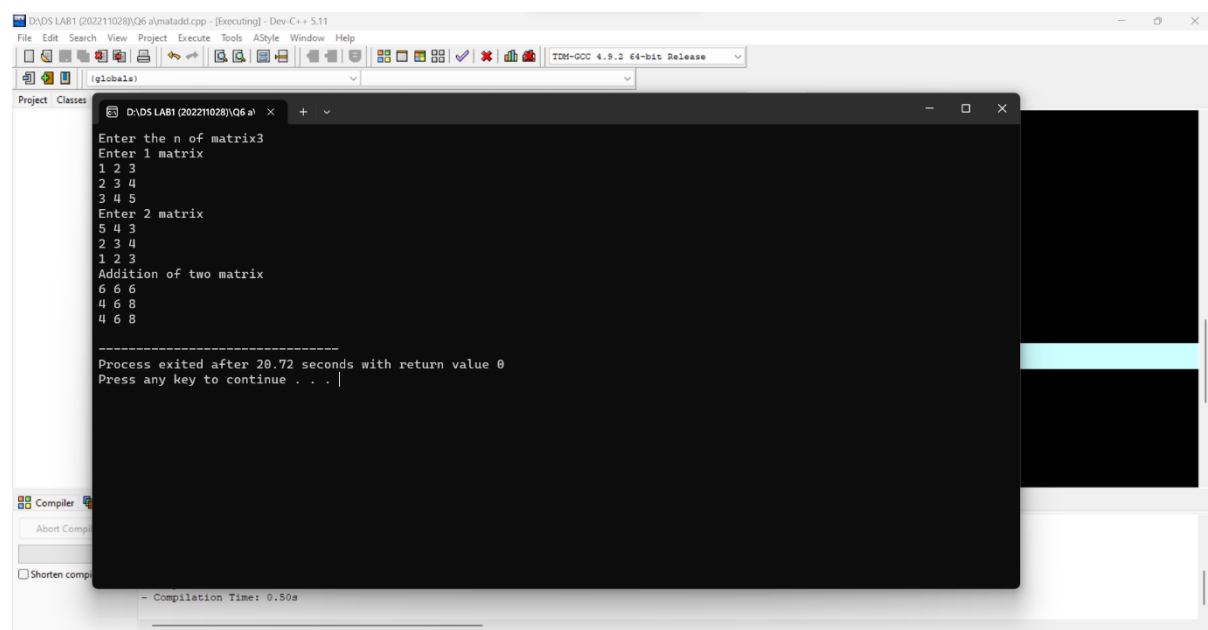
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {

            c[i][j]=a[i][j]+b[i][j];

        }
    }
    printf("Addition of two matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
```

```
        printf("%d ",c[i][j]);  
    }  
    printf("\n");  
}  
  
return 0;  
  
}
```

Output:-



```
D:\DS LAB1 (202211028)\Q6 a\matadd.cpp - [Executing] - Dev-C++ 5.11  
File Edit Search View Project Execute Tools AStyle Window Help  
TDM-GCC 4.9.2 64-bit Release  
Project Classes  
D:\DS LAB1 (202211028)\Q6 a\ x + -  
Enter the n of matrix3  
Enter 1 matrix  
1 2 3  
2 3 4  
3 4 5  
Enter 2 matrix  
5 4 3  
2 3 4  
1 2 3  
Addition of two matrix  
6 6 6  
4 6 8  
4 6 8  
  
-----  
Process exited after 20.72 seconds with return value 0  
Press any key to continue . . . |  
  
Compiler  
Abort Comp  
Shorten comp  
- Compilation Time: 0.50s
```

Q6(b)

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the n of matrix");
    scanf("%d",&n);

    int a[n][n];
    int b[n][n];
    int c[n][n];

    int i,j;
    printf("Enter 1 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }

    printf("Enter 2 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&b[i][j]);
        }
    }

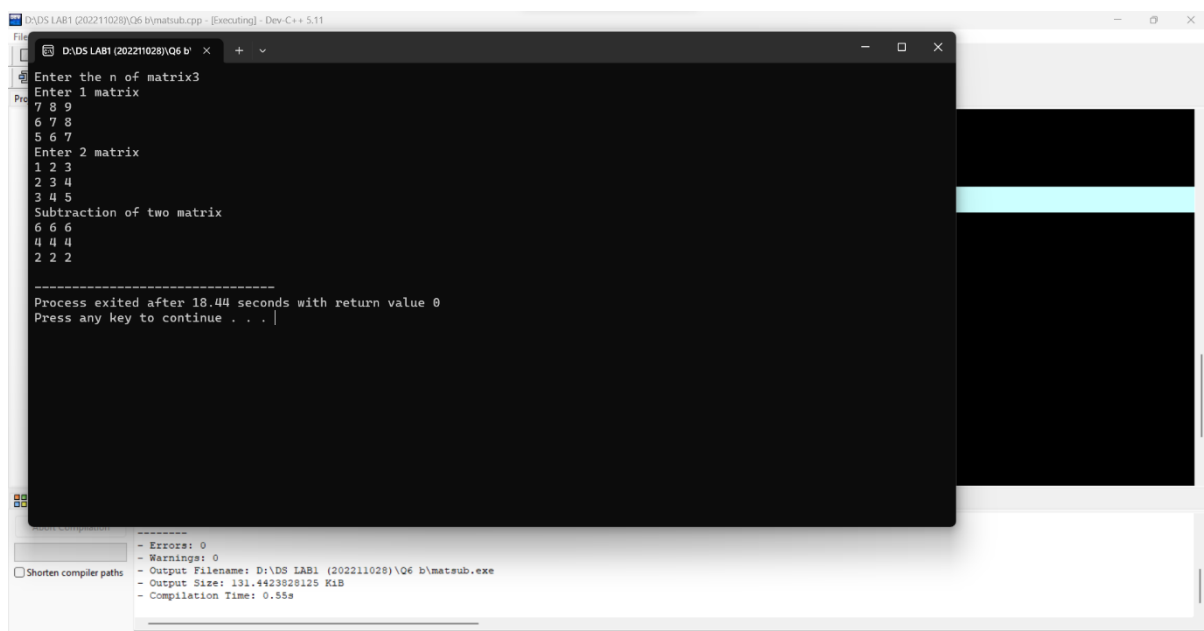
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {

            c[i][j]=a[i][j]-b[i][j];

        }
    }
    printf("Subtraction of two matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
```

```
        printf("%d ",c[i][j]);  
    }  
    printf("\n");  
}  
  
return 0;  
  
}
```

Output:-



```
D:\DS LAB1 (202211028)\Q6 b\matsub.cpp - [Executing] - Dev-C++ 5.11  
Enter the n of matrix3  
Enter 1 matrix  
7 8 9  
6 7 8  
5 6 7  
Enter 2 matrix  
1 2 3  
2 3 4  
3 4 5  
Subtraction of two matrix  
6 6 6  
4 4 4  
2 2 2  
  
-----  
Process exited after 18.44 seconds with return value 0  
Press any key to continue . . . |  
  
-----  
- Errors: 0  
- Warnings: 0  
- Output Filename: D:\DS LAB1 (202211028)\Q6 b\matsub.exe  
- Output Size: 131.4423828125 KiB  
- Compilation Time: 0.55s
```

Q6(c)

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the n of matrix");
    scanf("%d",&n);

    int a[n][n];
    int b[n][n];
    int c[n][n];

    int i,j,k;
    printf("Enter 1 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }

    printf("Enter 2 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&b[i][j]);
        }
    }

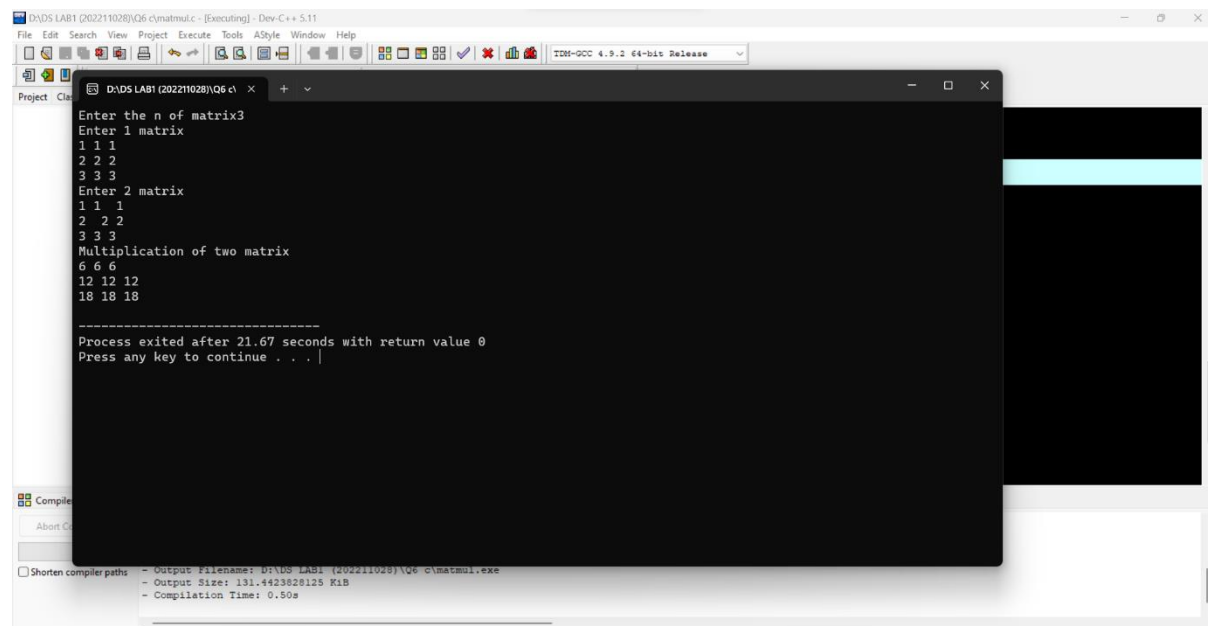
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            c[i][j]=0;
            for(k=0;k<n;k++)
            {
                c[i][j]+=a[i][k]*b[k][j];
            }

        }
    }
    printf("Multiplication of two matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
```



```
{  
    printf("%d ",c[i][j]);  
}  
printf("\n");  
}  
  
return 0;  
  
}
```

Output:-



```
D:\DS LAB1 (202211028)\Q6 c\matmul.c - [Executing] - Dev-C++ 5.11  
File Edit Search View Project Execute Tools AStyle Window Help  
Project Class  
D:\DS LAB1 (202211028)\Q6 c\matmul.c  
Enter the n of matrix3  
Enter 1 matrix  
1 1 1  
2 2 2  
3 3 3  
Enter 2 matrix  
1 1 1  
2 2 2  
3 3 3  
Multiplication of two matrix  
6 6 6  
12 12 12  
18 18 18  
  
-----  
Process exited after 21.67 seconds with return value 0  
Press any key to continue . . . |  
  
Compile  
About C  
Shorten compiler paths  
- Output filename: D:\DS LAB1 (202211028)\Q6 c\matmul.exe  
- Output Size: 131.4423828125 KiB  
- Compilation Time: 0.50s
```

Q6(d)

```
#include<stdio.h>
int main()
{
    int n;
    printf("Enter the n of matrix");
    scanf("%d",&n);

    int x,y;
    printf("Enter x and y\n");
    scanf("%d %d",&x,&y);

    int a[n][n];
    int b[n][n];
    int c[n][n];

    int i,j;
    printf("Enter 1 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }

    printf("Enter 2 matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",&b[i][j]);
        }
    }

    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
        {

            c[i][j]= (x*a[i][j])+(y*b[i][j]);

        }
    }
    printf("Resultant matrix\n");
```

```

for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
    {
        printf("%d ",c[i][j]);
    }
    printf("\n");
}

return 0;

}

```

Output:-

```

D:\DS LAB1 (202211028)\Q6 d\Matfun.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project Classes Debug Reverse_Array.cpp k_max_min.cpp Sum.cpp -ve_side.cpp 1_rep_1_non_rep.cpp subset.cpp left-right.cpp duplicate.cpp max_multi.cpp matadd.cpp matsub.cpp matmul.c Matfun.cpp
D:\DS LAB1 (202211028)\Q6 d
Enter the n of matrix3
Enter x and y
2 3
Enter 1 matrix
1 1 1
2 2 2
3 3 3
Enter 2 matrix
1 1 1
2 2 2
3 3 3
Resultant matrix
5 5 5
10 10 10
15 15 15

-----
Process exited after 25.84 seconds with return value 0
Press any key to continue . . .

```

Q7

```
#include<stdio.h>
int swap(int *a,int *b)
{
    int temp=*a;
    *a = *b;
    *b = temp;
}
int main()
{
    int m,n;
    printf("Enter the value of m and n of matrix");
    scanf("%d %d",&m,&n);
    int a[m][n];

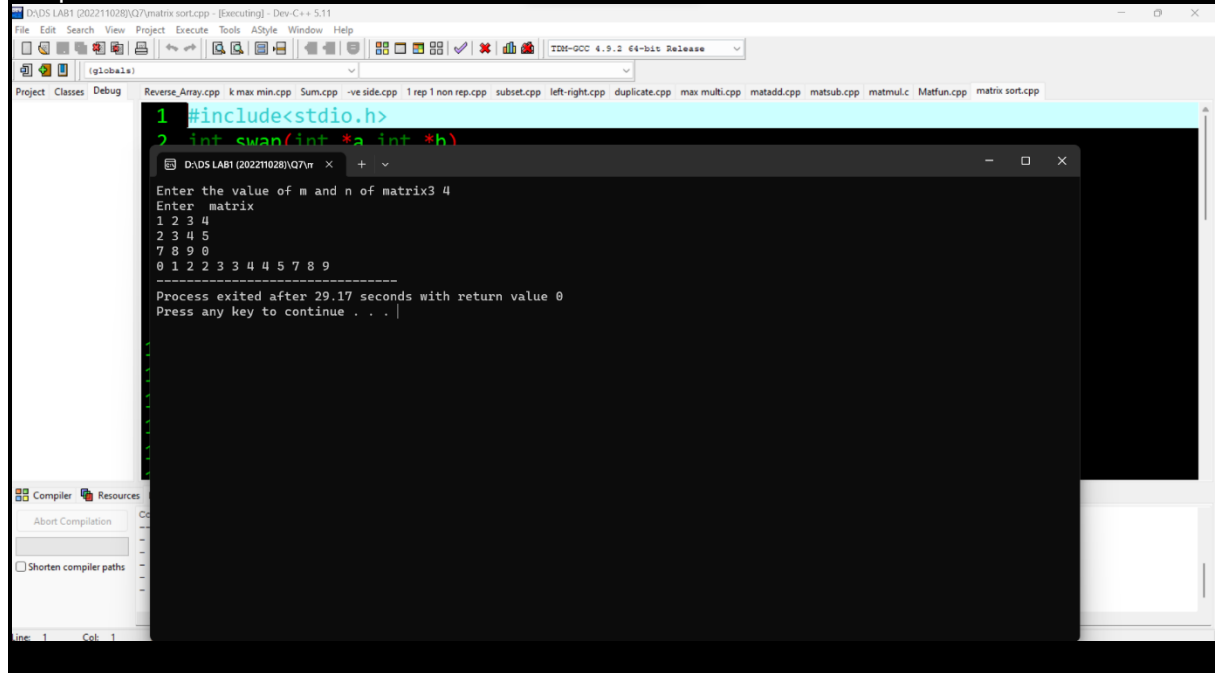
    printf("Enter matrix\n");
    for(int i=0;i<m;i++)
    {
        for(int j=0;j<n;j++)
        {
            scanf("%d",&a[i][j]);
        }
    }
    int b[m*n];

    for(int i=0;i<m;i++)
    {
        for(int j=0;j<n;j++)
        {
            b[(n*i)+j] = a[i][j];
        }
    }
    for(int i=0;i<m*n-1;++i)
    {
        for(int j=0;j<m*n-i-1;++j)
        {
            if(b[j]>b[j+1])
                swap(&b[j],&b[j+1]);

        }
    }

    for(int i=0;i<m*n;i++)
    {
        printf("%d ",b[i]);
    }
    return 0;
}
```

Output:-



```
1 #include<stdio.h>
2 int swap(int *a, int *b)
{
    int temp = *a;
    *a = *b;
    *b = temp;
}

int main()
{
    int m, n;
    printf("Enter the value of m and n of matrix: ");
    scanf("%d %d", &m, &n);
    printf("Enter matrix elements:\n");
    int arr[m][n];
    for (int i = 0; i < m; i++)
    {
        for (int j = 0; j < n; j++)
        {
            scanf("%d", &arr[i][j]);
        }
    }
    printf("Matrix elements are:\n");
    for (int i = 0; i < m; i++)
    {
        for (int j = 0; j < n; j++)
        {
            printf("%d ", arr[i][j]);
        }
        printf("\n");
    }
    return 0;
}
```

Enter the value of m and n of matrix: 3 4
Enter matrix
1 2 3 4
2 3 4 5
7 8 9 0
0 1 2 2 3 3 4 4 5 7 8 9

Process exited after 29.17 seconds with return value 0
Press any key to continue . . .

Q8

```
#include<stdio.h>
int main()
{
int n;
printf("Enter the value of n\n");
scanf("%d",&n);

int a[n][n];
int i,j;
printf("Enter values\n");
for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
    {
        scanf("%d",&a[i][j]);
    }
}
printf("without additional matrix\n");
for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
    {
        if(j>i)
        {
            int temp;
            temp=a[i][j];
            a[i][j]=a[j][i];
            a[j][i]=temp;
        }
    }
}
for(i=0;i<n;i++)
{
    for(j=0;j<n;j++)
    {
        printf("%d",a[i][j]);
    }
    printf("\n");
}

return 0;
}
```

Output:-

The screenshot shows a C++ IDE with a dark theme. The main window displays the output of a program execution. The program prompts for 'n' (3), 'Enter values' (1 2 3, 4 5 6, 7 8 9), and 'without additional matrix' (147, 258, 369). It then displays 'Process exited after 13.1 seconds with return value 0' and 'Press any key to continue . . .'.

```

Enter the value of n
3
Enter values
1 2 3
4 5 6
7 8 9
without additional matrix
147
258
369

=====
Process exited after 13.1 seconds with return value 0
Press any key to continue . . .
  
```

The IDE interface includes a menu bar (File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help), a toolbar, and a status bar at the bottom showing 'Compiler Resources', 'Shorten compiler paths', and 'Compilation Time: 0.44s'.

*_*_*_*_*