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Assignment 5: Arrays

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

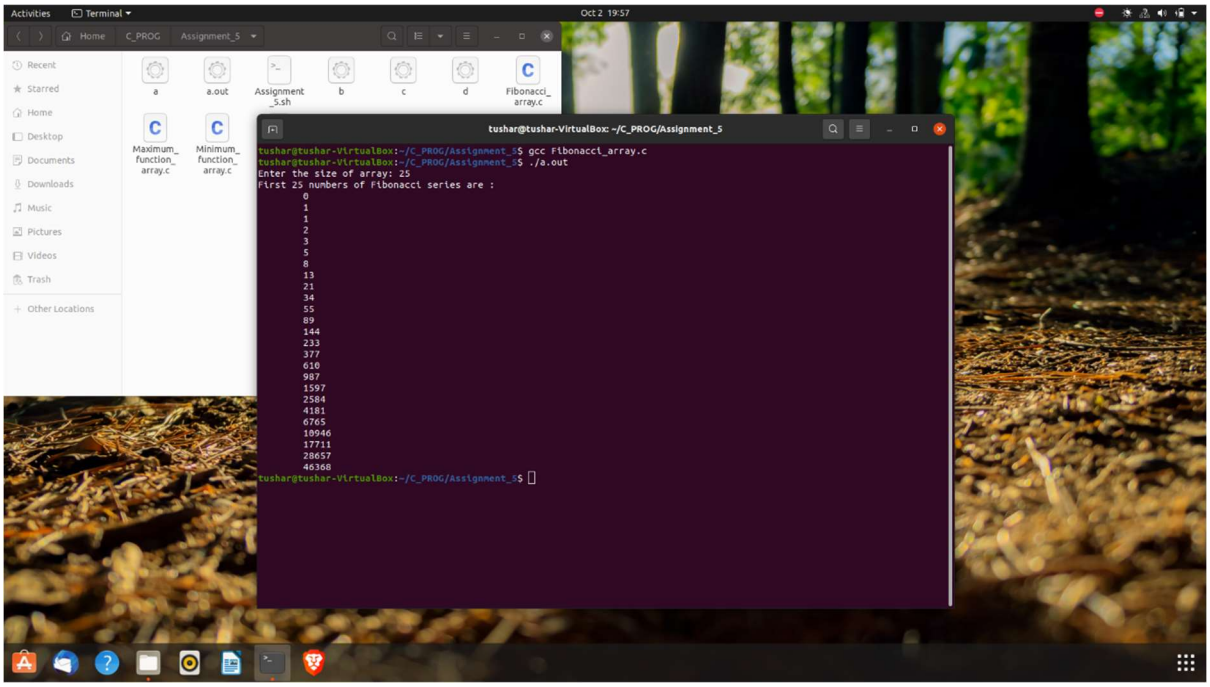
377

Code:

```
#include<stdio.h>
int main () {
   int a[100],n;
```

```
    printf("Enter the size of array: ");
    scanf("%d",&n);
    a[0] = 0;
    a[1] = 1;
    for (int i = 2; i < n; i++)
    {
        a[i] = a[i-1] + a[i-2];
    }
    printf("First %d numbers of Fibonacci series are :\n",n);
    for (int i = 0; i < n; i++)
    {
        printf("\t%d\n",a[i]);
    }
    return 0;
}
```

Output:



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

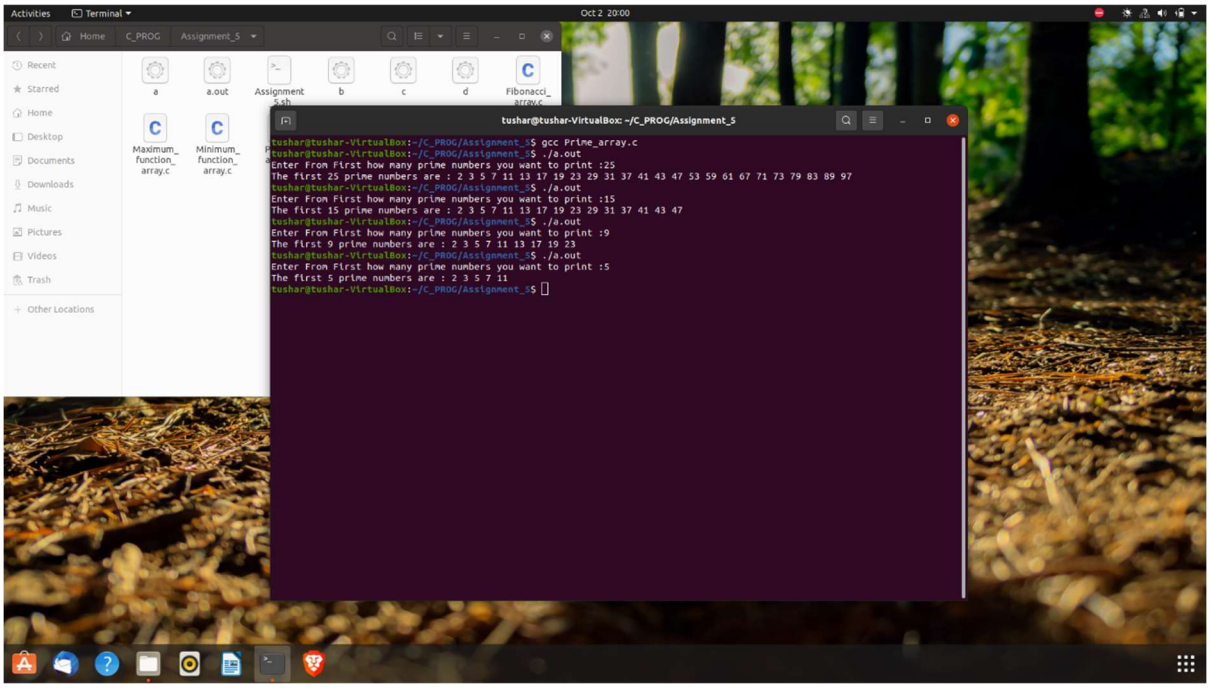
Code:

```
#include<stdio.h>
int prime(int);
int prime(int a)
{
        int i, c = 0;
  if(a==0||a==1)
  {
    c = 1;
  }
        for(i=2;i<a;i++)
        {
                if(a%i==0)
                {
                        c = 1;
                }
        }
        if(c==0)
  {
    return c;
  }
}

int main()
{
  int size;
  printf("Enter From First how many prime numbers you want to print :");
  scanf("%d",&size);
  int a[size], num=0,i=0;
```

```
    while(i < size)
    {
        int temp = prime(num);
        if (temp==0)
        {
            a[i]=num;
            i++;
        }
        num++;
    }
    printf("The first %d prime numbers are : ",i);
    for (int i = 0; i < size; i++)
    {
        printf("%d ",a[i]);
    }
    printf("\n");
    return 0;
}
```

Output:



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

Code:

```
#include<stdio.h>
int main()
{
   int size;
   printf("Enter the size of array: ");
   scanf("%d",&size);
   int a[size];
   printf("Enter the array elements: ");
   for (int i = 0; i < size; i++)
   {

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

   }
   int largest = a[0];
   for (int i = 0; i < size; i++)
   {

      if (largest<a[i])
      {
         largest = a[i];

      }
   }

   printf("Largest element in the array is %d.\n",largest);
   return 0;
}
```

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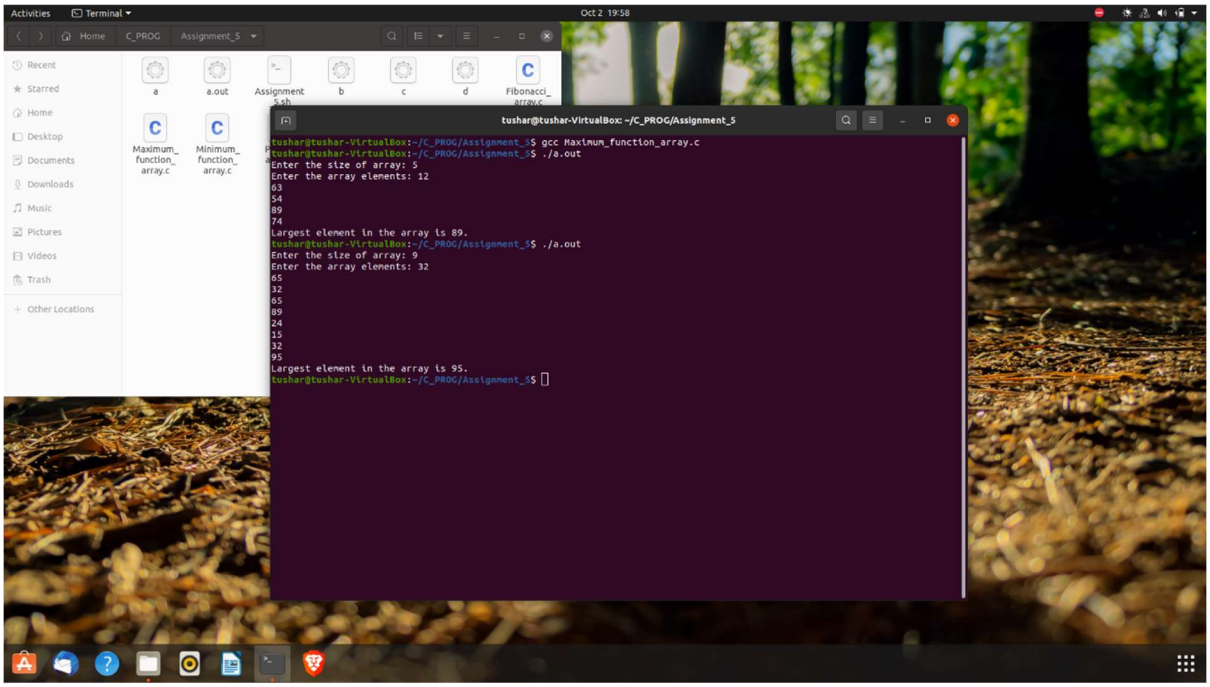
Output:



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

Code:

```
#include<stdio.h>
int min(int arr[], int);
int main()
{
   int size;
   int a[50];
   printf("Enter the size of array: ");
   scanf("%d",&size);
   printf("Enter the array elements: ");
   for (int i = 0; i < size; i++)
   {
      scanf("%d",&a[i]);
   }
   int minumum = min(a,size);
   printf("The Smallest element of the array is %d. \n",minumum);
   return 0;
}
int min(int arr[], int size){

   int minimum = arr[0];
   for (int i = 0; i < size; i++)
   {
      if (minimum > arr[i])
      {
         minimum = arr[i];
      }
   }
   return minimum;
}
```

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Output: