

1)

```
#include<stdio.h>

int main ( ) {
    int size;

    printf("enter the size of the array: ");
    scanf("%d",&size);

    int arr[size];

    printf("enter %d elements: \n",size);
    for(int i = 0;i<size;i++) {
        scanf("%d",&arr[i]);
    }

    printf("elements in the array are: ");
    for(int i = 0;i<size;i++) {
        printf("%d",arr[i]);
    }

    return 0;
}
```

Output

```
/tmp/ILkx4woAEs.o
enter the size of the array: 9
enter 9 elements:
1 4 6 8 2 55 23 76 87
elements in the array are: 1,4,6,8,2,55,23,76,87,|
```

2)

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

```
int main() {  
    int n;  
    printf("Enter the number of elements: ");  
    scanf("%d", &n);  
    int arr[n];  
    printf("Enter %d elements:\n", n);  
    for (int i = 0; i < n; i++) {  
        scanf("%d", &arr[i]);  
    }  
    printf("Elements in reverse order:\n");  
    for (int i = n - 1; i >= 0; i--) {  
        printf("%d, ", arr[i]);  
    }  
    return 0;  
}
```

```
/tmp/ILkx4woAEs.o
```

```
Enter the number of elements: 7
```

```
Enter 7 elements:
```

```
82 45 37 56 43 12 2
```

```
Elements in reverse order:
```

```
2 12 43 56 37 45 82 |
```

3)

```
#include <stdio.h>

int main() {

int array[ ] = {23, 9, 11, 14, 79};

int size = sizeof(array) / sizeof(array[0]);

int sum = 0;

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

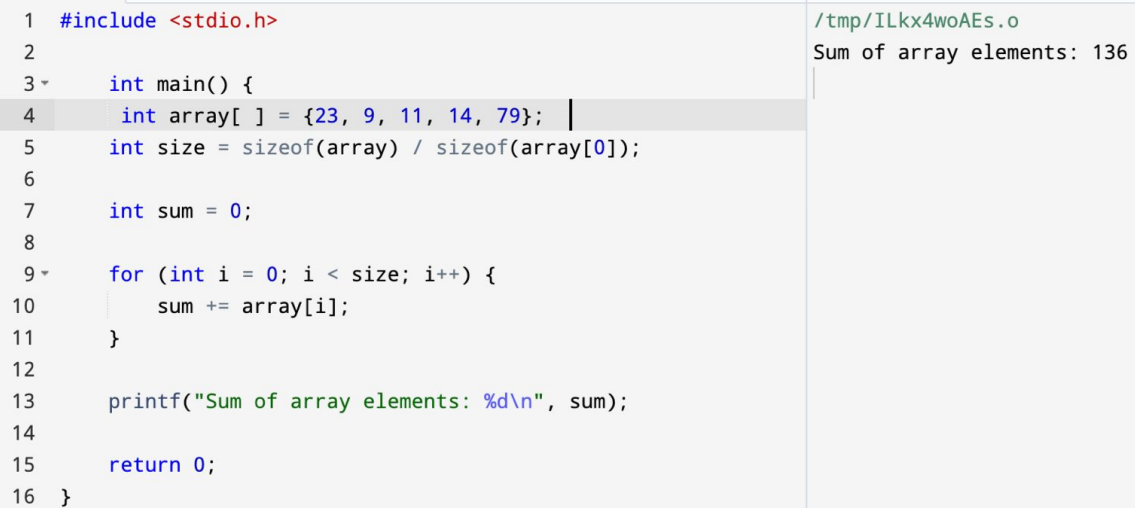
sum += array[i];

}

printf("Sum of array elements: %d\n", sum);

return 0;

}
```



The screenshot shows a code editor with a C program on the left and its output on the right. The code is identical to the one in the previous block. The output on the right shows the file path `/tmp/ILkx4woAEs.o` and the printed result `Sum of array elements: 136`.

```
1  #include <stdio.h>
2
3  int main() {
4  int array[ ] = {23, 9, 11, 14, 79};
5  int size = sizeof(array) / sizeof(array[0]);
6
7  int sum = 0;
8
9  for (int i = 0; i < size; i++) {
10     sum += array[i];
11 }
12
13 printf("Sum of array elements: %d\n", sum);
14
15 return 0;
16 }
```

/tmp/ILkx4woAEs.o
Sum of array elements: 136

4)

```
#include <stdio.h>

int main() {

    int size, i, j, count = 0;

    printf("Enter the size of the array: ");

    scanf("%d", &size);

    int arr[size];

    printf("Enter elements of the array:\n");

    for (i = 0; i < size; i++) {

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

    }

    for (i = 0; i < size; i++) {

        for (j = i + 1; j < size; j++) {

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

                count++;

                break;

            }

        }

    }

    printf("Total number of duplicate elements: %d\n", count);

    return 0;

}
```

main.c	Output
<pre>1 #include <stdio.h> 2 3- int main() { 4 int size, i, j, count = 0; 5 6 printf("Enter the size of the array: "); 7 scanf("%d", &size); 8 9 int arr[size]; 10 11 printf("Enter elements of the array:\n"); 12- for (i = 0; i < size; i++) { 13 scanf("%d", &arr[i]); 14 } 15 16- for (i = 0; i < size; i++) { 17- for (j = i + 1; j < size; j++) { 18- if (arr[i] == arr[j]) { 19 count++; 20 break; 21 } 22 } 23 } 24 }</pre>	<pre>/tmp/ILkx4woAEs.o Enter the size of the array: 8 Enter elements of the array: 1 3 56 79 2 77 1 1099 Total number of duplicate elements: 1</pre>

5)

```
#include <stdio.h>

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

int main() {
    int arr[] = {1, 2, 3, 4, 1, 2, 5, 6, 7, 8, 9, 4};
    int size = sizeof(arr) / sizeof(arr[0]);
    printf("Unique elements in the array: ");
    printUniqueElements(arr, size);
    return 0;
}
```

main.c	Output
<pre>1 #include <stdio.h> 2 3 void printUniqueElements(int arr[], int size) { 4 for (int i = 0; i < size; i++) { 5 int j; 6 for (j = 0; j < i; j++) { 7 if (arr[i] == arr[j]) { 8 break; 9 } 10 } 11 if (i == j) { 12 printf("%d ", arr[i]); 13 } 14 } 15 } 16 17 int main() { 18 int arr[] = {1, 68, 90, 87, 56, 2, 5, 5, 4, 4}; 19 int size = sizeof(arr) / sizeof(arr[0]); 20 21 printf("Unique elements in the array: "); 22 printUniqueElements(arr, size); 23 24 return 0; }</pre>	<pre>/tmp/ILkx4woAES.o Unique elements in the array: 1 68 90 87 56 2 5 4</pre>

6)

```
#include <stdio.h>

void insertElement(int array[ ], int size, int position, int element) {
    if (position < 0 || position > size) {
        printf("Invalid position. Please choose a position between 0 and %d.\n", size);
        return;
    }
    for (int i = size - 1; i >= position; i--) {
        array[i + 1] = array[i];
    }
    array[position] = element;
    size++;
    printf("Array after insertion: ");
    for (int i = 0; i < size; i++) {
        printf("%d ", array[i]);
    }
    printf("\n");
}

int main() {
    int size, position, element;
    printf("Enter the size of the array: ");
    scanf("%d", &size);
    int array[size];
    printf("Enter %d elements:\n", size);
    for (int i = 0; i < size; i++) {
        scanf("%d", &array[i]);
    }
    printf("Enter the element to insert: ");
    scanf("%d", &element);
    printf("Enter the position to insert the element: ");
```

```
scanf("%d", &position);

insertElement(array, size, position, element);

return 0;

}
```

main.c	Output
<pre>23 } 24 25 int main() { 26 int size, position, element; 27 28 printf("Enter the size of the array: "); 29 scanf("%d", &size); 30 31 int array[size]; 32 33 printf("Enter %d elements:\n", size); 34 for (int i = 0; i < size; i++) { 35 scanf("%d", &array[i]); 36 } 37 38 printf("Enter the element to insert: "); 39 scanf("%d", &element); 40 41 printf("Enter the position to insert the element: "); 42 scanf("%d", &position); 43 insertElement(array, size, position, element); 44 45 return 0; 46 }</pre>	<pre>/tmp/ILkx4woAEs.o Enter the size of the array: 4 Enter 4 elements: 7 92 37 90 Enter the element to insert: 8 Enter the position to insert the element: 3 Array after insertion: 7 92 37 8 90 </pre>

7)

```
#include <stdio.h>

void deleteElement(int arr[], int size, int index) {
    if (index < 0 || index >= size) {
        printf("Invalid index\n");
        return;
    }
    for (int i = index; i < size - 1; i++) {
        arr[i] = arr[i + 1];
    }
    size--;
    printf("Element at index %d deleted successfully\n", index);
}

int main() {
    int size, index;
    printf("Enter the size of the array: ");
    scanf("%d", &size);
    int arr[size];
    printf("Enter the elements of the array:\n");
    for (int i = 0; i < size; i++) {
        scanf("%d", &arr[i]);
    }
    printf("Enter the index to delete an element: ");
    scanf("%d", &index);
    deleteElement(arr, size, index);
    printf("Array after deletion:\n");
    for (int i = 0; i < size - 1; i++) {
        printf("%d ", arr[i]);
    }
    return 0;
```


}

```
19     int size, index;
20
21     printf("Enter the size of the array: ");
22     scanf("%d", &size);
23
24     int arr[size];
25
26     printf("Enter the elements of the array:\n");
27     for (int i = 0; i < size; i++) {
28         scanf("%d", &arr[i]);
29     }
30
31     printf("Enter the index to delete an element: ");
32     scanf("%d", &index);
33
34     deleteElement(arr, size, index);
35
36     printf("Array after deletion:\n");
37     for (int i = 0; i < size - 1; i++) {
38         printf("%d ", arr[i]);
39     }
40
41     return 0;
42 }
```

/tmp/9eMLicSBsp.o

Enter the size of the array: 14
Enter the elements of the array:
2 4 3 1 3 4 2 66 7 9 67 42 13 51
Enter the index to delete an element: 7
Element at index 7 deleted successfully
Array after deletion:
2 4 3 1 3 4 2 7 9 67 42 13 51

