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COURSE NAME:-DATA STRUCTURES FOR EXPRESSION EVALUATION

COURSE CODE:-CSA0374

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EXPERIMENT:-7 (ARRAY OPERATIONS)

The screenshot shows the Dev-C++ IDE with a project named 'linear search.cpp'. The code implements a linear search function. The main function initializes an array with values {3, 5, 7, 9, 8, 22}, sets the size to 6, and searches for the key 9. The output window shows the program found the element at position 9 (index 4) and exited successfully.

```
1 #include<stdio.h>
2 int findelement(int a[],int n,int key){
3     int i;
4     for( i=0;i<n;++i)
5     {
6         if (a[i]==key)
7             return i;
8     }
9     return -1;
10 }
11 int main(){
12     int a[]={3,5,7,9,8,22};
13     int n=sizeof(a)/sizeof(a[0]);
14     int key=9;
15     int position=findelement(a,n,key);
16     if(position==-1)
17     {
18         printf("elements %d notfound",key);
19     }
20     else
21     {
22         printf("position of %d:%d",key,position+9);
23     }
24     return 0;
25 }
```

Output: position of 9:12
Process exited after 0.06881 seconds with return value 0
Press any key to continue . . .

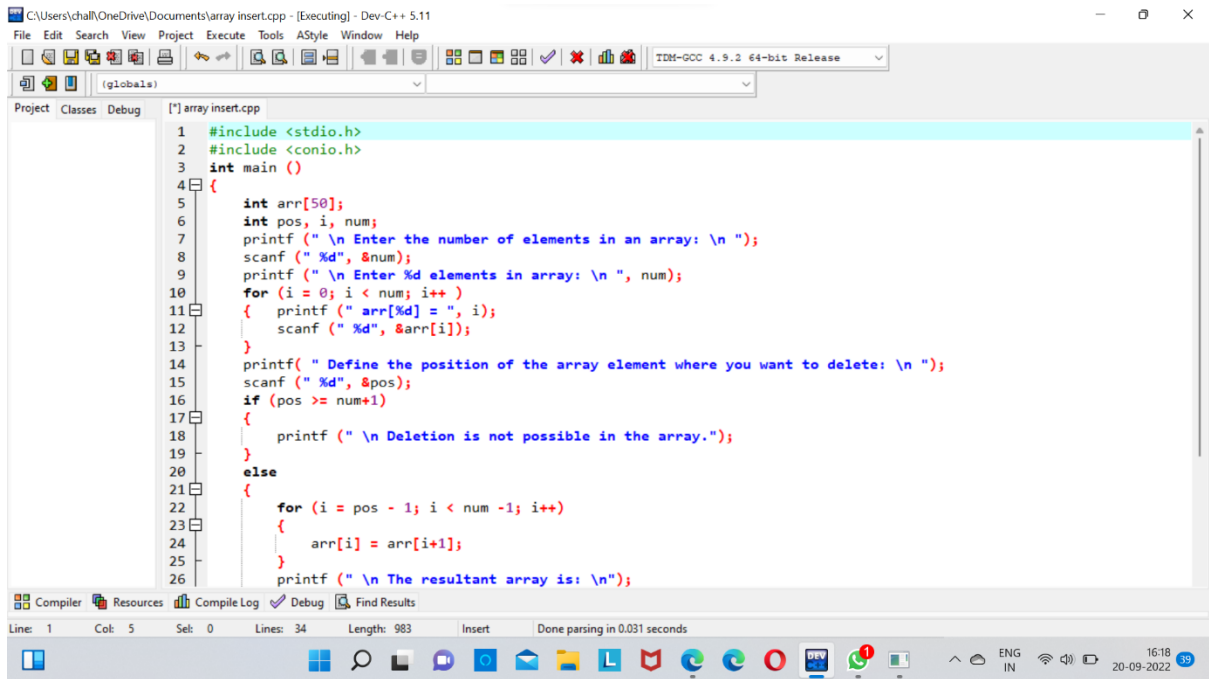
INSERTION OF ARRAY:-

The screenshot shows the Dev-C++ IDE with a project named 'array insert.cpp'. The code prompts the user to enter an array of values, a location, and a value to insert. It then shifts elements to the right and inserts the new value. The output window shows the user input and the resulting array.

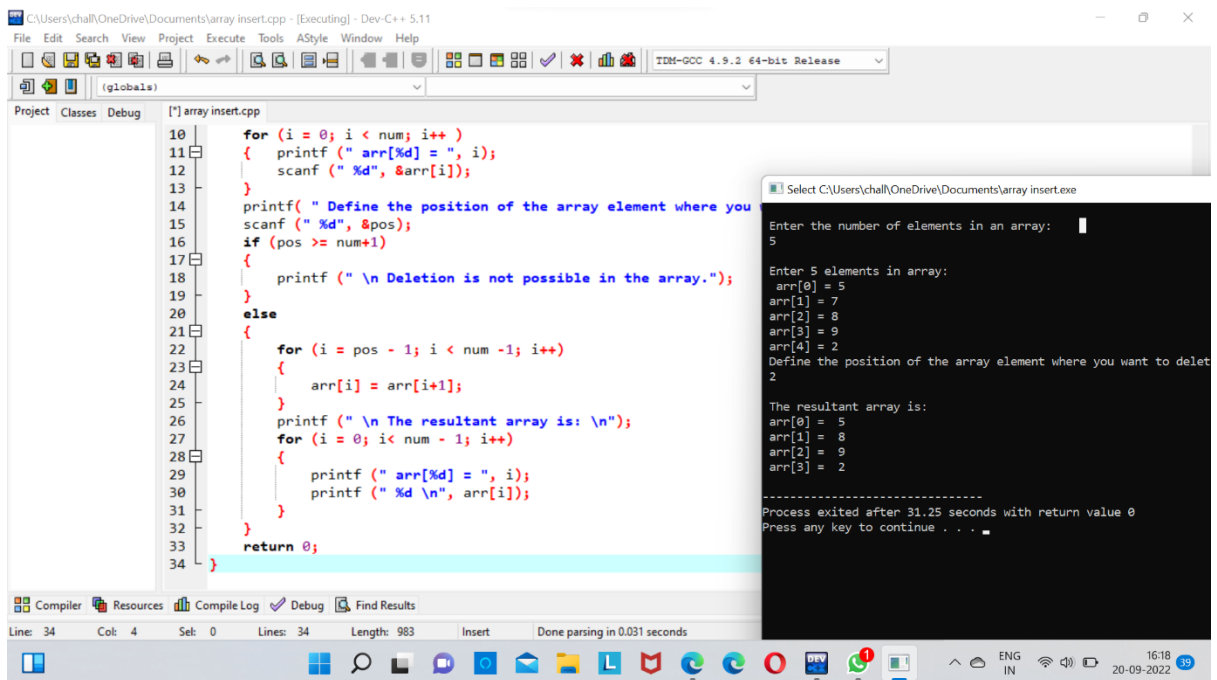
```
1 #include<stdio.h>
2 int main()
3 {
4     int position,c,n,value,array[50];
5     printf("enter the number if values in an array");
6     scanf("%d",&n);
7     printf("enter the values of %d\n",n);
8     for(c=0;c<n;c++)
9     {
10         scanf("%d",&array[c]);
11     }
12     printf("enter the location");
13     scanf("%d",&position);
14     printf("enter the value");
15     scanf("%d",&value);
16     for(c=n-1;c>=position-1;c--)
17     {
18         array[c+1]=array[c];
19     }
20     array[position]=value;
21     printf("resultant array is");
22     for(c=0;c<n;c++)
23     {
24         printf("%d ",array[c]);
25     }
26 }
```

Output: enter the number if values in an array3
enter the values of 3
enter the location2
enter the value9
resultant array is6
9
9
9
Process exited after 18.26 seconds with return value 0
Press any key to continue . . .

DELETION:-



```
1 #include <stdio.h>
2 #include <conio.h>
3 int main ()
4 {
5     int arr[50];
6     int pos, i, num;
7     printf (" \n Enter the number of elements in an array: \n ");
8     scanf (" %d", &num);
9     printf (" \n Enter %d elements in array: \n ", num);
10    for (i = 0; i < num; i++)
11    { printf (" arr[%d] = ", i);
12      scanf (" %d", &arr[i]);
13    }
14    printf (" Define the position of the array element where you want to delete: \n ");
15    scanf (" %d", &pos);
16    if (pos >= num+1)
17    {
18        printf (" \n Deletion is not possible in the array.");
19    }
20    else
21    {
22        for (i = pos - 1; i < num - 1; i++)
23        {
24            arr[i] = arr[i+1];
25        }
26        printf (" \n The resultant array is: \n");
```



```
10    for (i = 0; i < num; i++)
11    { printf (" arr[%d] = ", i);
12      scanf (" %d", &arr[i]);
13    }
14    printf (" Define the position of the array element where you want to delete: \n ");
15    scanf (" %d", &pos);
16    if (pos >= num+1)
17    {
18        printf (" \n Deletion is not possible in the array.");
19    }
20    else
21    {
22        for (i = pos - 1; i < num - 1; i++)
23        {
24            arr[i] = arr[i+1];
25        }
26        printf (" \n The resultant array is: \n");
27        for (i = 0; i < num - 1; i++)
28        {
29            printf (" arr[%d] = ", i);
30            printf (" %d \n", arr[i]);
31        }
32    }
33    return 0;
34 }
```

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

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

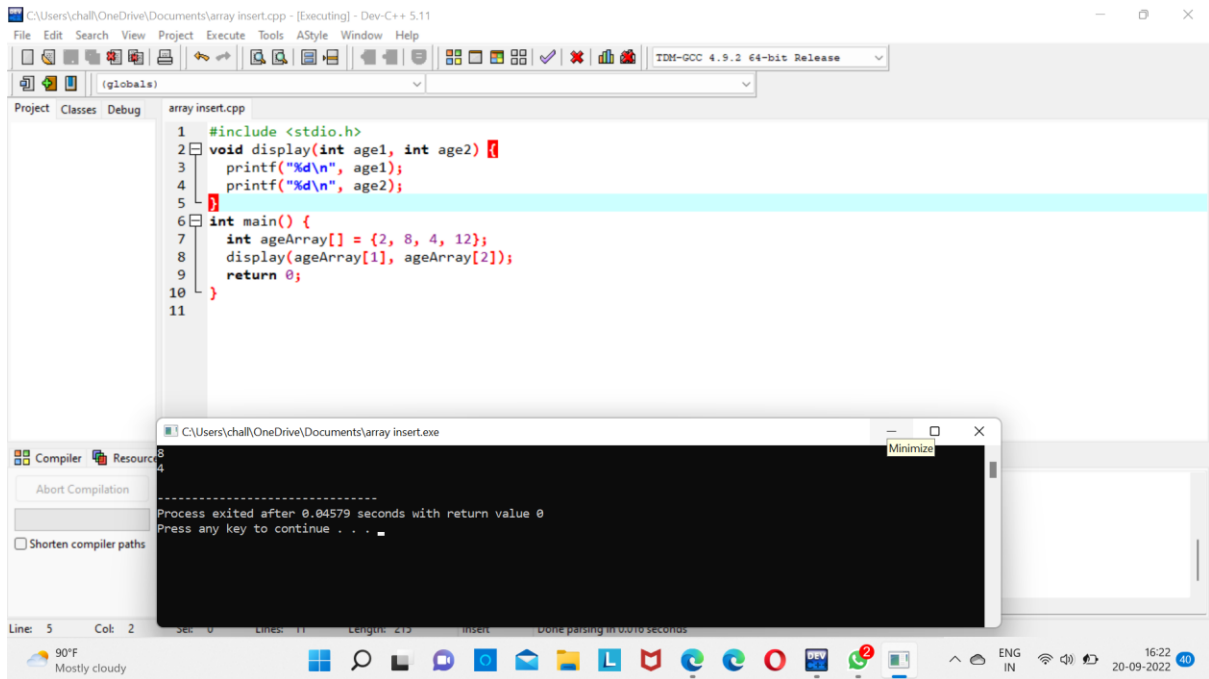
Define the position of the array element where you want to delete: 2

The resultant array is:

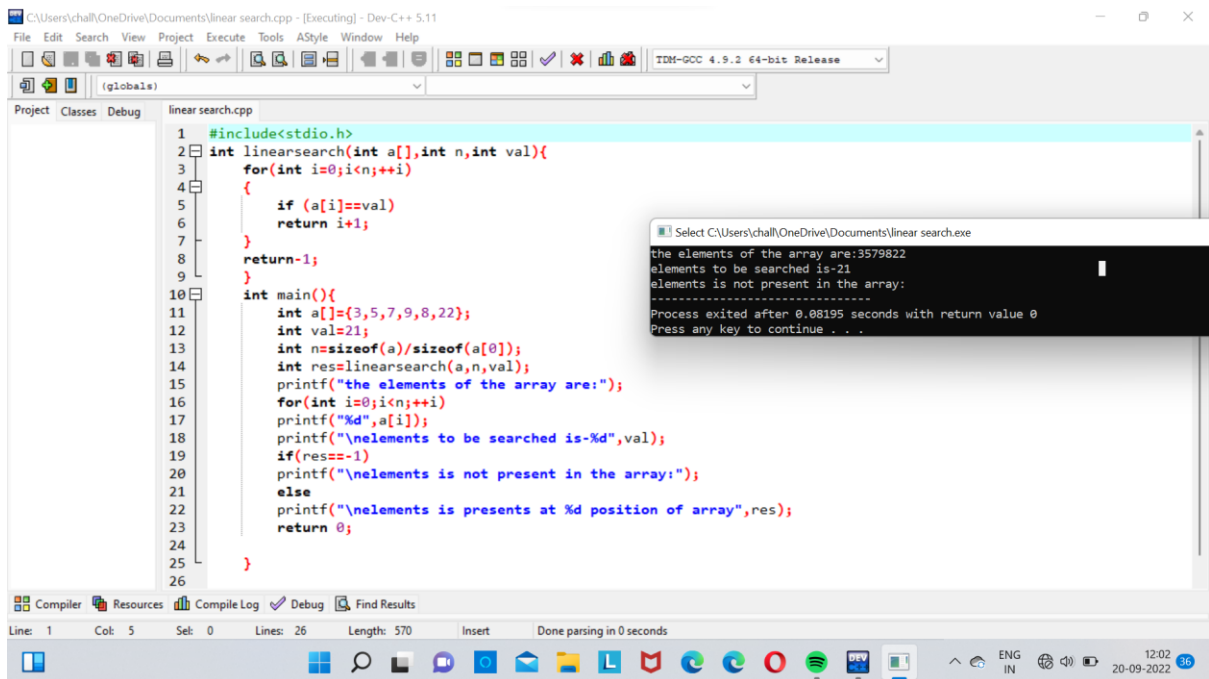
arr[0] = 5
arr[1] = 8
arr[2] = 9
arr[3] = 2

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

DISPLAY:-



EXPERIMENT :-8(LINEARSEARCH)



EXPERIMENT:9(BINARY SEARCH)

