

1. Write a C program to generate first 15 Fibonacci Numbers (Use arrays)

Expected Output

The First 15 Fibonacci Numbers are :

0
1
1
2
3
5
8
13
21
34
55
89
144
233
377

```
#include <stdio.h>
int main()
{
    int n;
    printf("Enter length of fibonacci series: ");
    scanf("%d", &n);
    int array[n];
    if (n >= 2)
    {
        array[0] = 0;
        array[1] = 1;
        for (int i = 2; i < n; i++)
        {
            array[i] = array[i - 2] + array[i - 1];
        }
    }
    else
    {
        array[0] = 0;
    }
    printf("Fibonacci Series of length %d is :\n", n);
}
```

```
    for (int i = 0; i < n; i++)  
    {  
        printf("%d\n", array[i]);  
    }  
    printf("\n\n");  
    return 0;  
}
```

```
shalu@shalu-VirtualBox:~/C_Program/Assignment$ gcc -c array.c  
shalu@shalu-VirtualBox:~/C_Program/Assignment$ gcc -o array array.o  
shalu@shalu-VirtualBox:~/C_Program/Assignment$ ./array  
Enter length of fibonacci series: 15  
Fibonacci Series of length 15 is :  
0  
1  
1  
2  
3  
5  
8  
13  
21  
34  
55  
89  
144  
233  
377
```

2. Write a C program to generate first 50 Prime Numbers (Use arrays)

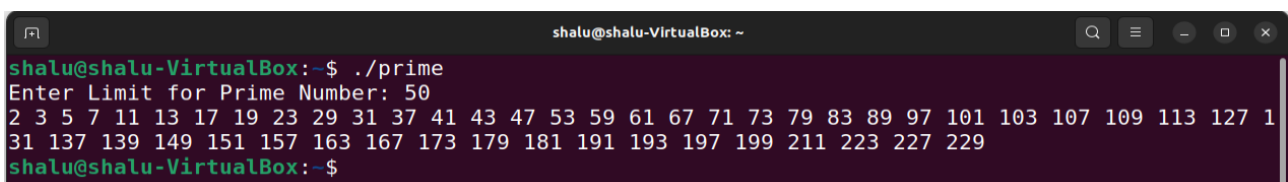
Expected Output

The first 15 Prime Numbers are: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47

```
#include <stdio.h>
int main()
{
    int size;
    printf("Enter Limit for Prime Number: ");
    scanf("%d", &size);

    int arrayOfPrime[size];

    int i = 2;
    arrayOfPrime[0] = 2;
    arrayOfPrime[1] = 3;
    int number = 4;
    while (i != size)
    {
        int prime = 0;
        for (int j = 2; j <= number / 2; j++)
        {
            if (number % j == 0)
            {
                prime = 1;
            }
        }
        if (prime == 0)
        {
            arrayOfPrime[i] = number;
            i = i + 1;
        }
        number = number + 1;
    }
    for (int k = 0; k < size; k++)
    {
        printf("%d ", arrayOfPrime[k]);
    }
    printf("\n\n");
    return 0;
}
```

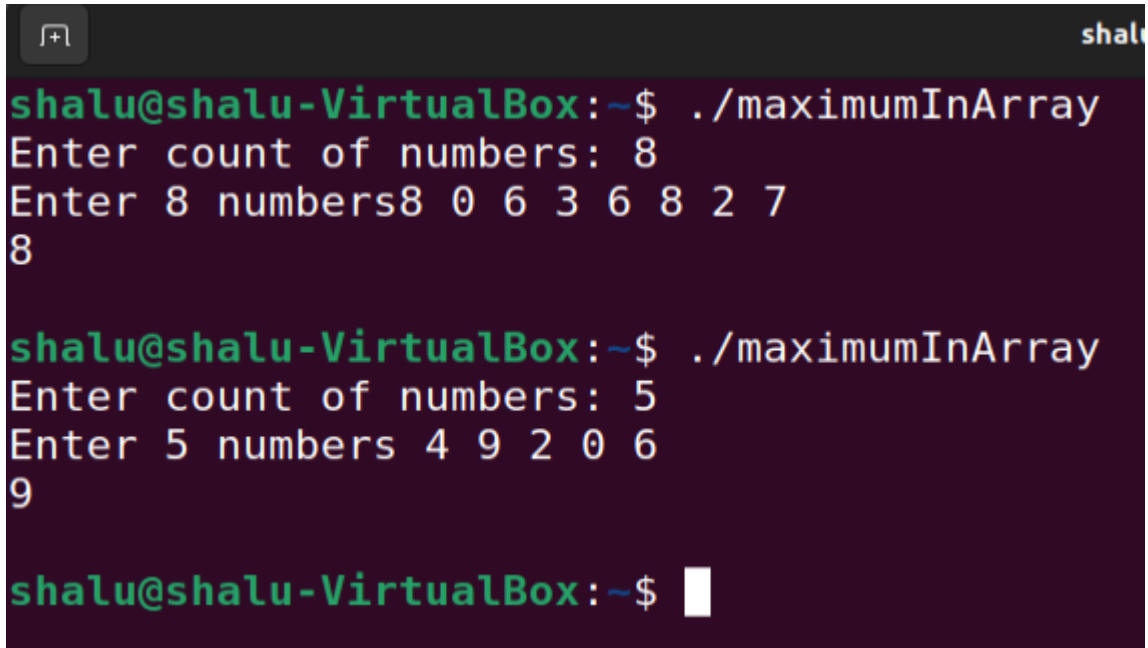


The screenshot shows a terminal window titled 'shalu@shalu-VirtualBox: ~'. The user enters the command './prime'. The program prompts 'Enter Limit for Prime Number: 50'. It then displays the first 50 prime numbers: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97 101 103 107 109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197 199 211 223 227 229. The prompt 'shalu@shalu-VirtualBox:~\$' is shown at the bottom.

3. Write a C Program to find the Maximum Value in an Array. Take inputs from the user.

```
#include <stdio.h>
int main()
{
    int count;
    printf("Enter count of numbers: ");
    scanf("%d", &count);
    int numbers[count];
    printf("Enter %d numbers", count);

    for (int i = 0; i < count; i++)
    {
        scanf("%d", &numbers[i]);
    }
    int max = -32768;
    ///// Find Maximum
    for (int i = 0; i < count; i++)
    {
        for (int j = i + 1; j < count; j++)
        {
            if (numbers[i] > numbers[j])
            {
                if (numbers[i] > max)
                    max = numbers[i];
            }
            else
            {
                if (numbers[j] > max)
                    max = numbers[j];
            }
        }
    }
    printf("%d\n\n", max);
    return 0;
}
```



```
shalu@shalu-VirtualBox:~$ ./maximumInArray
Enter count of numbers: 8
Enter 8 numbers8 0 6 3 6 8 2 7
8

shalu@shalu-VirtualBox:~$ ./maximumInArray
Enter count of numbers: 5
Enter 5 numbers 4 9 2 0 6
9

shalu@shalu-VirtualBox:~$
```

4. Write a C Program to find the Minimum Value in an Array by using functions. Take inputs from the user.

```
#include <stdio.h>
int count;
int findMinimum(int number[count])
{
    int min = 32765;
    for (int i = 0; i < count; i++)
    {
        for (int j = i + 1; j < count; j++)
        {
            if (number[i] < number[j])
            {
                if (number[i] < min)
                    min = number[i];
            }
            else
            {
                if (number[j] < min)
                    min = number[j];
            }
        }
    }

    return min;
}

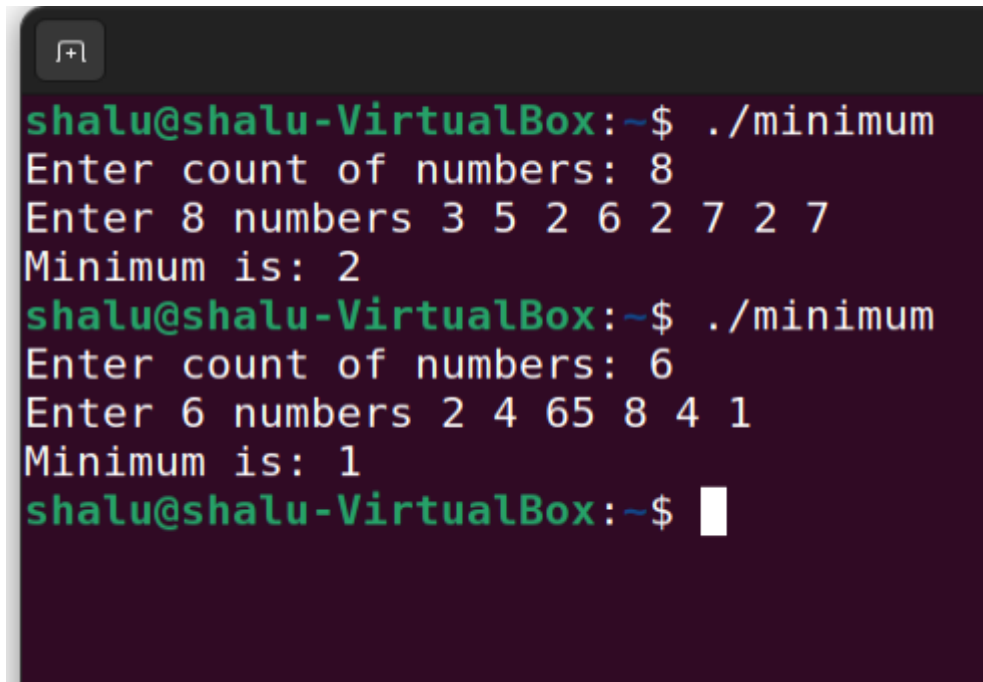
int main()
{
    printf("Enter count of numbers: ");
    scanf("%d", &count);
    int numbers[count];
    printf("Enter %d numbers", count);

    for (int i = 0; i < count; i++)
    {
        scanf("%d", &numbers[i]);
    }

    int min = findMinimum(numbers);

    printf("Minimum is: %d\n\n", min);

    return 0;
}
```



```
shalu@shalu-VirtualBox:~$ ./minimum
Enter count of numbers: 8
Enter 8 numbers 3 5 2 6 2 7 2 7
Minimum is: 2
shalu@shalu-VirtualBox:~$ ./minimum
Enter count of numbers: 6
Enter 6 numbers 2 4 65 8 4 1
Minimum is: 1
shalu@shalu-VirtualBox:~$
```