

# Task 1

```
#include<stdio.h>

void insertion_sorting(int arr[], int size)
{
    int i,j;
    for(i=1; i<size; i++){
        int temp=arr[i];
        for(j=i-1; j>=0 && arr[j]>temp; j--){
            arr[j+1]=arr[j];
        }
        arr[j+1]=temp;
    }
}

void print_array(int arr[], int size){
    int i;
    for(i=0; i<size; i++){
        printf("%d ",arr[i]);
    }
}

int main()
{
    int arr[10];
    int i,size=10;
    printf("Enter Your Array is :");
    for(i=0; i<10; i++)
    {
```

```

scanf("%d",&arr[i]);
}

printf("\n\nThe Sorted Array is : ");

insertion_sorting(arr,size);

print_array(arr,size);

return 0;
}

```

### Screenshote of Task 1

The screenshot shows a C++ IDE with a file named 'Lab Final.c'. The code in the file is as follows:

```

1 #include<stdio.h>
2
3 int main()
4 {
5     int arr[10];
6     int i;
7     int size;
8     printf("Enter Your Array is :");
9     for(i=0; i<size; i++)
10    {
11        scanf("%d",&arr[i]);
12    }
13    printf("\n\nThe Sorted Array is : ");
14    insertion_sorting(arr,size);
15    print_array(arr,size);
16    return 0;
17 }

```

The console output shows the execution of the program. It prompts the user to enter the array, and the user enters the values: 1, 2, 3, 8, 36, 45, 52, 57, 58, 96. The program then prints the sorted array: 1 2 3 8 36 45 52 57 58 96. The execution time is 15.172 s.

The console output also shows the following messages:

```

Process returned 0 (0x0)   execution time : 15.172 s
Press any key to continue.

```

The IDE interface includes a menu bar with options like File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, and Help. The status bar at the bottom shows the current file path, the compiler (C/C++), the window title (Windows (CR+LF)), the window name (WINDOWS-1252), the current line and column (Line 1, Col 1, Pos 0), the current mode (Insert), the current language (Read/Write), the current theme (default), and the system clock (1:19 PM 5/16/2024).

## Task 2

```
#include<stdio.h>

void insertion_sorting(int arr[], int size)
{
    int i,j;
    for(i=1; i<size; i++){
        int temp=arr[i];
        for(j=i-1; j>=0 && arr[j]>temp; j--){
            arr[j+1]=arr[j];
        }
        arr[j+1]=temp;
    }
}

void print_array(int arr[], int size){
    int i;
    for(i=0; i<size; i++){
        printf("%d ",arr[i]);
    }
}

int main()
{
    int arr[10];
    int i,size=10;
    printf("Enter Your Array is :");
    for(i=0; i<10; i++)
    {
```

```

scanf("%d",&arr[i]);
}

printf("\n\n\nThe Sorted Array is : ");

insertion_sorting(arr,size);

print_array(arr,size);

return 0;
}

```

## Screenshote of Task 2

The screenshot shows a C++ IDE with the following code in the editor:

```

1 #include<stdio.h>
2 void
3 {
4     Enter Your Roll : 12
5     13
6     14
7     15
8     16
9     17
10    18
11    19
12    20
13    21
14 void
15 {
16     Your Array is : 12 13 14 15 16 17 18 19 20 21
17     Which index element you want to remove : 9
18     1
19     Your Array is : 12 13 14 15 16 17 18 19 20
20     Process returned 0 (0x0)   execution time : 15.900 s
21     Press any key to continue.
22 }
23 int m
24 {
25
26     P
27     1
28     1
29     1
30     1
31     {
32         scanf("%d",&arr[i]);
33     }
34     print_array(arr,size);
35     printf("\nWhich index element you want to remove : ");
36     scanf("%d",&position);

```

The output window shows the following text:

```

Enter Your Roll : 12
13
14
15
16
17
18
19
20
21
Your Array is : 12 13 14 15 16 17 18 19 20 21
Which index element you want to remove : 9
1
Your Array is : 12 13 14 15 16 17 18 19 20
Process returned 0 (0x0)   execution time : 15.900 s
Press any key to continue.

```

The taskbar at the bottom shows the Windows taskbar with the search bar, taskbar icons, and the system tray showing the time as 1:19 PM on 5/16/2024.

