

# ASSIGNMENT -02

## QNS 01

The screenshot displays a web browser window with the URL `programiz.com/c-programming/online-compiler/`. The browser's address bar and tabs are visible at the top. Below the browser window, the Programiz C Online Compiler interface is shown. It features a code editor on the left with a file named `main.c` and a 'Run' button. The code in `main.c` is as follows:

```
1 #include <stdio.h>
2
3 int main() {
4     int intArr[5] = {12, 56, 34, 78, 100};
5     int maxElement = intArr[0];
6
7     for(int i = 1; i < 5; i++)
8     {
9         if(intArr[i] > maxElement)
10        {
11            maxElement = intArr[i];
12        }
13    }
14
15    printf("The largest element in the array is %d\n", maxElement);
16    return 0;
17 }
18
```

To the right of the code editor is an 'Output' panel. It shows the execution path `/tmp/QZvaR1D4Ga.o` and the output text: `The largest element in the array is 100`. At the bottom of the browser window, the Windows taskbar is visible, showing the system clock as 21:18 on 05-04-2023.

## QNS 02

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main.c
Run

```

12 int max2 = arr[1];
13 if (max2 > max1) {
14     int temp = max1;
15     max1 = max2;
16     max2 = temp;
17 }
18 for (int i = 2; i < n; i++) {
19     if (arr[i] > max1) {
20         max2 = max1;
21         max1 = arr[i];
22     } else if (arr[i] > max2) {
23         max2 = arr[i];
24     }
25 }
26 printf("The largest two elements in the array are %d and %d\n",
27     max1, max2);
28 return 0;

```

Output
Clear

```

/tmp/QZvaR1D4Ga.o
Enter the number of elements in the array: 5
Enter the elements of the array:
2,4,5,8,7
The largest two elements in the array are 2 and 0

```

Waiting for pagead2.googleadsyndication.com...

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## QNS 03

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main.c
Run

```

1 #include <stdio.h>
2
3 #define MAX_SIZE 100
4
5 int main() {
6     int arr[MAX_SIZE], n, i, largest, second_largest, smallest,
7         second_smallest;
8
9     printf("Enter the size of the array (max %d): ", MAX_SIZE);
10    scanf("%d", &n);
11
12    printf("Enter %d elements: ", n);
13    for (i = 0; i < n; i++) {
14        scanf("%d", &arr[i]);
15    }
16
17    largest = arr[0];
18    for (i = 1; i < n; i++) {

```

Output
Clear

```

/tmp/QZvaR1D4Ga.o
Enter the size of the array (max 100): |

```

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## QNS 04

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**main.c** [Run](#) [Clear](#)

```

4 int arr[] = {10,15,90,200,110};
5 int n = sizeof(arr) / sizeof(arr[0]);
6
7 int max_diff = arr[1] - arr[0];
8 int min_element = arr[0];
9
10 for (int i = 1; i < n; i++) {
11     if (arr[i] - min_element > max_diff) {
12         max_diff = arr[i] - min_element;
13     }
14     if (arr[i] < min_element) {
15         min_element = arr[i];
16     }
17 }
18
19 printf("Maximum difference is %d\n", max_diff);
20 return 0;
21 }

```

Output

```

/tmp/QZvaR1D4Ga.o
Maximum difference is 190

```

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## QNS 05

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```

1 #include <stdio.h>
2
3 int main() {
4     int arr[5] = {1,2,4,5,4,2,7,5};
5     int n = sizeof(arr) / sizeof(arr[0]);
6     int i, j, k;
7
8     printf("Original Array: ");
9     for (i = 0; i < n; i++) {
10         printf("%d ", arr[i]);
11     }
12     printf("\n");
13
14     for (i = 0; i < n; i++) {
15         for (j = i + 1; j < n; j++) {
16             if (arr[j] == arr[i]) {
17                 for (k = j; k < n; k++) {
18                     arr[k] = arr[k + 1];

```

Output

```

/tmp/QZvaR1D4Ga.o
Original Array: 1 2 4 5 4
Array after removing duplicates: 1 2 4 5

```

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main.c

```

1 #include <stdio.h>
2
3 int main() {
4     int arr[] = {2, 5, 6, 8, 1, 3, 9};
5     int n = sizeof(arr) / sizeof(arr[0]);
6     int even_arr[n], odd_arr[n];
7     int even_index = 0, odd_index = 0;
8
9     printf("Original Array: ");
10    for (int i = 0; i < n; i++) {
11        printf("%d ", arr[i]);
12    }
13    printf("\n");
14
15    for (int i = 0; i < n; i++) {
16        if (arr[i] % 2 == 0) {
17            even_arr[even_index] = arr[i];
18            even_index++;

```

Output

```

/tmp/QZvaR1D4Ga.o
Original Array: 2 5 6 8 1 3 9
Even Array: 2 6 8
Odd Array: 5 1 3 9

```

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main.c

```

1 #include <stdio.h>
2
3 int main() {
4     int arr[] = {1, 2, 3, 4, 5};
5     int n = sizeof(arr) / sizeof(arr[0]);
6
7     printf("Original Array: ");
8     for (int i = 0; i < n; i++) {
9         printf("%d ", arr[i]);
10    }
11    printf("\n");
12
13    for (int i = 0; i < n / 2; i++) {
14        int temp = arr[i];
15        arr[i] = arr[n - 1 - i];
16        arr[n - 1 - i] = temp;
17    }
18

```

Output

```

/tmp/QZvaR1D4Ga.o
Original Array: 1 2 3 4 5
Reversed Array: 5 4 3 2 1

```

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main.c

```

1 #include <stdio.h>
2
3 int main() {
4     int arr[] = {5,2,7,7,5,5,2};
5     int n = sizeof(arr) / sizeof(arr[0]);
6     int freq[n];
7
8     for (int i = 0; i < n; i++) {
9         freq[i] = -1;
10    }
11
12    for (int i = 0; i < n; i++) {
13        int count = 1;
14        for (int j = i + 1; j < n; j++) {
15            if (arr[i] == arr[j]) {
16                count++;
17                freq[j] = 0;
18            }
19        }
20    }
21
22    for (int i = 0; i < n; i++) {
23        if (freq[i] != -1) {
24            printf("%d %d\n", arr[i], freq[i]);
25        }
26    }
27 }
```

Output

```

/tmp/QZvaR1D4Ga.o
Element Frequency
5 3
2 2
7 2
```

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main.c

```

1 #include <stdio.h>
2
3 int main() {
4     int arr[] = {234,780,130,56,90};
5     int n = sizeof(arr) / sizeof(arr[0]);
6
7
8     for (int i = 0; i < n - 1; i++) {
9         int max_index = i;
10        for (int j = i + 1; j < n; j++) {
11            if (arr[j] > arr[max_index]) {
12                max_index = j;
13            }
14        }
15        int temp = arr[i];
16        arr[i] = arr[max_index];
17        arr[max_index] = temp;
18    }
19
20    for (int i = 0; i < n; i++) {
21        printf("%d ", arr[i]);
22    }
23 }
```

Output

```

/tmp/QZvaR1D4Ga.o
Sorted array in descending order: 780 234 130 90 56
```

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## QNS 10

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main.c

28

}

29

}

30

31

return -1;

32

}

33

34

int main() {

35

int arr[] = {1,3,5,8,9,2,6,7,6,8,9};

36

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

37

38

int min\_jumps = minJumps(arr, n);

39

40

if (min\_jumps != -1) {

41

printf("Minimum number of jumps required to reach the end of  
the array: %d\n", min\_jumps);

42

} else {

43

printf("End of the array is not reachable.\n");

44

}

Run

Output

Clear

/tmp/QZvaR1D4Ga.o

Minimum number of jumps required to reach the end of the array: 3

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