

1. (Insert an element)

```
#include <stdio.h>
```

```
int main() {
```

```
    int n = 4;
```

```
    int arr[5] = {10, 20, 30, 40, 0};
```

```
    int ele = 50;
```

```
    printf("Array before insertion\n");
```

```
    for (int i = 0; i < n; i++) {
```

```
        printf("%d ", arr[i]);
```

```
    }
```

```
    arr[n] = ele;
```

```
    printf("\nArray after insertion\n");
```

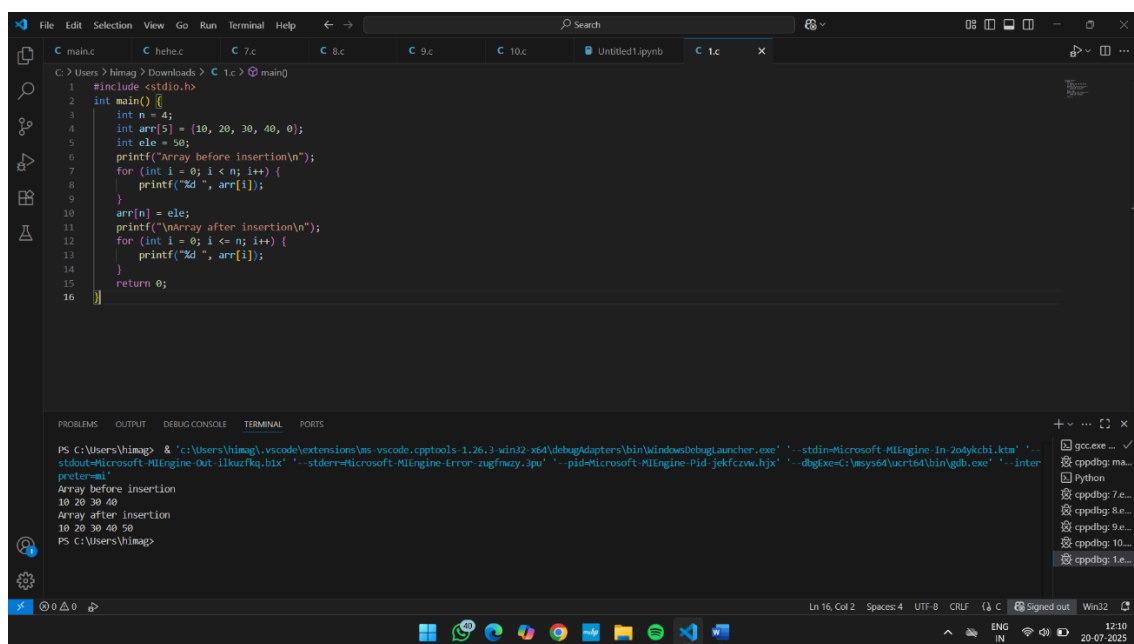
```
    for (int i = 0; i <= n; i++) {
```

```
        printf("%d ", arr[i]);
```

```
    }
```

```
    return 0;
```

```
}
```



```
C:\Users\himag> Downloads > C:\c> main()
1 #include <stdio.h>
2 int main() {
3     int n = 4;
4     int arr[5] = {10, 20, 30, 40, 0};
5     int ele = 50;
6     printf("Array before insertion\n");
7     for (int i = 0; i < n; i++) {
8         printf("%d ", arr[i]);
9     }
10    arr[n] = ele;
11    printf("\nArray after insertion\n");
12    for (int i = 0; i <= n; i++) {
13        printf("%d ", arr[i]);
14    }
15    return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\himag> & "c:\Users\himag\.vscode\extensions\ms-vscode.cpptools-1.26.2\win32-x64\debugadapters\bin\windowsDebugLauncher.exe" "-stdin=Microsoft.MiEngine.In-206ykcbi.ktm" "-stdout=Microsoft.MiEngine.Out-ilkufkq.blx" "-stderr=Microsoft.MiEngine.Error-zugfwzy.jpj" "-pid=Microsoft.MiEngine-Pid-jekfczw.hjx" "-dbgexe=c:\msys64\ucrt64\bin\gdb.exe" "-interpreter=mi"
Array before insertion
10 20 30 40
Array after insertion
10 20 30 40 50
PS C:\Users\himag>
```

Ln 16, Col 2 Spaces: 4 UTF-8 CRLF Signed out Win32 12:10 20-07-2025

2. (Largest Element)

```
#include <stdio.h>
```

```
int largest(int arr[], int n) {
```

```
int i;
```

```
int max = arr[0];
```

```
for (i = 1; i < n; i++)
```

```
if (arr[i] > max)
```

```
max = arr[i];
```

```
return max;
```

}

```
int main() {
```

```
int arr[] = { 10, 324, 45, 90, 9808 };
```

```
int n = sizeof(arr) / sizeof(arr[0]);
```

```
printf("%d", largest(arr, n));
```

```
return 0;
```

}

[illegible]

3. (2nd Largest Element)

```
#include <stdio.h>

void sortDescending(int arr[], int n) {
    for(int i = 0; i < n-1; i++) {
        for(int j = i+1; j < n; j++) {
            if(arr[i] < arr[j]) {
                // Swap
                int temp = arr[i];
                arr[i] = arr[j];
                arr[j] = temp;
            }
        }
    }
}

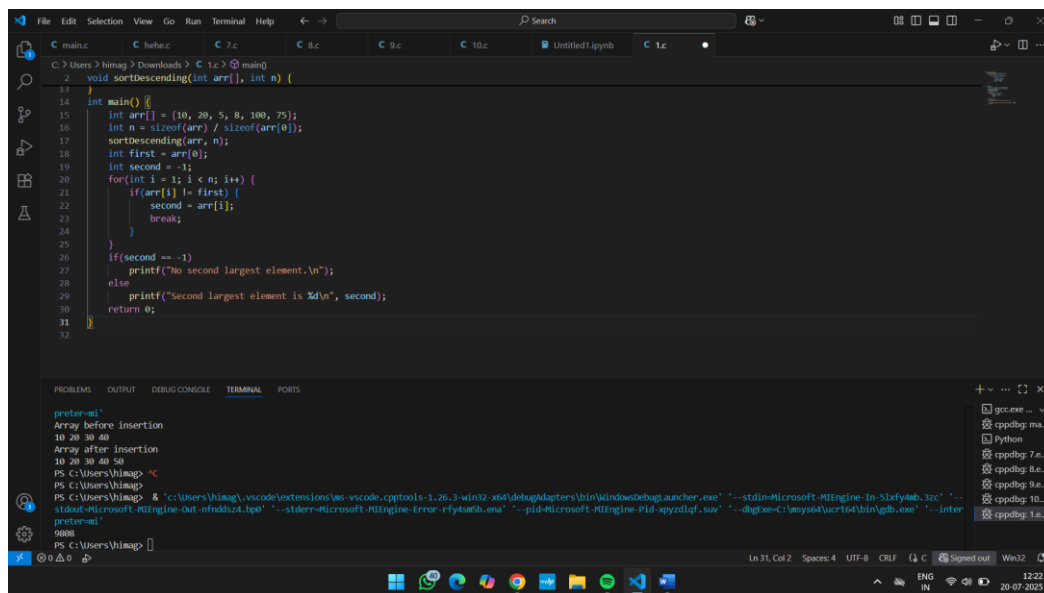
int main() {
    int arr[] = {10, 20, 5, 8, 100, 75};
    int n = sizeof(arr) / sizeof(arr[0]);
    sortDescending(arr, n);
    int first = arr[0];
    int second = -1;
    for(int i = 1; i < n; i++) {
        if(arr[i] != first) {
            second = arr[i];
            break;
        }
    }
    if(second == -1)
        printf("No second largest element.\n");
}
```

else

```
printf("Second largest element is %d\n", second);
```

```
return 0;
```

```
}
```



4. (Zeros)

```
#include <stdio.h>
```

```
void pushZerosToEnd(int *arr, int n) {
```

```
    int temp[n];
```

```
    int j = 0;
```

```
    for (int i = 0; i < n; i++) {
```

```
        if (arr[i] != 0)
```

```
            temp[j++] = arr[i];
```

```
    }
```

```
    while (j < n)
```

```
        temp[j++] = 0;
```

```
    for (int i = 0; i < n; i++)
```

```

        arr[i] = temp[i];
    }

int main() {

    int arr[] = {1, 2, 0, 4, 3, 0, 5, 0};

    int n = sizeof(arr) / sizeof(arr[0]);

    pushZerosToEnd(arr, n);

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

        printf("%d ", arr[i]);

    }

    return 0;
}

```

```

1  #include <stdio.h>
2
3  void pushZerosToEnd(int *arr, int n) {
4      int temp[n];
5      int j = 0;
6      for (int i = 0; i < n; i++) {
7          if (arr[i] != 0)
8              temp[j++] = arr[i];
9      }
10     while (j < n)
11         temp[j++] = 0;
12     for (int i = 0; i < n; i++)
13         arr[i] = temp[i];
14 }
15
16 int main() {
17     int arr[] = {1, 2, 0, 4, 3, 0, 5, 0};
18     int n = sizeof(arr) / sizeof(arr[0]);
19     pushZerosToEnd(arr, n);
20     for (int i = 0; i < n; i++) {
21         printf("%d ", arr[i]);
22     }
23     return 0;
24 }

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```

PS C:\Users\Himay>
PS C:\Users\Himay> & "C:\Users\Himay\vscode\extensions\ms-vscode.cpptools-1.26.3-win32-x64\debugadapters\bin\inlndwdebuglauncher.exe" --stdinMicrosoft-MinEngine-In-51x1yeh.3zc' --
stdoutMicrosoft-MinEngine-Out-nfndk2d.hpe' --stderrMicrosoft-MinEngine-Error-rfyasmb.enh' --pidMicrosoft-MinEngine-pid-ayndtql.suw' --dbgexeC:\wsysd\acrt64\bin\gdb.exe' --inter
preter=mi'
9000
PS C:\Users\Himay>
PS C:\Users\Himay> & "C:\Users\Himay\vscode\extensions\ms-vscode.cpptools-1.26.3-win32-x64\debugadapters\bin\inlndwdebuglauncher.exe" --stdinMicrosoft-MinEngine-In-51x1yeh.3zc' --
stdoutMicrosoft-MinEngine-Out-nfndk2d.hpe' --stderrMicrosoft-MinEngine-Error-rfyasmb.enh' --pidMicrosoft-MinEngine-pid-ayndtql.suw' --dbgexeC:\wsysd\acrt64\bin\gdb.exe' --inter
preter=mi'
1 2 4 3 5 0 0 0
PS C:\Users\Himay>

```

5. (Rotate array)

```

#include <stdio.h>

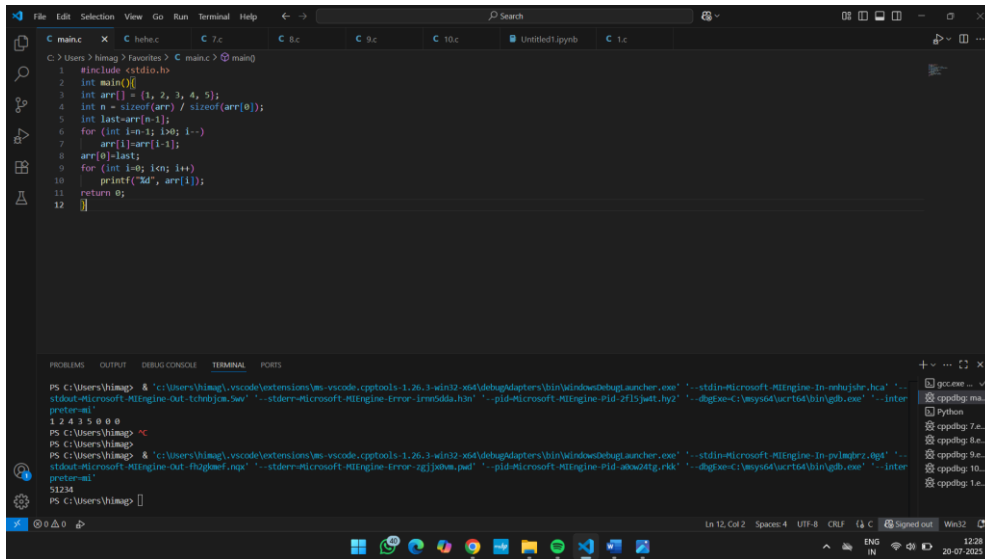
int main(){

int arr[] = {1, 2, 3, 4, 5};

int n = sizeof(arr) / sizeof(arr[0]);

```

```
int last=arr[n-1];
for (int i=n-1; i>0; i--)
    arr[i]=arr[i-1];
arr[0]=last;
for (int i=0; i<n; i++)
    printf("%d", arr[i]);
return 0;
}
```



6. (Check if array is sorted)

```
#include <stdio.h>

int main(){

int arr[]={1,2,3,4,5,6};

int n=sizeof(arr)/sizeof(arr[0]);

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

    if (arr[i-1]>arr[i]){

        printf("Not Sorted");

        break;

    }

}
```

```

    }

}

printf("Sorted");

return 0;

}

```

The screenshot shows a Visual Studio Code editor with a C program in a file named `hehe.c`. The program defines an array `arr` with values `{1, 2, 3, 4, 5, 6}` and sorts it using a simple loop. The terminal output shows the program running successfully and printing `SortedSortedSortedSortedSortedSorted`.

```

C:\Users\himag> cd C:\Users\himag\source\hehe.c
C:\Users\himag\source\hehe.c> gcc hehe.c -o hehe.exe
C:\Users\himag\source\hehe.c> .\hehe.exe
SortedSortedSortedSortedSortedSorted

```

7. (Reverse a string)

```

#include <stdio.h>

#include <string.h>

int main(){

    char str[100];

    printf("Enter a string : ");

    scanf("%s", str);

    int n=strlen(str);

    for (int i=0;i<n/2;i++){

        char temp=str[i];

        str[i]=str[n-1-i];

        str[n-i-1]=temp;
    }
}

```

```

}

printf("Reversed string : %s", str);

return 0;

}

```

```

1 #include <stdio.h>
2 #include <string.h>
3 int main()
4 {
5     char str[100];
6     printf("Enter a string : ");
7     scanf("%s", str);
8     int n=strlen(str);
9     for (int i=0;i<n/2;i++){
10         char temp=str[i];
11         str[i]=str[n-1-i];
12         str[n-1-i]=temp;
13     }
14     printf("Reversed string : %s", str);
15     return 0;
16 }

```

Terminal Output:

```

PS C:\Users\himag> g++ hehe.c -o hehe.exe
PS C:\Users\himag> .\hehe.exe
Enter a string : hello
Reversed string : olleh
PS C:\Users\himag>

```

8. (Palindrome)

```
#include <stdio.h>
```

```
#include <string.h>
```

```
int main(){
```

```
    char str[100];
```

```
    printf("Enter a string : ");
```

```
    scanf("%s",str);
```

```
    int n=strlen(str);
```

```
    int s=1;
```

```
    for (int i=0; i<n/2; i++){
```

```
        if (str[i]!=str[n-i-1]){
```

```
            s=0;
```

```
            break;
```



```

    }

}

if (s)

    printf("Palindrome");

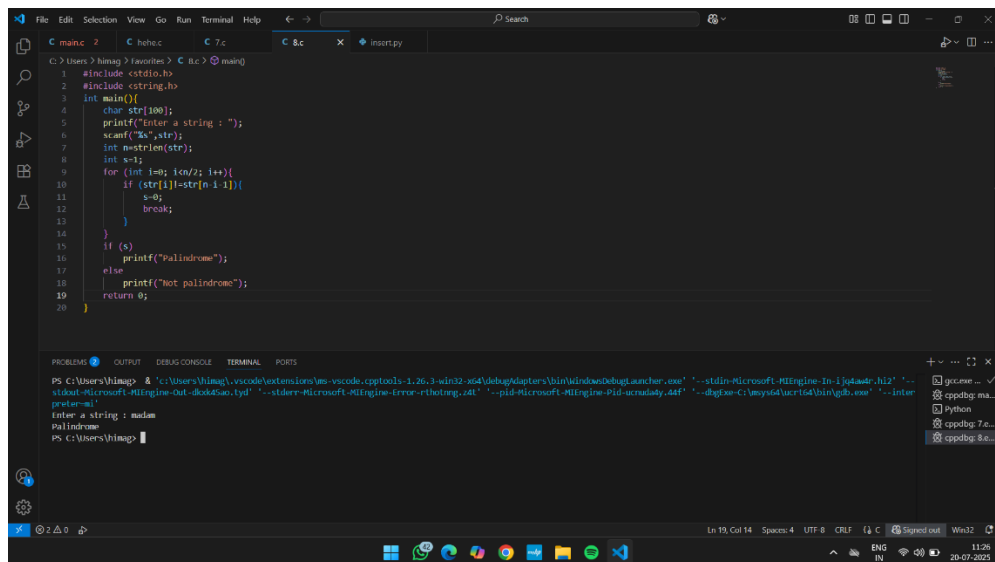
else

    printf("Not palindrome");

return 0;

}

```



9. (Frequency of Elements)

```
#include <stdio.h>
```

```
int main(){
```

```
    int arr[]={1,2,3,2,3,1,4,2,4};
```

```
    int n=sizeof(arr)/sizeof(arr[0]);
```

```
    int freq[n];
```

```
    int visited=-1;
```

```
    for (int i=0; i<n; i++){
```

```
        int count=1;
```

```

if (freq[i]==visited)

    continue;

for (int j=i+1; j<n; j++){

    if (arr[i]==arr[j]){

        count++;

        freq[j]=visited;

    }

}

freq[i]=count;

}

printf("Element | Frequency\n");

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

    if (freq[i]!= visited)

        printf(" %d | %d\n", arr[i],freq[i]);

}

return 0;

}

```

The screenshot shows a C++ program in Visual Studio Code. The code implements a frequency counting algorithm. It defines an array `arr` with values `{1, 2, 2, 2, 3, 1, 4, 2, 4}`. It uses a `freq` array to track the frequency of each element. The program prints the frequency of each element in the array.

```

1 #include <stdio.h>
2 int main()
3 {
4     int arr[]={1,2,2,2,3,1,4,2,4};
5     int n=size(arr)/sizeof(arr[0]);
6     int freq[n];
7     int visited=1;
8     for (int i=0; i<n; i++){
9         int count=1;
10        if (freq[i]==visited)
11            continue;
12        for (int j=i+1; j<n; j++){
13            if (arr[i]==arr[j]){
14                count++;
15                freq[j]=visited;
16            }
17        }
18        freq[i]=count;
19    }
20    printf("Element | frequency\n");
21    for (int i=0; i<n; i++){
22        if (freq[i]!= visited)
23            printf(" %d | %d\n", arr[i],freq[i]);
24    }
25 }

```

The output of the program is:

```

Element | frequency
1 | 2
2 | 3
3 | 1
4 | 2

```

10. (Reverse an array)

```
#include <stdio.h>
```

```
int main(){
```

```
    int a[]={1,2,3,4,5};
```

```
    int n = sizeof(a)/sizeof(a[0]);
```

```
    int temp;
```

```
    for (int i=0; i<n/2; i++){
```

```
        temp=a[i];
```

```
        a[i]=a[n-i-1];
```

```
        a[n-i-1]=temp;
```

```
    }
```

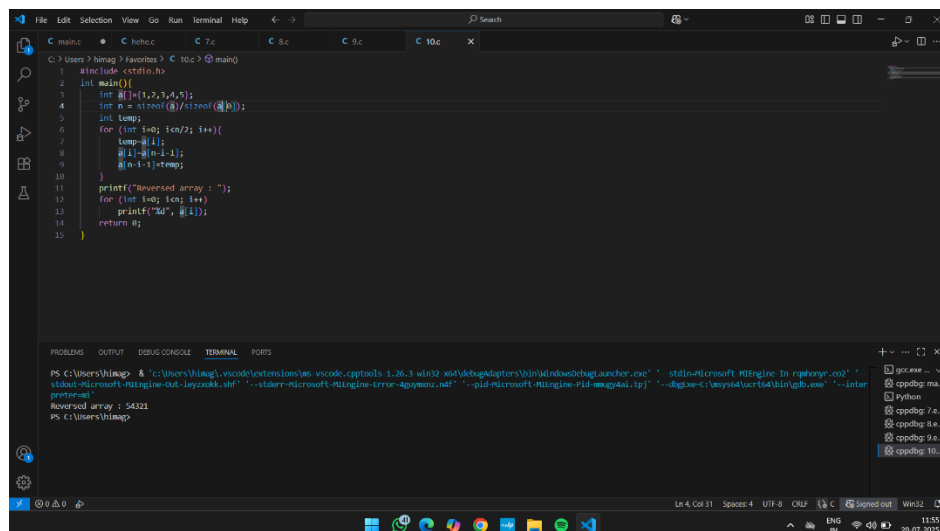
```
    printf("Reversed array : ");
```

```
    for (int i=0; i<n; i++)
```

```
        printf("%d", a[i]);
```

```
    return 0;
```

```
}
```



```
1 #include <stdio.h>
2 int main()
3 {
4     int a[]={1,2,3,4,5};
5     int n = sizeof(a)/sizeof(a[0]);
6     int temp;
7     for (int i=0; i<n/2; i++){
8         temp=a[i];
9         a[i]=a[n-i-1];
10        a[n-i-1]=temp;
11    }
12    printf("Reversed array : ");
13    for (int i=0; i<n; i++)
14        printf("%d", a[i]);
15    return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\himag> & "c:\Users\himag\vscode\extensions\ms-vscode.cpptools-1.26.1-win32-x64\vscode\bin\insiders\code.exe" -c "std::cout << "Reversed array : " << endl; for (int i=0; i<5; i++) { std::cout << a[i] << " "; } std::cout << endl; return 0; }
Reversed array : 54321
PS C:\Users\himag>
```