DATE:-22/09/22

COURSE NAME:-DATA STRUCTURES FOR EXPRESSION EVALUATION

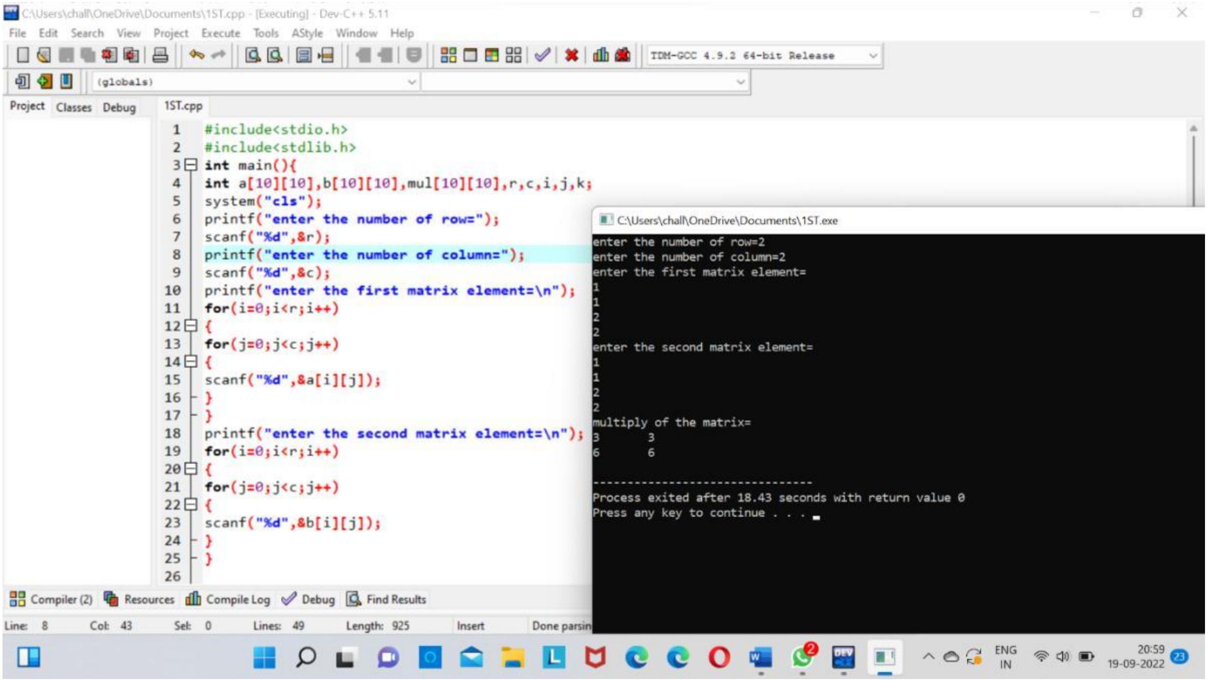
COURSE CODE:-CSA0374

NAME OF THE STUDENT:-

Sandeep.A

REGNO:-192110564

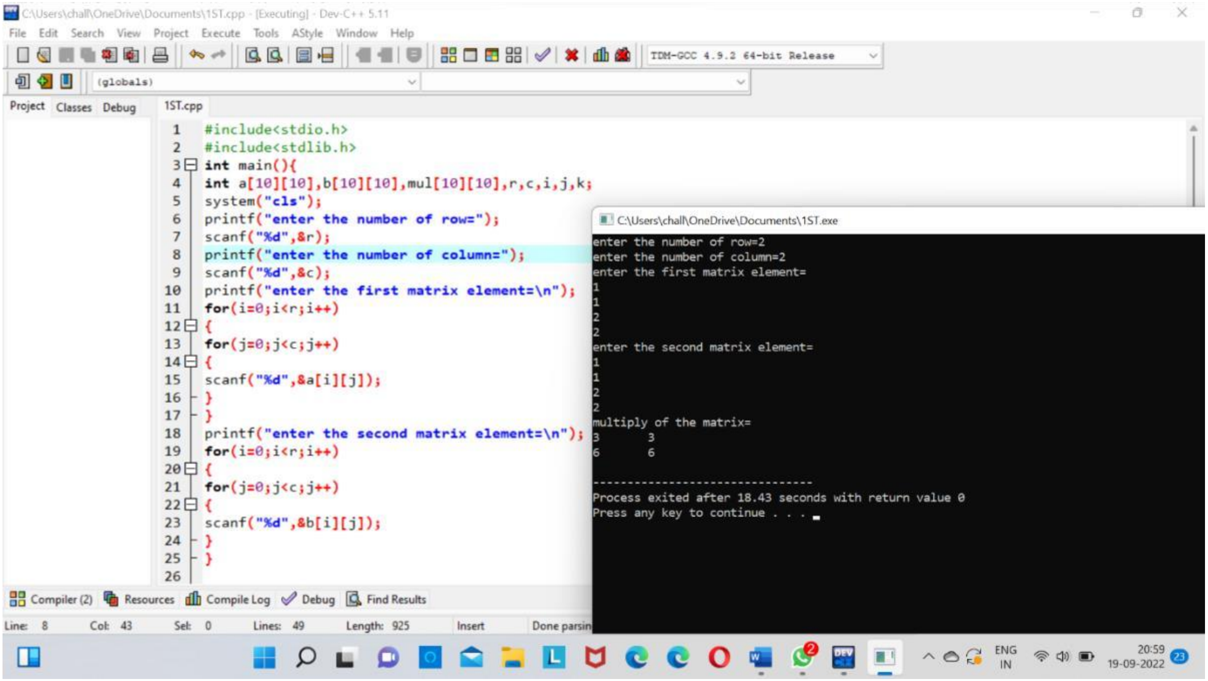
EXPERIMENT:-1(MATRIX OUT PUT)


C:\Users\chall\OneDrive\Documents\1ST.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
1ST.cpp
C:\Users\chall\OneDrive\Documents\1ST.exe
Compiler (2) Resources Compile Log Debug Find Results
Line: 8 Col: 43 Sel: 0 Lines: 49 Length: 925 Insert Done parsin
ENG IN
20:59
19-09-2022

```c
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
system("cls");
printf("enter the number of row=");
scanf("%d",&r);
printf("enter the number of column=");
scanf("%d",&c);
printf("enter the first matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
printf("enter the second matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&b[i][j]);
}
}

```

```
enter the number of row=2
enter the number of column=2
enter the first matrix element=
1
1
2
2
enter the second matrix element=
1
1
2
2
multiply of the matrix=
3       3
6       6

--------------------------------
Process exited after 18.43 seconds with return value 0
Press any key to continue . . .
```

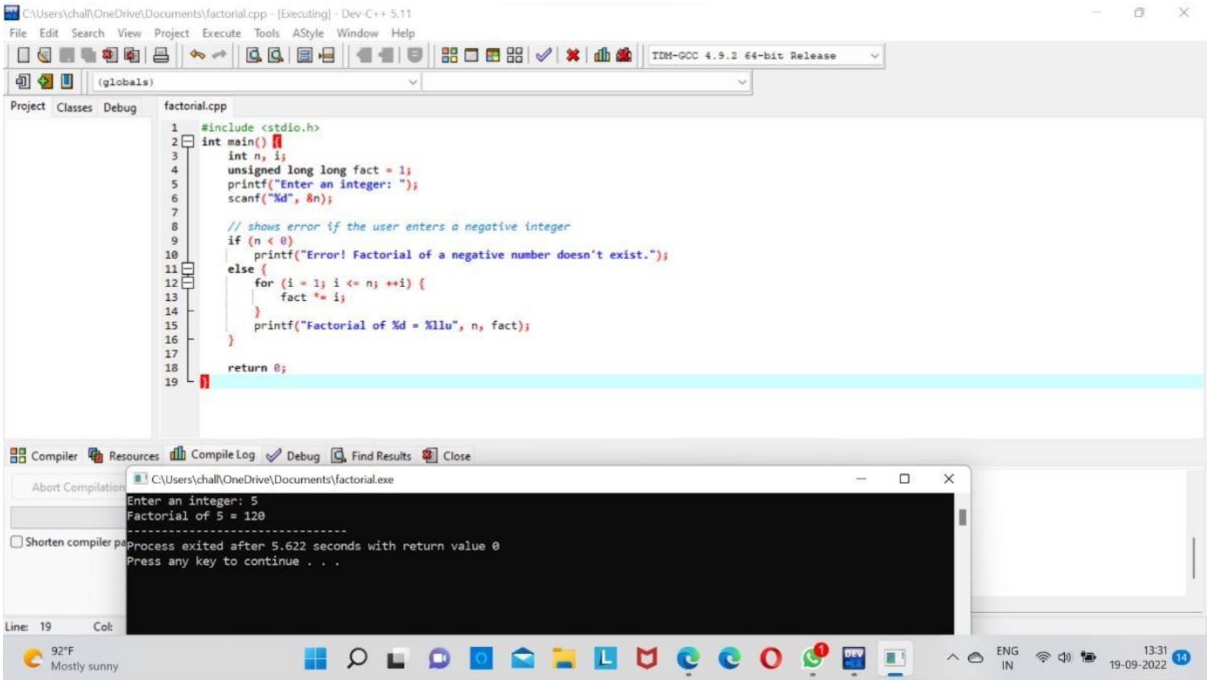
EXPERIMENT:-2(EVEN ODD OUTPUT)



```c
#include<stdio.h>
#include<stdlib.h>
int main(){
int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;
system("cls");
printf("enter the number of row=");
scanf("%d",&r);
printf("enter the number of column=");
scanf("%d",&c);
printf("enter the first matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&a[i][j]);
}
}
printf("enter the second matrix element=\n");
for(i=0;i<r;i++)
{
for(j=0;j<c;j++)
{
scanf("%d",&b[i][j]);
}
}

```

```
enter the number of row=2
enter the number of column=2
enter the first matrix element=
1
1
2
2
enter the second matrix element=
1
1
2
2
multiply of the matrix=
3       3
6       6

--------------------------------
Process exited after 18.43 seconds with return value 0
Press any key to continue . . .
```

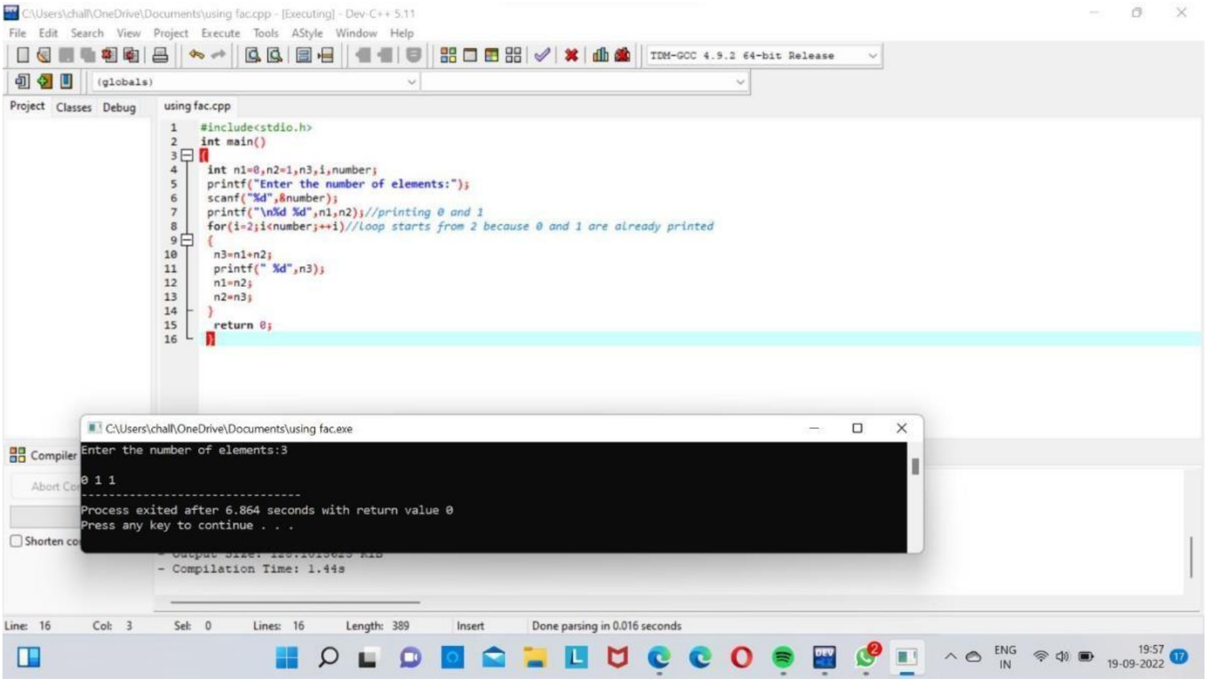
EXPERIMENT:-3(FACTORIAL WITHOUT OUTPUT)


C:\Users\chall\OneDrive\Documents\factorial.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
factorial.cpp
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
□ Shorten compiler pa
Line: 19 Col:
C:\Users\chall\OneDrive\Documents\factorial.exe
92°F
Mostly sunny
ENG
IN
13:31
19-09-2022

```
#include <stdio.h>
int main() {
    int n, i;
    unsigned long long fact = 1;
    printf("Enter an integer: ");
    scanf("%d", &n);

    // shows error if the user enters a negative integer
    if (n < 0)
        printf("Error! Factorial of a negative number doesn't exist.");
    else {
        for (i = 1; i <= n; ++i) {
            fact *= i;
        }
        printf("Factorial of %d = %llu", n, fact);
    }

    return 0;
}
```

```
Enter an integer: 5
Factorial of 5 = 120
--------------------------------
Process exited after 5.622 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:4(FIBINOCCI WITHOUT OUTPUT)

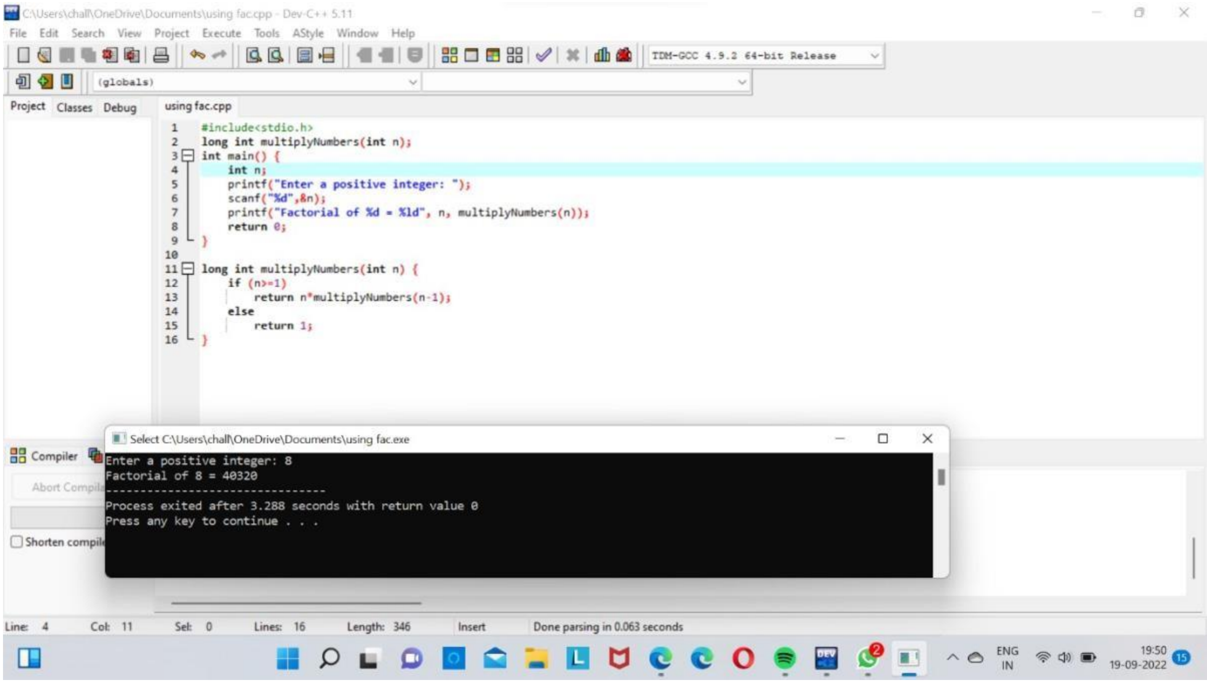

C:\Users\chall\OneDrive\Documents\using fac.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
using fac.cpp
Compiler
Abort Co
□ Shorten co
C:\Users\chall\OneDrive\Documents\using fac.exe
Line: 16 Col: 3 Sel: 0 Lines: 16 Length: 389 Insert Done parsing in 0.016 seconds
ENG
IN
19:57
19-09-2022

```
#include<stdio.h>
int main()
{
 int n1=0,n2=1,n3,i,number;
 printf("Enter the number of elements:");
 scanf("%d",&number);
 printf("\n%d %d",n1,n2);//printing 0 and 1
 for(i=2;i<number;++i)//loop starts from 2 because 0 and 1 are already printed
 {
  n3=n1+n2;
  printf(" %d",n3);
  n1=n2;
  n2=n3;
 }
  return 0;
 }
```

```
Enter the number of elements:3

0 1 1
--------------------------------
Process exited after 6.864 seconds with return value 0
Press any key to continue . . .
```

```
- Compilation Time: 1.44s
```

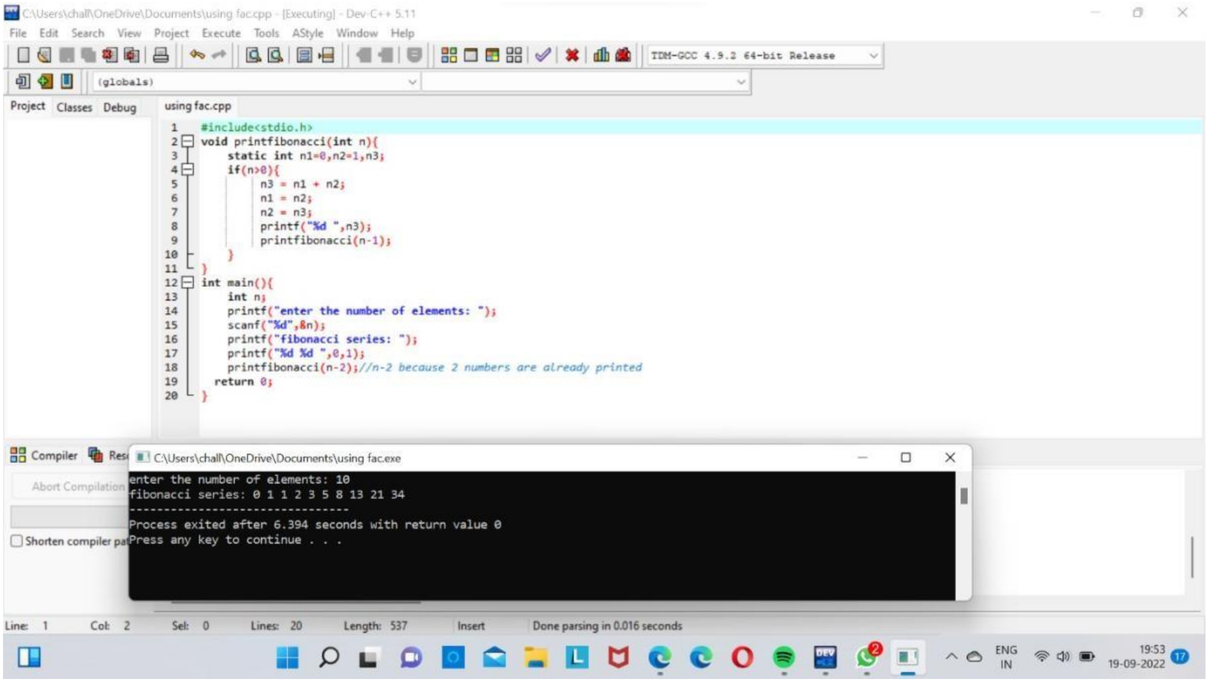
EXPERIMENT:5(FACTORIAL USING OUTPUT)


C:\Users\chall\OneDrive\Documents\using fac.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
using fac.cpp
Select C:\Users\chall\OneDrive\Documents\using fac.exe
Compiler
Abort Compila
Shorten compile
Line: 4 Col: 11 Sel: 0 Lines: 16 Length: 346 Insert Done parsing in 0.063 seconds
ENG IN
19:50
19-09-2022

```c
#include<stdio.h>
long int multiplyNumbers(int n);
int main() {
    int n;
    printf("Enter a positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %ld", n, multiplyNumbers(n));
    return 0;
}

long int multiplyNumbers(int n) {
    if (n>=1)
        return n*multiplyNumbers(n-1);
    else
        return 1;
}
```

```
Enter a positive integer: 8
Factorial of 8 = 40320
--------------------------------
Process exited after 3.288 seconds with return value 0
Press any key to continue . . .
```

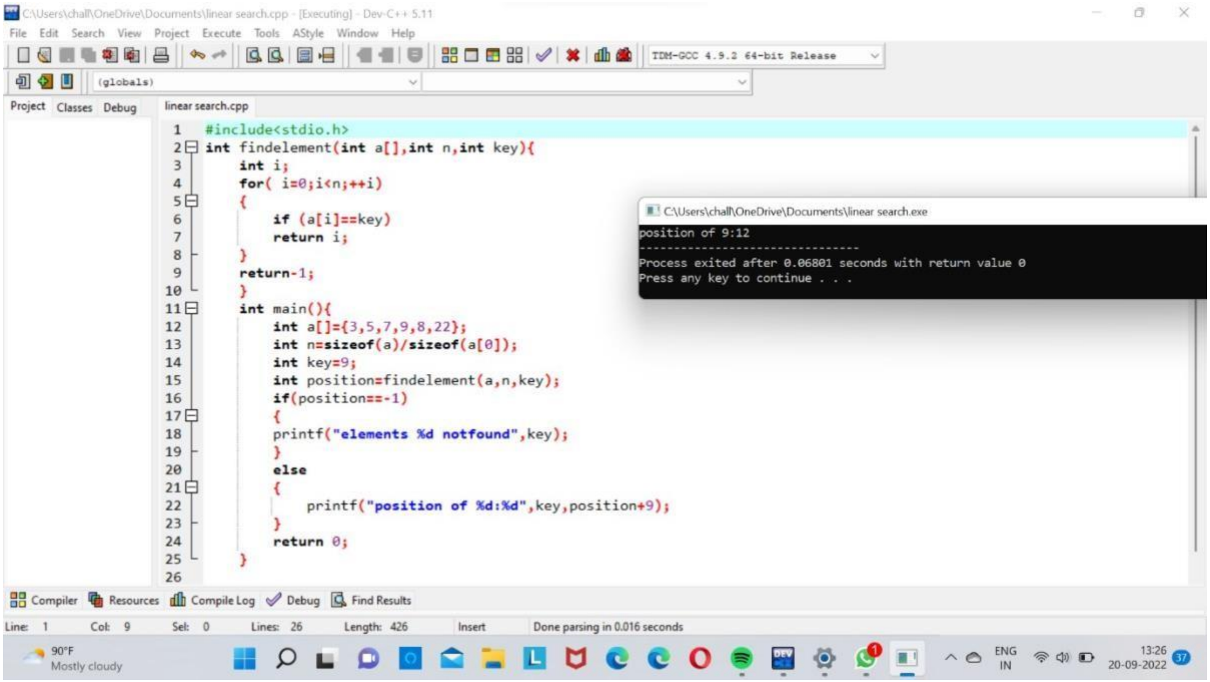
EXPERIMENT:6(FIBINOCCI USING OUTPUT)


C:\Users\chall\OneDrive\Documents\using fac.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
using fac.cpp
C:\Users\chall\OneDrive\Documents\using fac.exe
Compiler
Resi
Abort Compilation
Shorten compiler pa
Line: 1 Col: 2 Sel: 0 Lines: 20 Length: 537 Insert Done parsing in 0.016 seconds
ENG IN
19:53
19-09-2022

```c
#include<stdio.h>
void printfibonacci(int n){
    static int n1=0,n2=1,n3;
    if(n>0){
         n3 = n1 + n2;
         n1 = n2;
         n2 = n3;
         printf("%d ",n3);
         printfibonacci(n-1);
    }
}
int main(){
    int n;
    printf("enter the number of elements: ");
    scanf("%d",&n);
    printf("fibonacci series: ");
    printf("%d %d ",0,1);
    printfibonacci(n-2);//n-2 because 2 numbers are already printed
  return 0;
}
```

```
enter the number of elements: 10
fibonacci series: 0 1 1 2 3 5 8 13 21 34
--------------------------------
Process exited after 6.394 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:-7(ARRAY OUTPUT)



C:\Users\chall\OneDrive\Documents\linear search.cpp - [Executing] - Dev-C++ 5.11

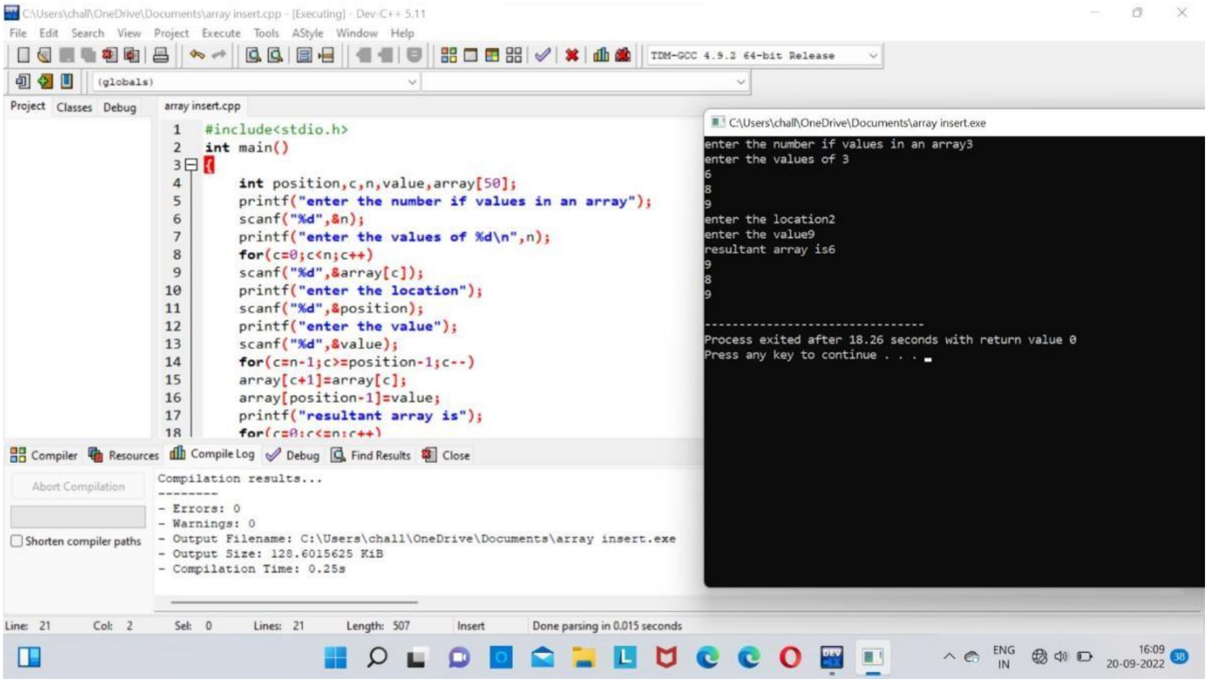
```c
#include<stdio.h>
int findelement(int a[],int n,int key){
    int i;
    for( i=0;i<n;++i)
    {
        if (a[i]==key)
        return i;
    }
    return-1;
    }
    int main(){
        int a[]={3,5,7,9,8,22};
        int n=sizeof(a)/sizeof(a[0]);
        int key=9;
        int position=findelement(a,n,key);
        if(position==-1)
        {
        printf("elements %d notfound",key);
        }
        else
        {
            printf("position of %d:%d",key,position+9);
        }
        return 0;
    }
```

C:\Users\chall\OneDrive\Documents\linear search.exe

```
position of 9:12
--------------------------------
Process exited after 0.06801 seconds with return value 0
Press any key to continue . . .
```

Line: 1 Col: 9 Sel: 0 Lines: 26 Length: 426 Insert Done parsing in 0.016 seconds

ARRAY INSERTION(OUTPUT)



C:\Users\chall\OneDrive\Documents\array insert.cpp - [Executing] - Dev-C++ 5.11

```c
#include<stdio.h>
int main()
{
    int position,c,n,value,array[50];
    printf("enter the number if values in an array");
    scanf("%d",&n);
    printf("enter the values of %d\n",n);
    for(c=0;c<n;c++)
    scanf("%d",&array[c]);
    printf("enter the location");
    scanf("%d",&position);
    printf("enter the value");
    scanf("%d",&value);
    for(c=n-1;c>=position-1;c--)
    array[c+1]=array[c];
    array[position-1]=value;
    printf("resultant array is");
    for(c=0;c<=n;c++)
```

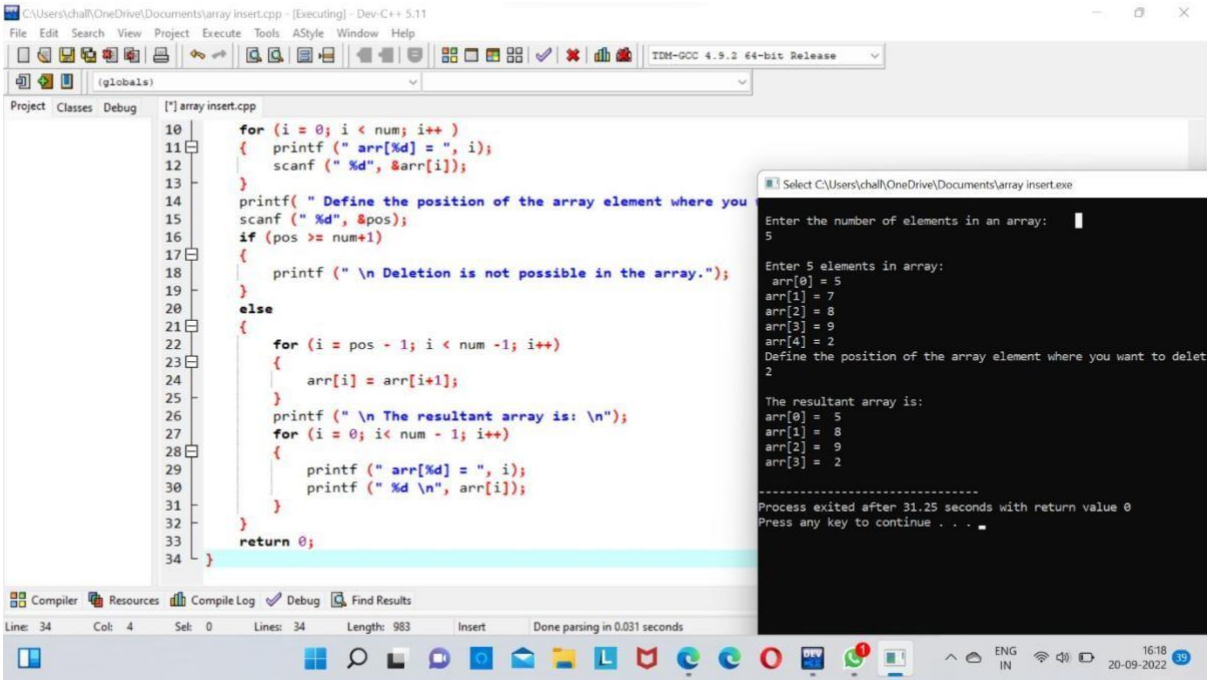
C:\Users\chall\OneDrive\Documents\array insert.exe

```
enter the number if values in an array3
enter the values of 3
6
8
9
enter the location2
enter the value9
resultant array is6
9
8
9


--------------------------------
Process exited after 18.26 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\chall\OneDrive\Documents\array insert.exe
- Output Size: 128.6015625 KiB
- Compilation Time: 0.25s
```

Line: 21 Col: 2 Sel: 0 Lines: 21 Length: 507 Insert Done parsing in 0.015 seconds

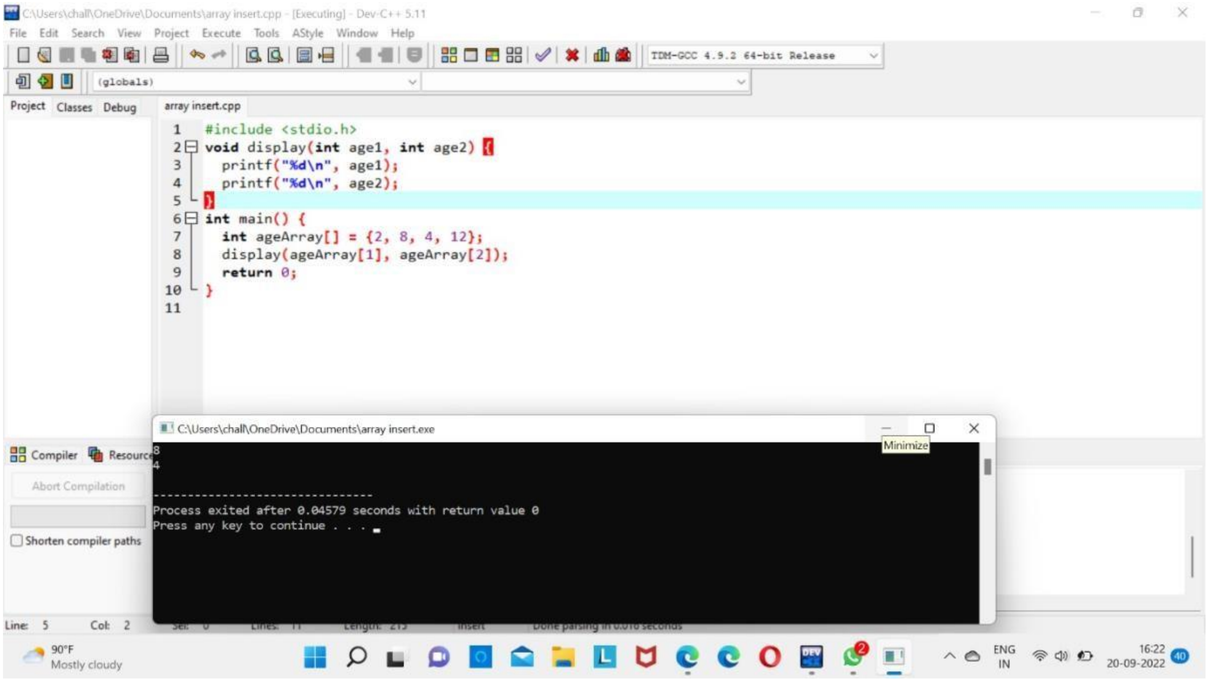
ARRAY DELETION(OUTPUT)



```
    for (i = 0; i < num; i++ )
    {   printf (" arr[%d] = ", i);
        scanf (" %d", &arr[i]);
    }
    printf( " Define the position of the array element where you
    scanf (" %d", &pos);
    if (pos >= num+1)
    {
        printf (" \n Deletion is not possible in the array.");
    }
    else
    {
        for (i = pos - 1; i < num -1; i++)
        {
            arr[i] = arr[i+1];
        }
        printf (" \n The resultant array is: \n");
        for (i = 0; i< num - 1; i++)
        {
            printf (" arr[%d] = ", i);
            printf (" %d \n", arr[i]);
        }
    }
    return 0;
}
```

```
Enter the number of elements in an array:
5

Enter 5 elements in array:
 arr[0] = 5
arr[1] = 7
arr[2] = 8
arr[3] = 9
arr[4] = 2
Define the position of the array element where you want to delet
2

The resultant array is:
arr[0] =  5
arr[1] =  8
arr[2] =  9
arr[3] =  2

--------------------------------
Process exited after 31.25 seconds with return value 0
Press any key to continue . . .
```

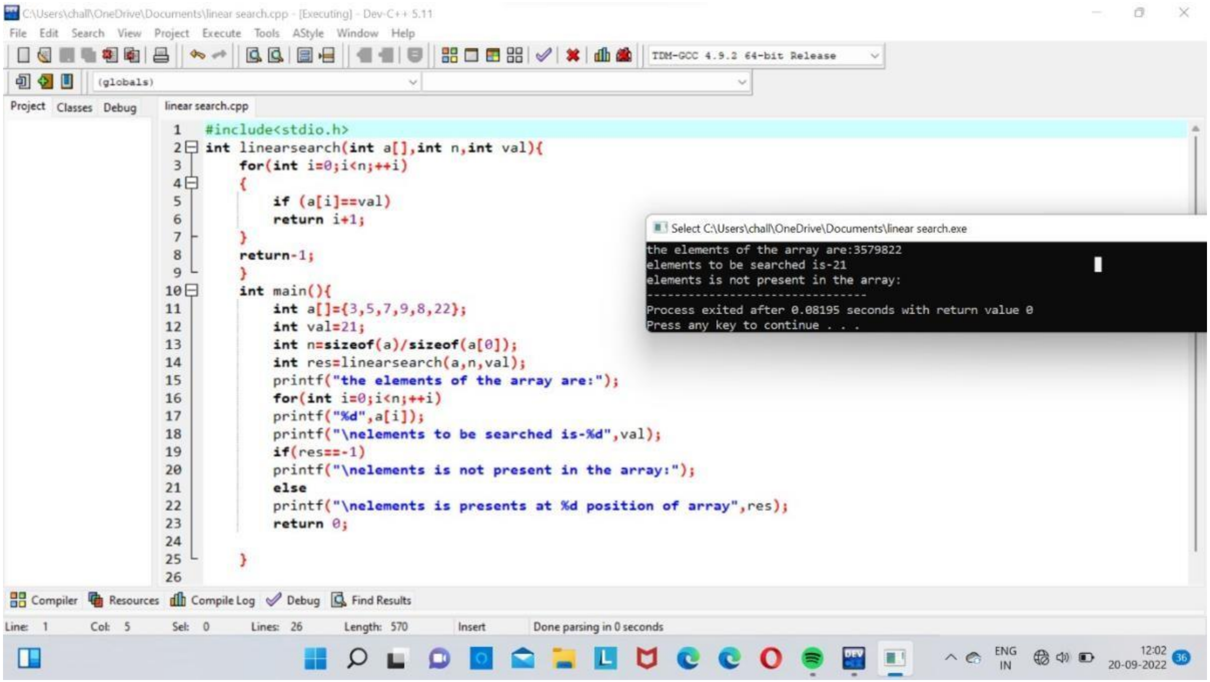
ARRAY DISPLAY(OUTPUT)



```
#include <stdio.h>
void display(int age1, int age2) {
  printf("%d\n", age1);
  printf("%d\n", age2);
}
int main() {
  int ageArray[] = {2, 8, 4, 12};
  display(ageArray[1], ageArray[2]);
  return 0;
}
```

```
8
4

--------------------------------
Process exited after 0.04579 seconds with return value 0
Press any key to continue . . .
```

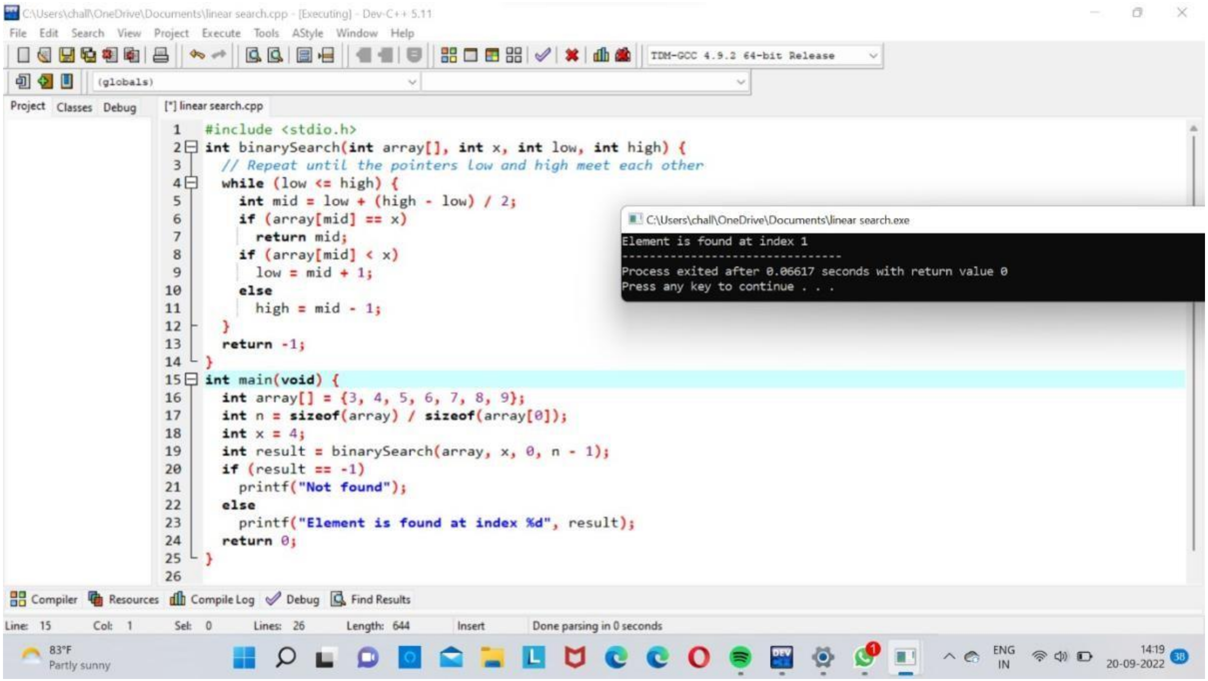
EXPERIMENT:-8(LINEARSEARCH(OUTPUT))


C:\Users\chall\OneDrive\Documents\linear search.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
linear search.cpp
Select C:\Users\chall\OneDrive\Documents\linear search.exe
Compiler Resources Compile Log Debug Find Results
Line: 1 Col: 5 Sel: 0 Lines: 26 Length: 570 Insert Done parsing in 0 seconds
ENG IN
12:02
20-09-2022

```c
#include<stdio.h>
int linearsearch(int a[],int n,int val){
    for(int i=0;i<n;++i)
    {
        if (a[i]==val)
        return i+1;
    }
    return-1;
    }
    int main(){
        int a[]={3,5,7,9,8,22};
        int val=21;
        int n=sizeof(a)/sizeof(a[0]);
        int res=linearsearch(a,n,val);
        printf("the elements of the array are:");
        for(int i=0;i<n;++i)
        printf("%d",a[i]);
        printf("\nelements to be searched is-%d",val);
        if(res==-1)
        printf("\nelements is not present in the array:");
        else
        printf("\nelements is presents at %d position of array",res);
        return 0;

    }

```

```
the elements of the array are:3579822
elements to be searched is-21
elements is not present in the array:
--------------------------------
Process exited after 0.08195 seconds with return value 0
Press any key to continue . . .
```

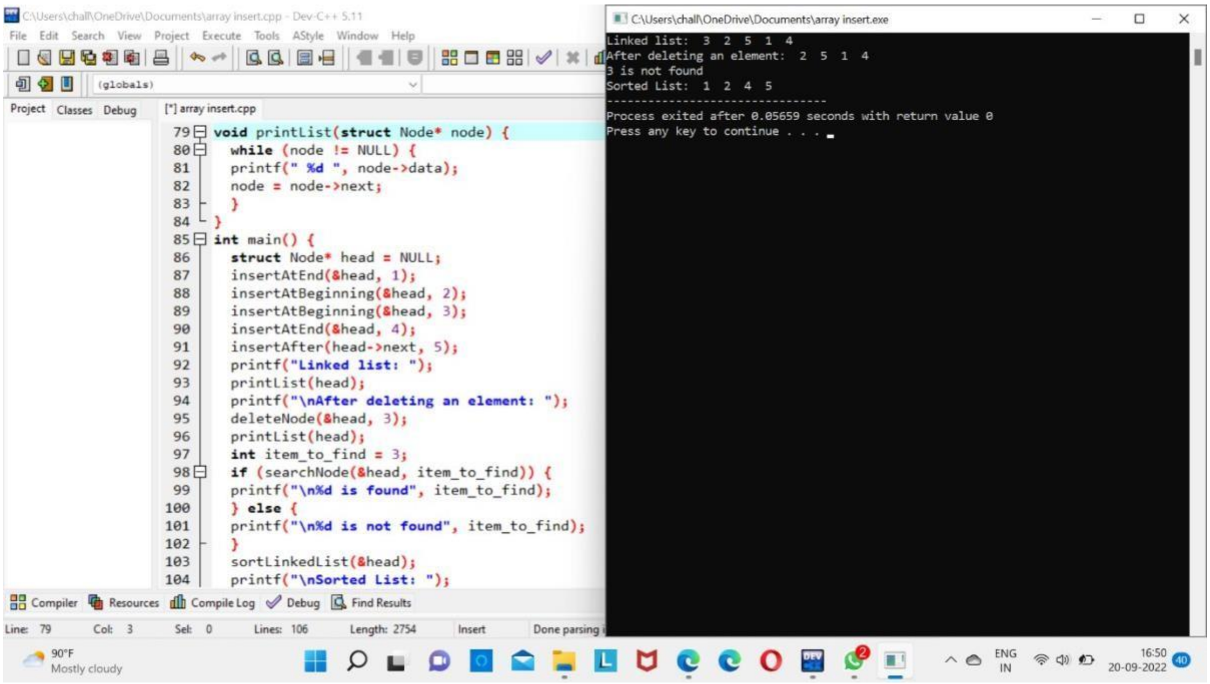
EXPERIMENT:9(BINARYSEARCH(OUTPUT)


C:\Users\chall\OneDrive\Documents\linear search.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
[*] linear search.cpp
C:\Users\chall\OneDrive\Documents\linear search.exe
Compiler Resources Compile Log Debug Find Results
Line: 15 Col: 1 Sel: 0 Lines: 26 Length: 644 Insert Done parsing in 0 seconds
83°F
Partly sunny
ENG IN
14:19
20-09-2022

```c
#include <stdio.h>
int binarySearch(int array[], int x, int low, int high) {
  // Repeat until the pointers low and high meet each other
  while (low <= high) {
    int mid = low + (high - low) / 2;
    if (array[mid] == x)
      return mid;
    if (array[mid] < x)
      low = mid + 1;
    else
      high = mid - 1;
  }
  return -1;
}
int main(void) {
  int array[] = {3, 4, 5, 6, 7, 8, 9};
  int n = sizeof(array) / sizeof(array[0]);
  int x = 4;
  int result = binarySearch(array, x, 0, n - 1);
  if (result == -1)
    printf("Not found");
  else
    printf("Element is found at index %d", result);
  return 0;
}

```

```
Element is found at index 1
--------------------------------
Process exited after 0.06617 seconds with return value 0
Press any key to continue . . .
```

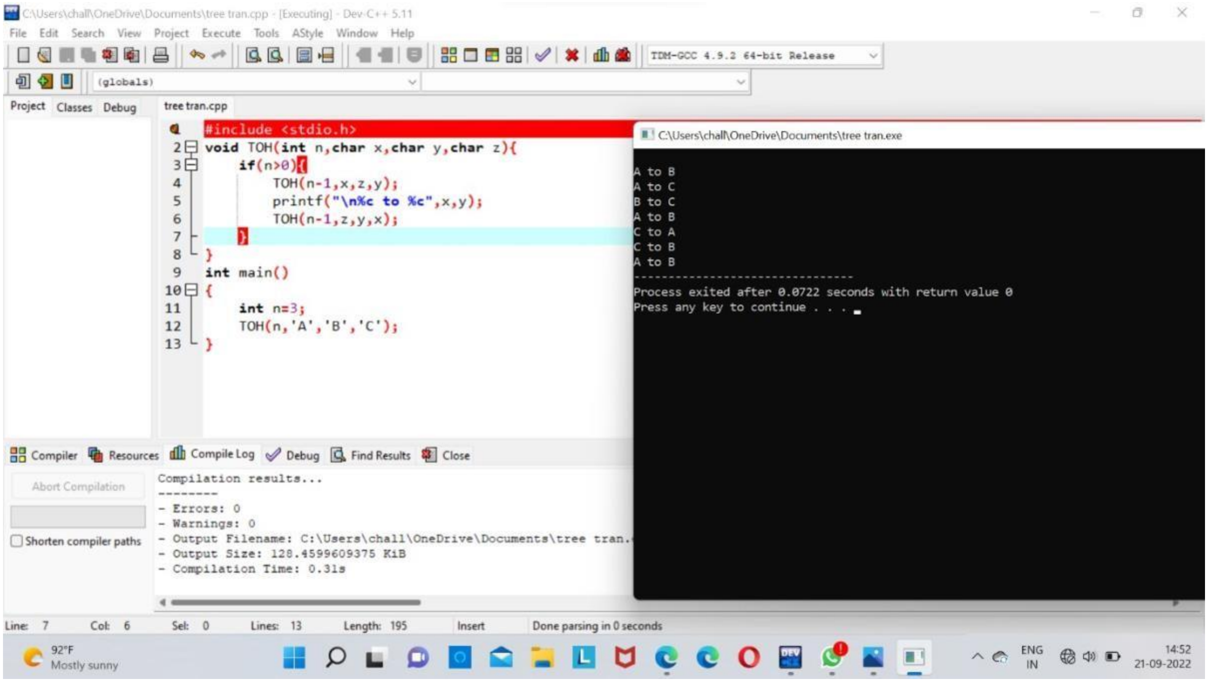
EXPERIMENT:10(LINKED LIST(OUTPUT))


C:\Users\chall\OneDrive\Documents\array insert.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
(globals)
Project Classes Debug
[*] array insert.cpp
Compiler Resources Compile Log Debug Find Results
Line: 79 Col: 3 Sel: 0 Lines: 106 Length: 2754 Insert Done parsing i
90°F Mostly cloudy
ENG IN 16:50 20-09-2022
C:\Users\chall\OneDrive\Documents\array insert.exe

```c
void printList(struct Node* node) {
    while (node != NULL) {
    printf(" %d ", node->data);
    node = node->next;
    }
}
int main() {
    struct Node* head = NULL;
    insertAtEnd(&head, 1);
    insertAtBeginning(&head, 2);
    insertAtBeginning(&head, 3);
    insertAtEnd(&head, 4);
    insertAfter(head->next, 5);
    printf("Linked list: ");
    printList(head);
    printf("\nAfter deleting an element: ");
    deleteNode(&head, 3);
    printList(head);
    int item_to_find = 3;
    if (searchNode(&head, item_to_find)) {
    printf("\n%d is found", item_to_find);
    } else {
    printf("\n%d is not found", item_to_find);
    }
    sortLinkedList(&head);
    printf("\nSorted List: ");
```

```
Linked list:  3  2  5  1  4
After deleting an element:  2  5  1  4
3 is not found
Sorted List:  1  2  4  5
--------------------------------
Process exited after 0.05659 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:11(STACK OPERATIONS(OUTPUT))

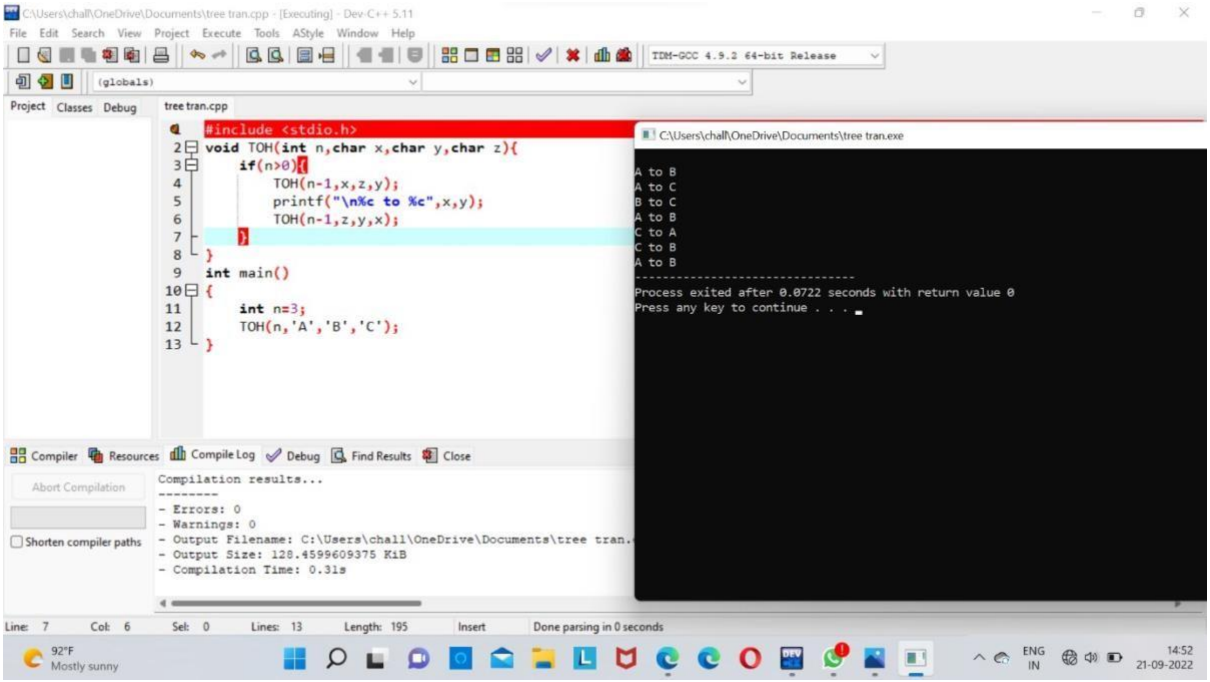

C:\Users\chall\OneDrive\Documents\tree tran.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
tree tran.cpp
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Line: 7 Col: 6 Sel: 0 Lines: 13 Length: 195 Insert Done parsing in 0 seconds
92°F Mostly sunny
ENG IN 14:52 21-09-2022
C:\Users\chall\OneDrive\Documents\tree tran.exe

```c
#include <stdio.h>
void TOH(int n,char x,char y,char z){
    if(n>0){
        TOH(n-1,x,z,y);
        printf("\n%c to %c",x,y);
        TOH(n-1,z,y,x);
    }
}
int main()
{
    int n=3;
    TOH(n,'A','B','C');
}
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\chall\OneDrive\Documents\tree tran.
- Output Size: 128.4599609375 KiB
- Compilation Time: 0.31s
```

```

A to B
A to C
B to C
A to B
C to A
C to B
A to B
--------------------------------
Process exited after 0.0722 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:12(STACK APPLICATION)

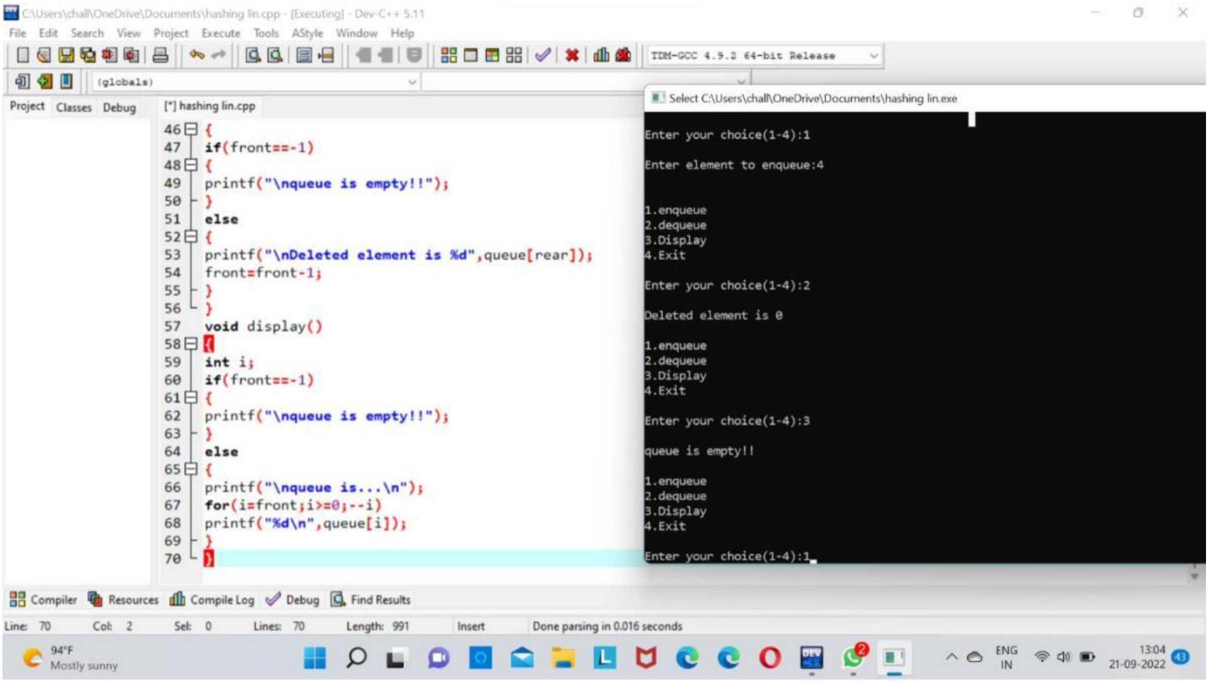

C:\Users\chall\OneDrive\Documents\tree tran.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
tree tran.cpp
C:\Users\chall\OneDrive\Documents\tree tran.exe
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
Line: 7 Col: 6 Sel: 0 Lines: 13 Length: 195 Insert Done parsing in 0 seconds
92°F
Mostly sunny
ENG
IN
14:52
21-09-2022

```c
#include <stdio.h>
void TOH(int n,char x,char y,char z){
    if(n>0){
        TOH(n-1,x,z,y);
        printf("\n%c to %c",x,y);
        TOH(n-1,z,y,x);
    }
}
int main()
{
    int n=3;
    TOH(n,'A','B','C');
}
```

```
A to B
A to C
B to C
A to B
C to A
C to B
A to B
--------------------------------
Process exited after 0.0722 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\chall\OneDrive\Documents\tree tran.
- Output Size: 128.4599609375 KiB
- Compilation Time: 0.31s
```

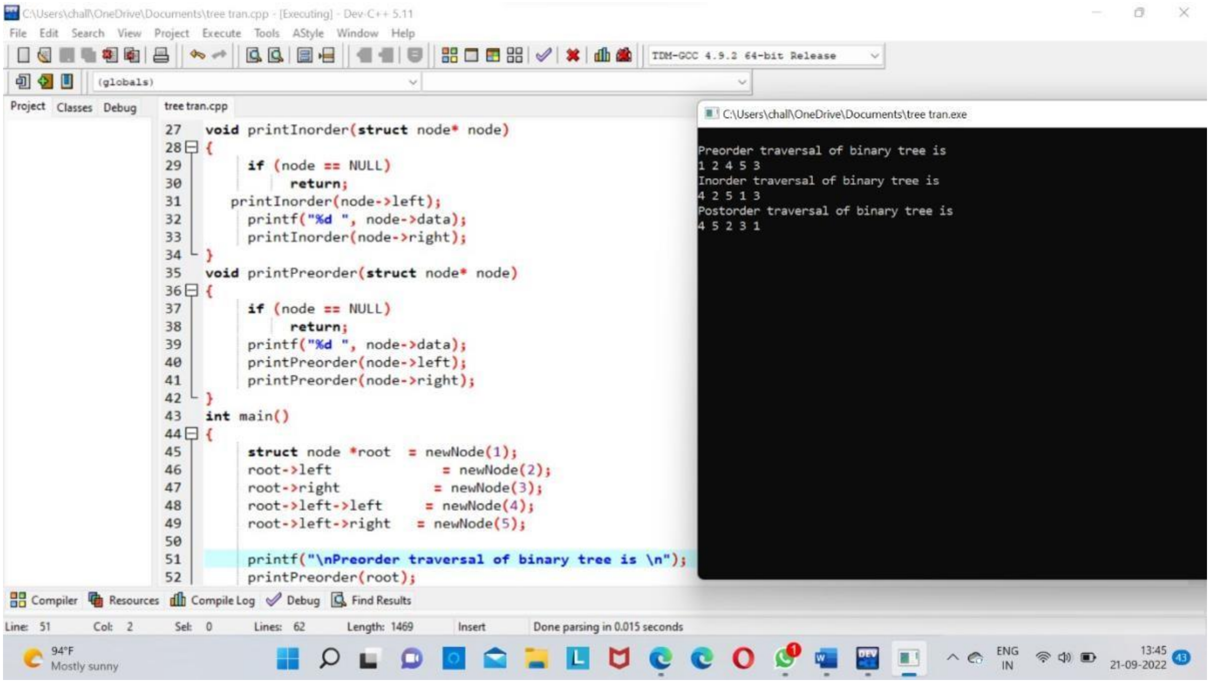
EXPERIMENT:13(QUEUE OPERATIONS(OUTPUT)


C:\Users\chall\OneDrive\Documents\hashing lin.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
[*] hashing lin.cpp
Select C:\Users\chall\OneDrive\Documents\hashing lin.exe
Compiler Resources Compile Log Debug Find Results
Line: 70 Col: 2 Sel: 0 Lines: 70 Length: 991 Insert Done parsing in 0.016 seconds
94°F
Mostly sunny
ENG
IN
13:04
21-09-2022

```c
{
if(front==-1)
{
printf("\nqueue is empty!!");
}
else
{
printf("\nDeleted element is %d",queue[rear]);
front=front-1;
}
}
void display()
{
int i;
if(front==-1)
{
printf("\nqueue is empty!!");
}
else
{
printf("\nqueue is...\n");
for(i=front;i>=0;--i)
printf("%d\n",queue[i]);
}
}
```

```
Enter your choice(1-4):1

Enter element to enqueue:4


1.enqueue
2.dequeue
3.Display
4.Exit

Enter your choice(1-4):2

Deleted element is 0

1.enqueue
2.dequeue
3.Display
4.Exit

Enter your choice(1-4):3

queue is empty!!

1.enqueue
2.dequeue
3.Display
4.Exit

Enter your choice(1-4):1
```

EXPERIMENT:14(TREE TRANSVERSAL(OUTPUT)

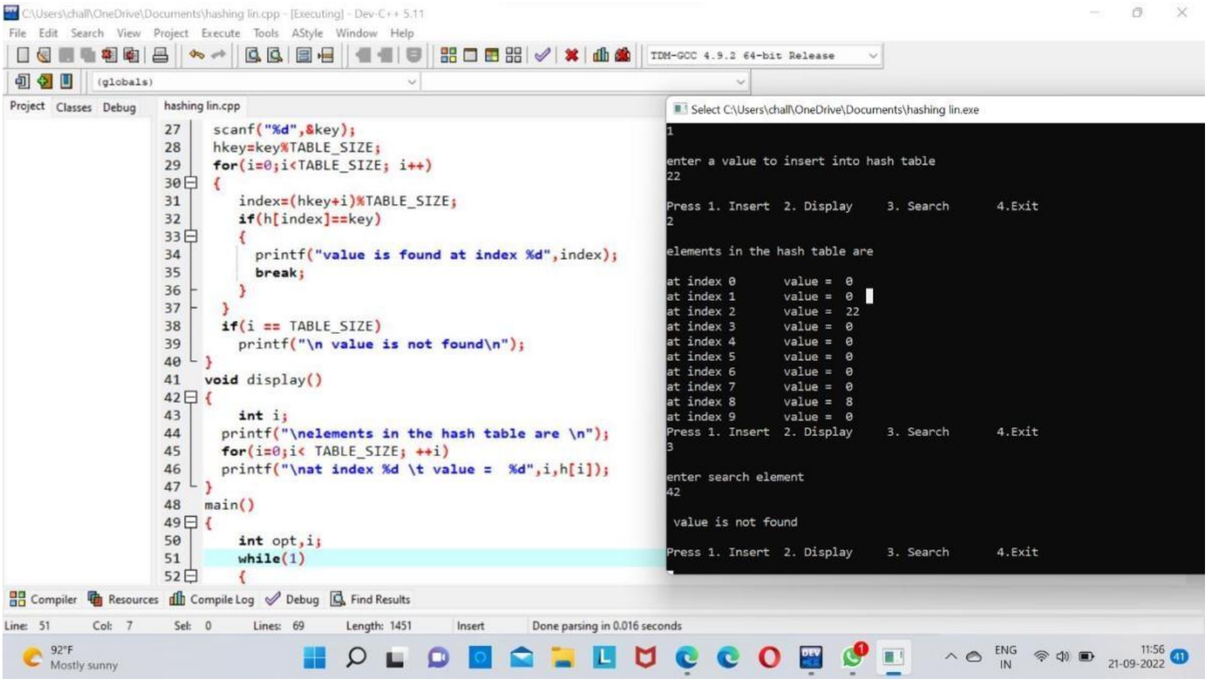


C:\Users\chall\OneDrive\Documents\tree tran.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
tree tran.cpp
C:\Users\chall\OneDrive\Documents\tree tran.exe
Compiler Resources Compile Log Debug Find Results
Line: 51 Col: 2 Sel: 0 Lines: 62 Length: 1469 Insert Done parsing in 0.015 seconds
94°F Mostly sunny
ENG IN
13:45 21-09-2022

```
void printInorder(struct node* node)
{
    if (node == NULL)
        return;
  printInorder(node->left);
    printf("%d ", node->data);
    printInorder(node->right);
}
void printPreorder(struct node* node)
{
    if (node == NULL)
        return;
    printf("%d ", node->data);
    printPreorder(node->left);
    printPreorder(node->right);
}
int main()
{
    struct node *root  = newNode(1);
    root->left             = newNode(2);
    root->right          = newNode(3);
    root->left->left     = newNode(4);
    root->left->right  = newNode(5);

    printf("\nPreorder traversal of binary tree is \n");
    printPreorder(root);
```

```
Preorder traversal of binary tree is
1 2 4 5 3
Inorder traversal of binary tree is
4 2 5 1 3
Postorder traversal of binary tree is
4 5 2 3 1
```

EXPERIMENT:-15(HASH USING LINEAR PROBING(OUTPUT))

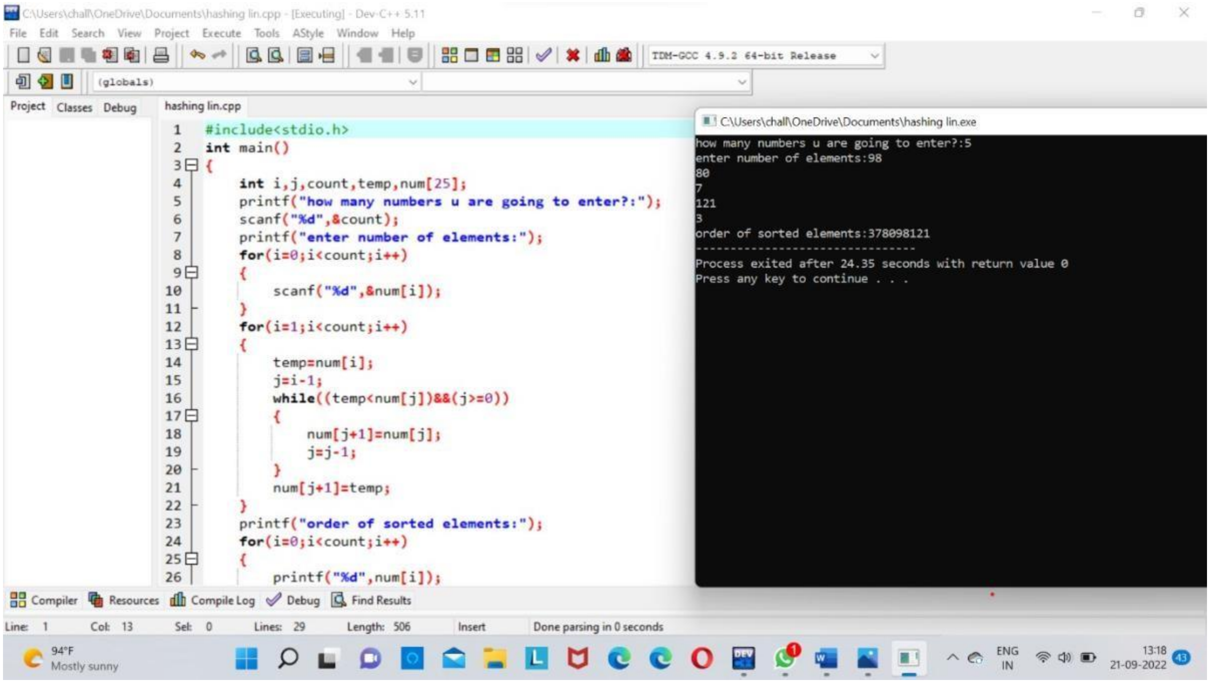


C:\Users\chall\OneDrive\Documents\hashing lin.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
hashing lin.cpp
Select C:\Users\chall\OneDrive\Documents\hashing lin.exe
Compiler Resources Compile Log Debug Find Results
Line: 51 Col: 7 Sel: 0 Lines: 69 Length: 1451 Insert Done parsing in 0.016 seconds
92°F Mostly sunny
ENG IN
11:56 21-09-2022

```
 scanf("%d",&key);
 hkey=key%TABLE_SIZE;
 for(i=0;i<TABLE_SIZE; i++)
 {
    index=(hkey+i)%TABLE_SIZE;
    if(h[index]==key)
    {
      printf("value is found at index %d",index);
      break;
    }
  }
  if(i == TABLE_SIZE)
    printf("\n value is not found\n");
}
void display()
{
    int i;
  printf("\nelements in the hash table are \n");
  for(i=0;i< TABLE_SIZE; ++i)
  printf("\nat index %d \t value =  %d",i,h[i]);
}
main()
{
    int opt,i;
    while(1)
    {
```

```
1

enter a value to insert into hash table
22

Press 1. Insert  2. Display     3. Search       4.Exit
2

elements in the hash table are

at index 0       value =  0
at index 1       value =  0
at index 2       value =  22
at index 3       value =  0
at index 4       value =  0
at index 5       value =  0
at index 6       value =  0
at index 7       value =  0
at index 8       value =  8
at index 9       value =  0
Press 1. Insert  2. Display     3. Search       4.Exit
3

enter search element
42

 value is not found

Press 1. Insert  2. Display     3. Search       4.Exit
```

EXPERIMENT:16(INSERTION SORTING(OUTPUT)



C:\Users\chall\OneDrive\Documents\hashing lin.cpp - [Executing] - Dev-C++ 5.11

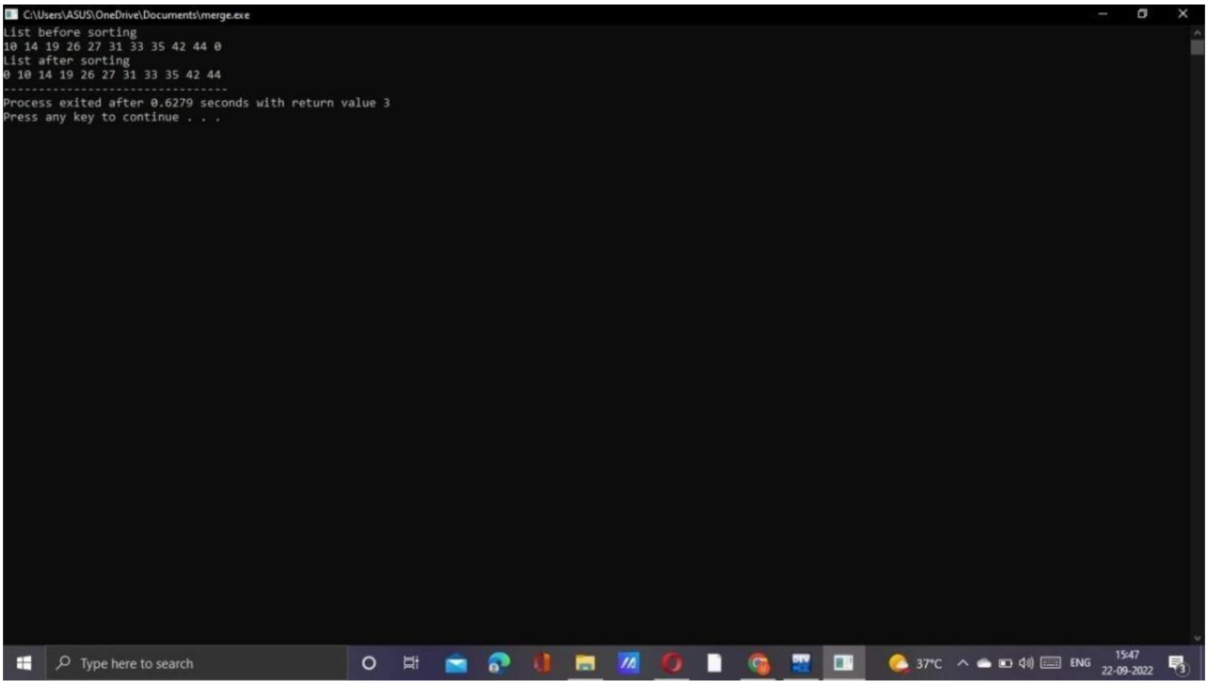
```c
#include<stdio.h>
int main()
{
    int i,j,count,temp,num[25];
    printf("how many numbers u are going to enter?:");
    scanf("%d",&count);
    printf("enter number of elements:");
    for(i=0;i<count;i++)
    {
        scanf("%d",&num[i]);
    }
    for(i=1;i<count;i++)
    {
        temp=num[i];
        j=i-1;
        while((temp<num[j])&&(j>=0))
        {
            num[j+1]=num[j];
            j=j-1;
        }
        num[j+1]=temp;
    }
    printf("order of sorted elements:");
    for(i=0;i<count;i++)
    {
        printf("%d",num[i]);
```

C:\Users\chall\OneDrive\Documents\hashing lin.exe

```
how many numbers u are going to enter?:5
enter number of elements:98
80
7
121
3
order of sorted elements:378098121
--------------------------------
Process exited after 24.35 seconds with return value 0
Press any key to continue . . .
```

File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
Project Classes Debug
hashing lin.cpp
Compiler Resources Compile Log Debug Find Results
Line: 1 Col: 13 Sel: 0 Lines: 29 Length: 506 Insert Done parsing in 0 seconds
94°F Mostly sunny
ENG IN
13:18 21-09-2022

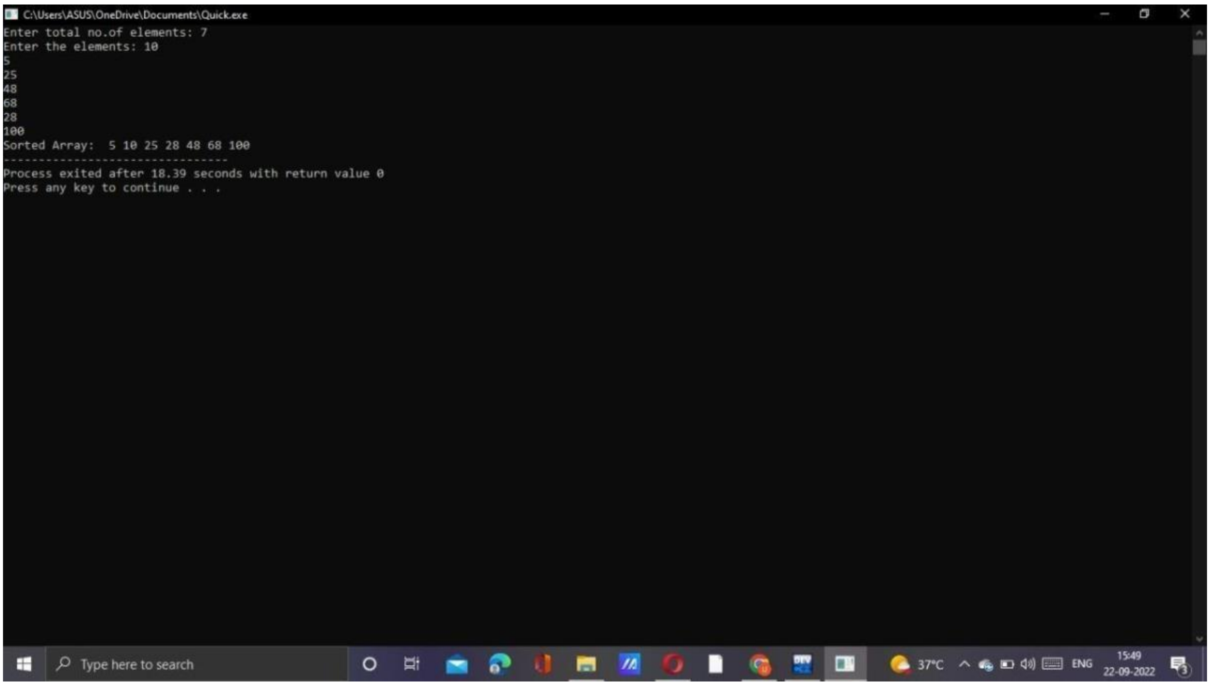
EXPERIMENT:17(MERGE SORTING)



C:\Users\ASUS\OneDrive\Documents\merge.exe

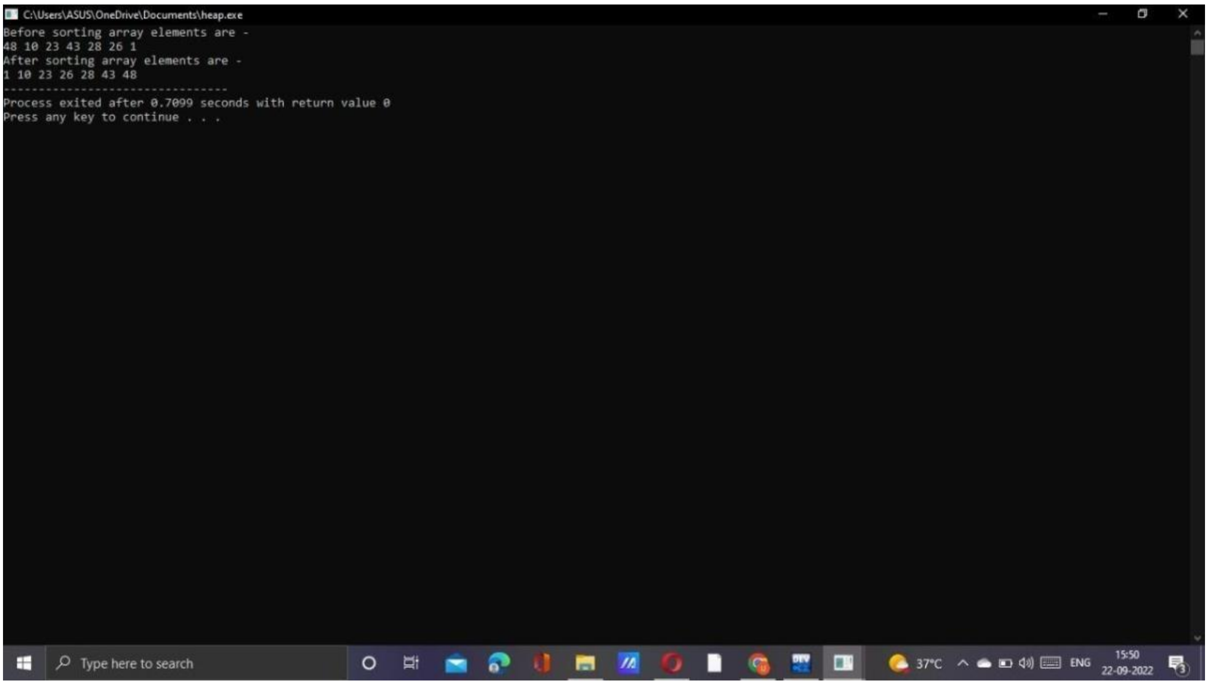
```
List before sorting
10 14 19 26 27 31 33 35 42 44 0
List after sorting
0 10 14 19 26 27 31 33 35 42 44
--------------------------------
Process exited after 0.6279 seconds with return value 3
Press any key to continue . . .
```

EXPERIMENT:-18(QUICK SORT(OUTPUT))



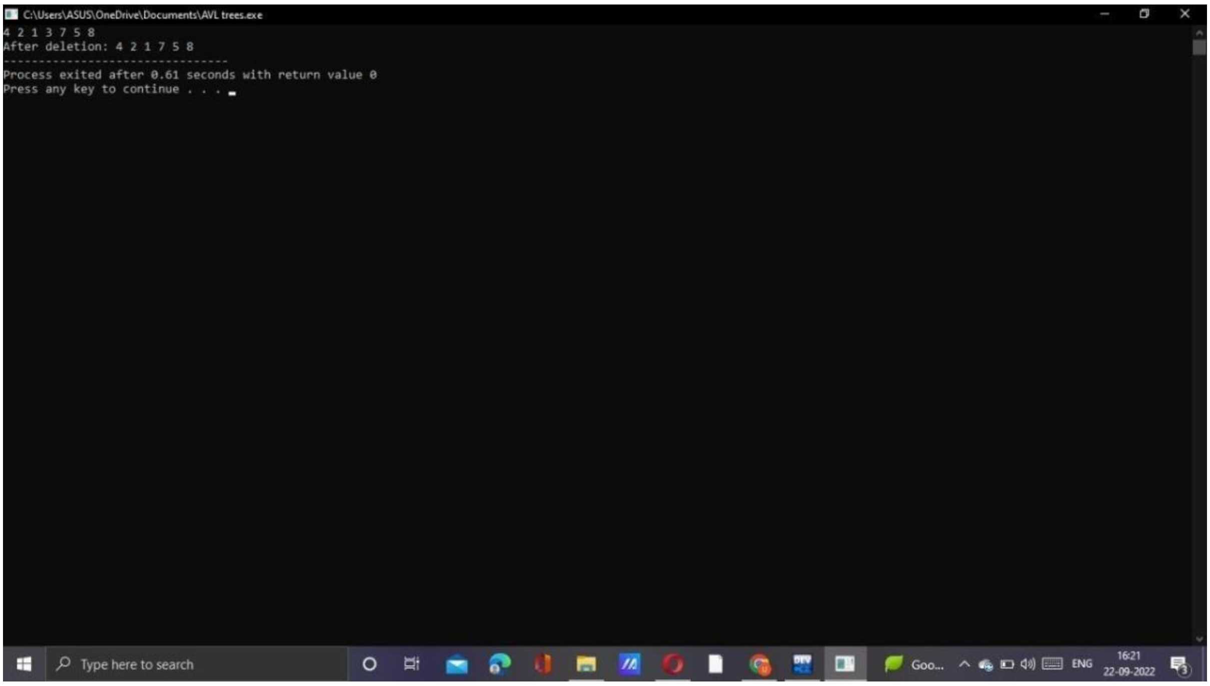
```
Enter total no.of elements: 7
Enter the elements: 10
5
25
48
68
28
100
Sorted Array:  5 10 25 28 48 68 100
--------------------------------
Process exited after 18.39 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:-19(HEAP SORT (OUTPUT))



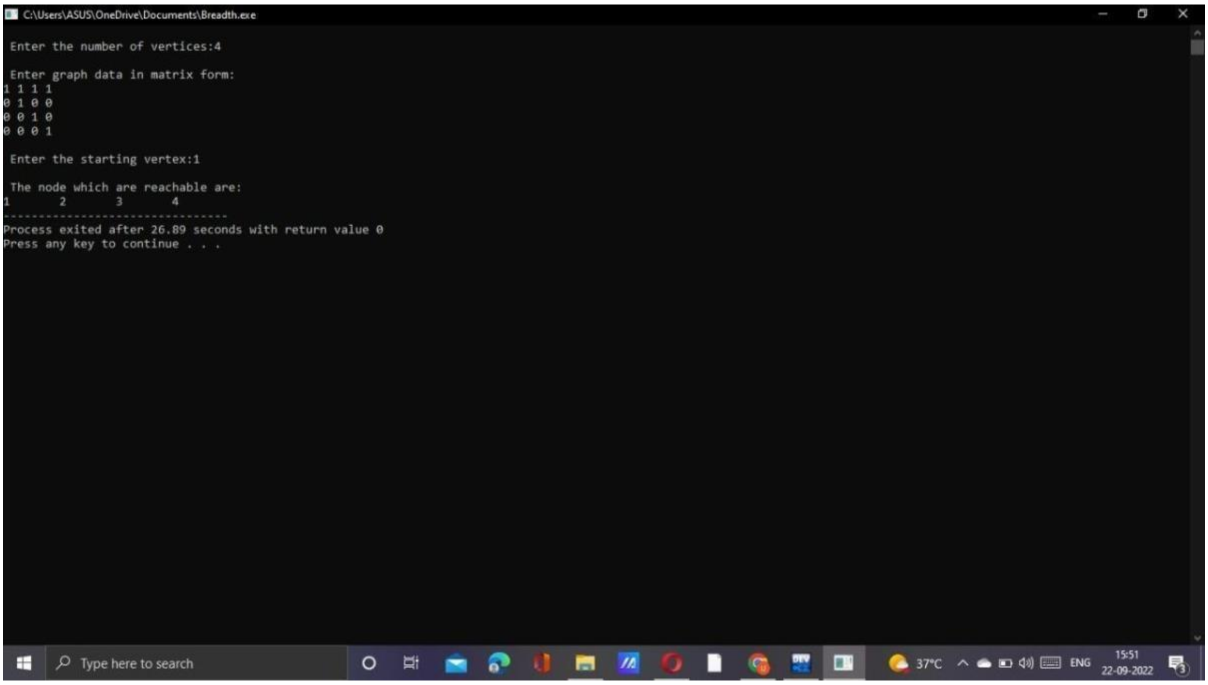
```
Before sorting array elements are -
48 10 23 43 28 26 1
After sorting array elements are -
1 10 23 26 28 43 48
--------------------------------
Process exited after 0.7099 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:20(AVL OPERATIONS(OUTPUT))



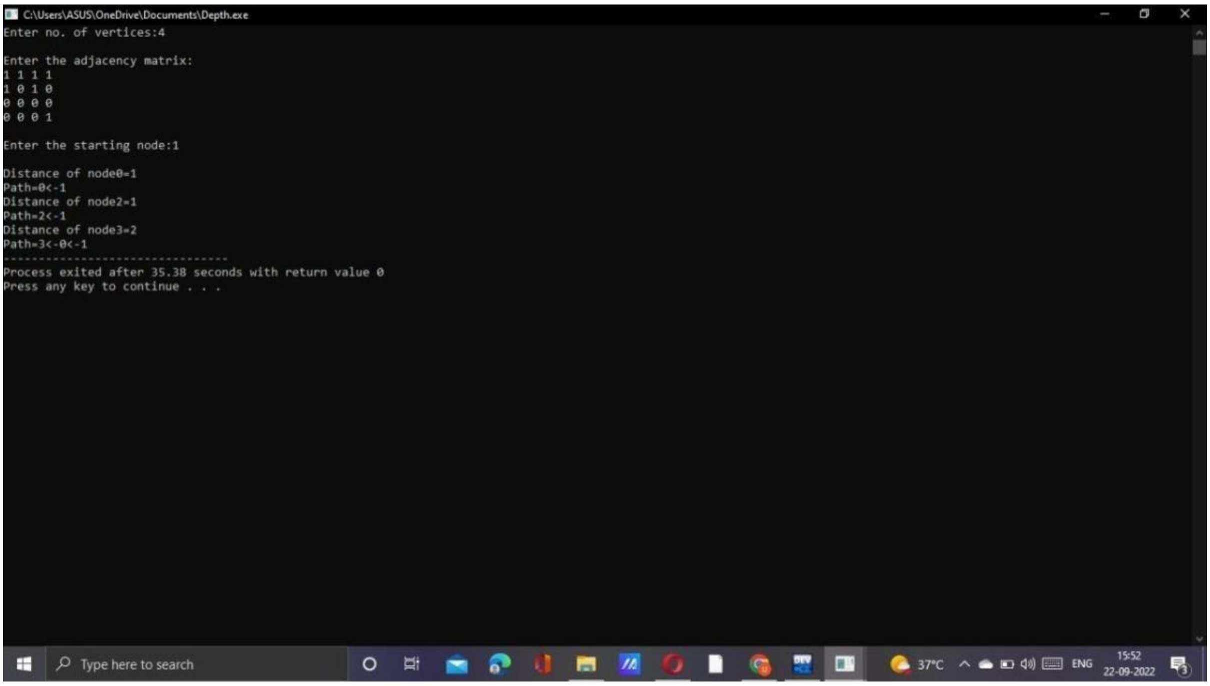
```
4 2 1 3 7 5 8
After deletion: 4 2 1 7 5 8
--------------------------------
Process exited after 0.61 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:21(BFS(OUTPUT))



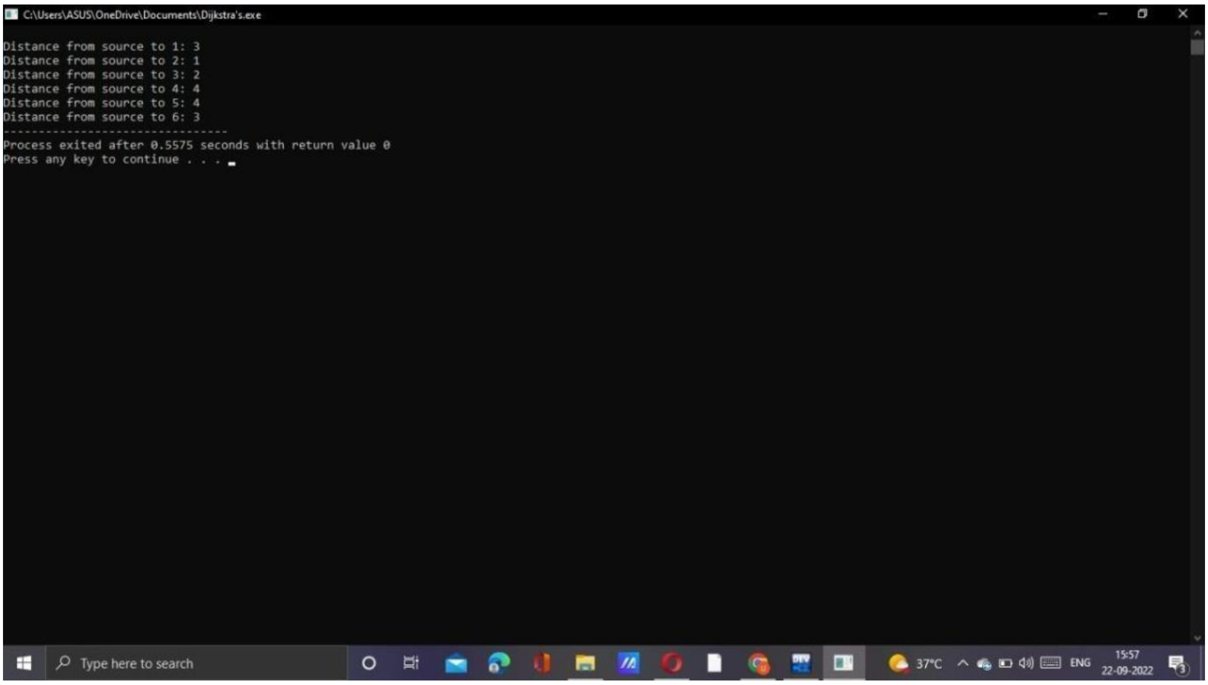
```
 Enter the number of vertices:4

 Enter graph data in matrix form:
1 1 1 1
0 1 0 0
0 0 1 0
0 0 0 1

 Enter the starting vertex:1

 The node which are reachable are:
1       2       3       4
--------------------------------
Process exited after 26.89 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:22(DFS(OUTPUT))



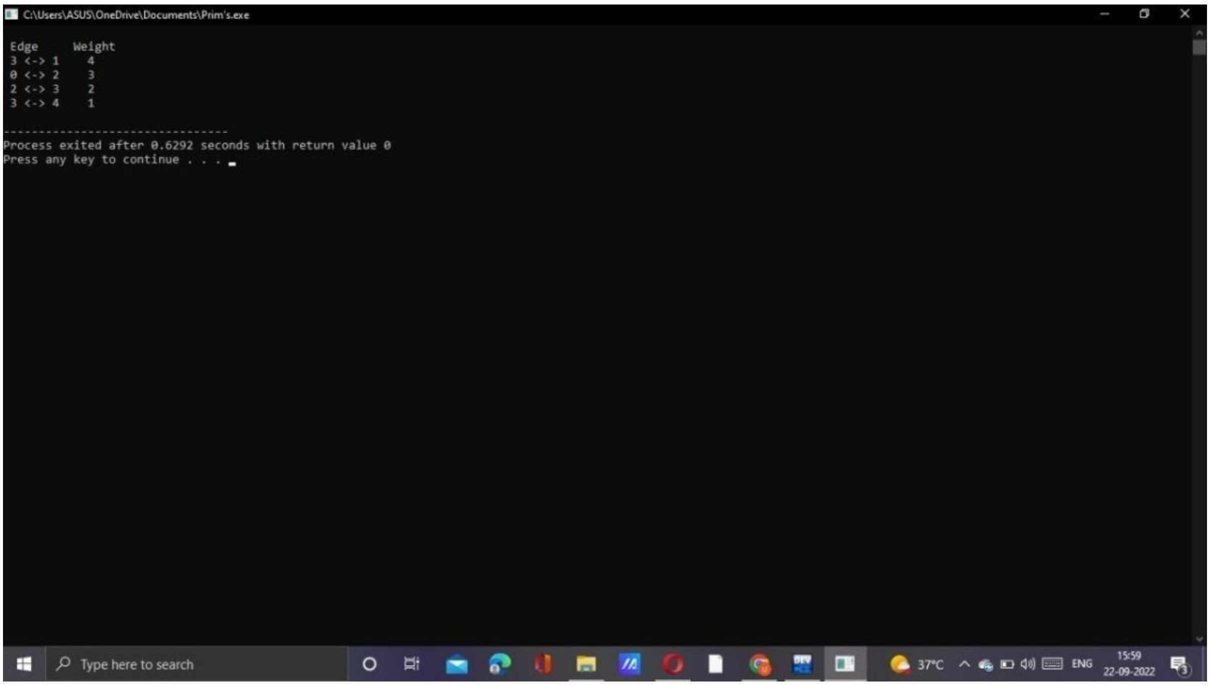
```
Enter no. of vertices:4

Enter the adjacency matrix:
1 1 1 1
1 0 1 0
0 0 0 0
0 0 0 1

Enter the starting node:1

Distance of node0=1
Path=0<-1
Distance of node2=1
Path=2<-1
Distance of node3=2
Path=3<-0<-1
--------------------------------
Process exited after 35.38 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:23(DIJIKSTRA ALGORITHM(OUTPUT))



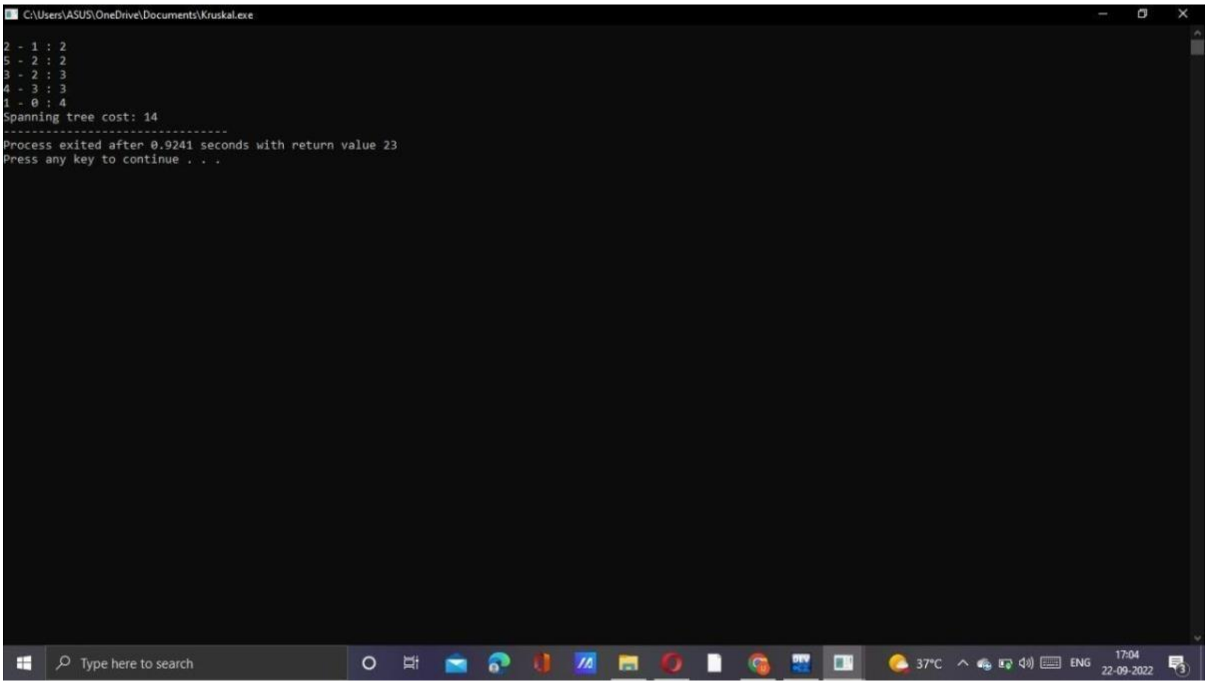
```
Distance from source to 1: 3
Distance from source to 2: 1
Distance from source to 3: 2
Distance from source to 4: 4
Distance from source to 5: 4
Distance from source to 6: 3
--------------------------------
Process exited after 0.5575 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:24(PRIM’S ALGORITHM(OUTPUT))



```
 Edge    Weight
 3 <-> 1   4
 0 <-> 2   3
 2 <-> 3   2
 3 <-> 4   1

--------------------------------
Process exited after 0.6292 seconds with return value 0
Press any key to continue . . .
```

EXPERIMENT:25(KRUKAL ALGORITHM(OUTPUT)



```
2 - 1 : 2
5 - 2 : 2
3 - 2 : 3
4 - 3 : 3
1 - 0 : 4
Spanning tree cost: 14
--------------------------------
Process exited after 0.9241 seconds with return value 23
Press any key to continue . . .
```