Write a Program to Output a string to Console.

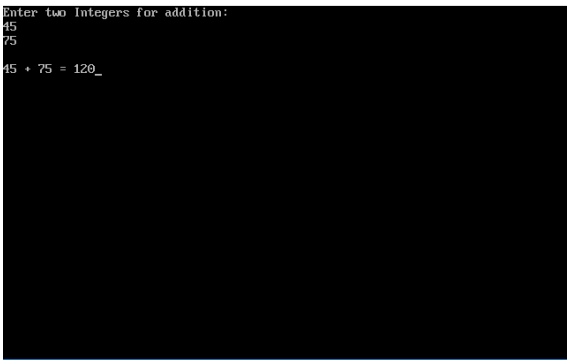
```
#include <stdio.h>
#include <conio.h>

void main()

{
   clrscr();

   printf("Hello World.");

   getch();

}
```

Output:

Program to add two Integers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int a, b, sum;
   clrscr();

   printf("Enter two Integers for addition: \n");
   scanf("%d %d", &a , &b);

   sum = a+b;

   printf("\n%d + %d = %d",a ,b ,sum);
   getch();
}
```

Output:



Program to Check whether a Year is Leap Year or Not.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int year;
   clrscr();

   printf("Enter the year: ");
   scanf("%d" ,&year);

   if ( year%4==0 )
           {
              printf("\n%d is a Leap year." ,year);
           }
      else
           {
              printf("\n%d is not a Leap year." ,year);
           }
   getch();
}
```

Output:

Program to find average of two numbers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a, b;
    float avg;
    clrscr();

    printf("Enter first number :");
    scanf("%d",&a);

    printf("Enter second number :");
    scanf("%d",&b);

    avg= (float)(a+b)/2;

    printf("\nAverage of %d and %d is = %f",a,b,avg);
 getch();
}
```

Output:

Program to find sum of first N Numbers.

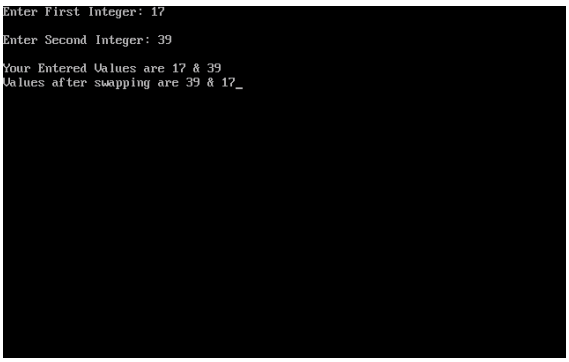
```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, num, sum = 0;
    clrscr();

    printf("Enter a number to find sum upto: ");
    scanf ("%d", &num);

          for (i = 1; i <= num; i++)
            {
              sum += i;
            }

    printf ("Sum of first %d natural numbers = %d\n", num, sum);
    getch();
}
```

Output:

Program to swap Values stored in two variables.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int val1, val2, temp=0;
   clrscr();
   printf("Enter First Integer: ");
   scanf("%d" ,&val1);
   printf("\nEnter Second Integer: ");
   scanf("%d" ,&val2);
   printf("\nYour Entered Values are %d & %d" ,val1 ,val2);
      {
         temp=val1;
         val1=val2;
         val2=temp;
      }
   printf("\nValues after swapping are %d & %d" ,val1 ,val2);
   getch();
}
```

Output:



Program to find ASCII value of given character.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   char c;
   clrscr();

   printf("Enter a character to find its ASCII value: ");
   scanf("%c",&c);

   printf("\nASCII value of %c is %d" ,c ,c);
   getch();
}
```

Output:

Program to find Area and Perimeter of a Circle.

```
#include <stdio.h>
#include <conio.h>
#define PI 3.14
void main()
{
    float rad,area, perm;
    clrscr();

    printf(”Enter radius of circle: ”);
    scanf(”%f”,&rad);

    area=PI*rad*rad;
    perm=2*PI*rad;

 printf(”Area of circle: %f \nPerimeter of circle: %f” ,area ,perm);
 getch();
}
```

Output:

Program to find whether an Integer is even or odd.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int v=0, rem;
   clrscr();

   printf("Enter an Integer: ");
   scanf("%d", &v);

   rem=v%2;

   if (rem == 0)
           printf("\n%d is an even Integer\n",v);
   else
           printf("\n%d is an odd Integer\n",v);
   getch();
}
```

Output:

Program to find all Possible Factors of a given positive integer.

```
#include <stdio.h>
#include <conio.h>
void main()
{
  int number, i;
   clrscr();

    printf("Enter a positive integer: ");
    scanf("%d",&number);

    printf("Factors of %d are: ", number);

    for(i=1; i <= number; ++i)
    {
        if (number%i == 0)
        {
          printf(" %d ",i);
        }
    }
    getch();
}
```

Output:

Program to get Fibonacci series up to Nth term.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int i, n, t1 = 0, t2 = 1, nextTerm;
    clrscr();

    printf("Enter the number of terms: ");
    scanf("%d", &n);

    printf("Fibonacci Series: ");

    for (i = 1; i <= n; ++i)
    {
        printf("\n%d", t1);
        nextTerm = t1 + t2;
        t1 = t2;
        t2 = nextTerm;
    }
    getch();
}
```

Output:

Program to find Factorial of a given positive integer.

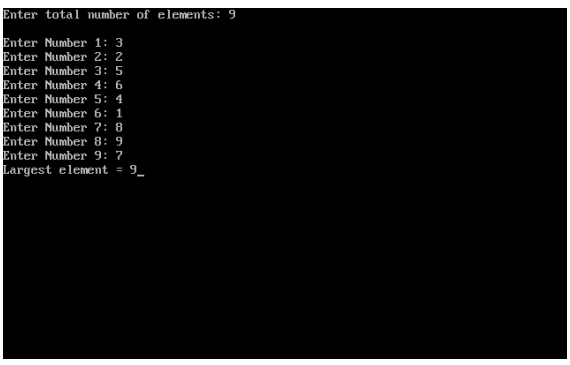
```
#include <stdio.h>
#include <conio.h>
void main()
{
   int i, n;
   unsigned long long fact=1;
   clrscr();

   printf("Enter an Positive Integer to find Factorial of: ");
   scanf("%d" ,&n);

   if ( n<0 )
      printf("\nError! You Entered a Negative Value");

   else
   {
      for (i = 1; i <= n; ++i)
      {
        fact *= i;
      }
      printf("\nFactorial of %d is %llu" ,n ,fact);
   }
   getch();
}
```

Output:

Program to find the largest integer in an array.

```
#include <stdio.h>
#include <conio.h>
void main()
{
 int i, n;
    int arr[999], temp;
    clrscr();
    printf("Enter total number of elements(1 to 100): ");
    scanf("%d", &n);
    printf("\n");
    for(i = 0; i < n; ++i)
    {
       printf("Enter Number %d: ", i+1);
       scanf("%d", &arr[i]);
    }
    for(i = 1; i < n; ++i)
    {
       if(arr[0] < arr[i])
       {
           temp = arr[0];
           arr[0] = arr[i];
           arr[i] = temp;
       }
    }
    printf("Largest element = %d", arr[0]);
   getch();
}
```

Output:



Program to find average of given Integers in an Array.

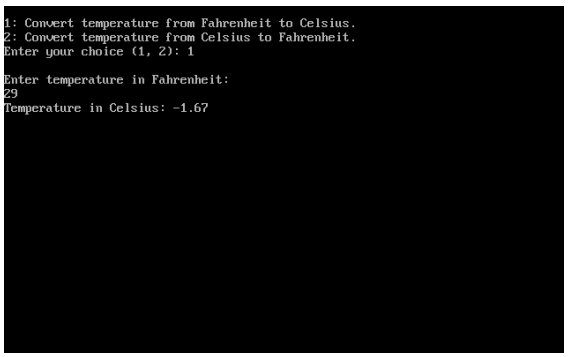
```
#include <stdio.h>
#include <conio.h>
void main()
{
 int marks[10], i, n;
 float sum = 0, average;
   clrscr();

     printf("Enter No. of Integers to find Average from: ");
     scanf("%d", &n);

     for(i=0; i<n; ++i)
     {
          printf("Enter number%d: ",i+1);
          scanf("%d", &marks[i]);
          sum += marks[i];
     }
     average = sum/n;

     printf("Average = %f", average);
   getch();
}
```

Output:

Program to Convert Celsius to Fahrenheit & Vice Versa.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    float fh,cl;
    int choice;
    clrscr();

    printf("\n1: Convert temperature from Fahrenheit to Celsius.");
    printf("\n2: Convert temperature from Celsius to Fahrenheit.");
    printf("\nEnter your choice (1, 2): ");

    scanf("%d",&choice);
    if(choice ==1){
        printf("\nEnter temperature in Fahrenheit: ");
        scanf("%f",&fh);
        cl= (fh - 32) / 1.8;
        printf("Temperature in Celsius: %.2f",cl);
    }
    else if(choice==2){
        printf("\nEnter temperature in Celsius: ");
        scanf("%f",&cl);
        fh= (cl*1.8)+32;
        printf("Temperature in Fahrenheit: %.2f",fh);
    }
    else{
        printf("\nInvalid Choice !!!");
    }
 getch();
}
```

Output:



Program to find LCM of two Integers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
  int n1, n2, minMultiple;
  clrscr();

    printf(”Enter two positive integers: ”);
    scanf(”%d %d”, &n1, &n2);

   minMultiple = (n1>n2) ? n1 : n2;

    while(1)
    {
        if( minMultiple%n1==0 && minMultiple%n2==0 )
        {
            printf(”The LCM of %d and %d is %d.”, n1, n2,minMultiple);
            break;
        }
        ++minMultiple;
    }
    getch();
}
```

Output:

Program to find HCF of two Integers.

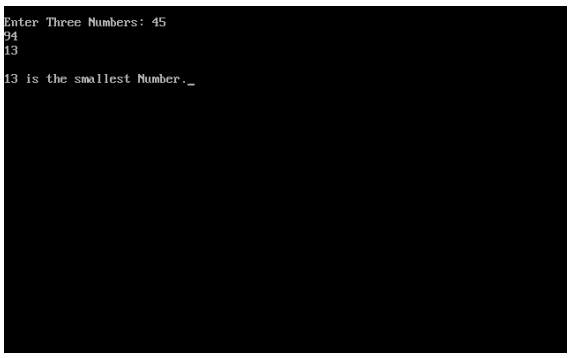
```
#include <stdio.h>
#include <conio.h>
int hcf(int, int);
int main()
{
    int a, b, result;
    clrscr();

    printf("Enter the two numbers to find their HCF: ");
    scanf("%d%d", &a, &b);

    result = hcf(a, b);
    printf("The HCF of %d and %d is %d.\n", a, b, result);
   getch();
}
int hcf(int a, int b)
{
    while (a != b)
    {
        if (a > b)
        {
            a = a - b;
        }
        else
        {
            b = b - a;
        }
    }
    return a;
}
```

Output:

Program to find the Smallest No. out of three numbers.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int n1, n2, n3;
   clrscr();

   printf("\nEnter Three Numbers: ");
   scanf("%d %d %d" ,&n1 ,&n2 ,&n3);

   if ( n1 <= n2 && n1 <= n3 )
   {
      printf("\n%d is the smallest Number.",n1);
   }
   else if ( n2 <= n1 && n2 <=n3 )
   {
      printf("\n%d is the smallest Number.",n2);
   }
   else
   {
      printf("\n%d is the smallest Number.",n3);
   }
   getch();
}
```

Output:



Program to find the exponential value of a Number.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int base, exponent;
    long long result = 1;
    clrscr();

    printf(”Enter a base number: ”);
    scanf(”%d”, &base);

    printf(”Enter an exponent: ”);
    scanf(”%d”, &exponent);

    while (exponent != 0)
    {
        result *= base;
        --exponent;
    }

    printf(”Answer = %lld”, result);
   getch();
}
```

Output:

Program to find the Quotient & Remainder of Division.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int divn, divs, quo, rem;
   clrscr();

   printf("Enter Dividend: ");
   scanf("%d" ,&divn);

   printf("\nEnter Divisor: ");
   scanf("%d" ,&divs);
      {
         quo=divn/divs;
         rem=divn%divs;
      }

   printf("\nQuotient: %d" ,quo);
   printf("\nRemainder: %d" ,rem);
   getch();
}
```

Output:

Program to check whether a given no. is prime number or not.

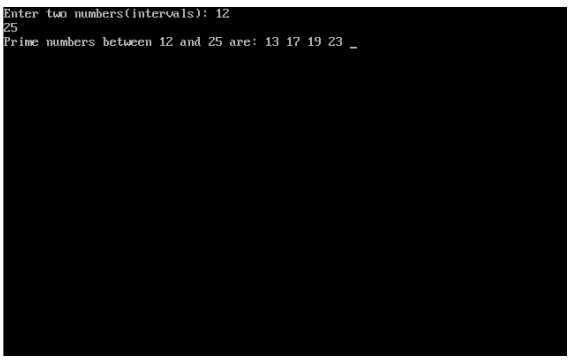
```
#include <stdio.h>
#include <conio.h>
void main()
{
 int n, i, flag = 0;
    clrscr();

    printf("Enter a positive integer: ");
    scanf("%d", &n);
    for(i = 2; i <= n/2; ++i)
    {
        if(n%i == 0)
        {
            flag = 1;
            break;
        }
    }
    if (n == 1)
    {
      printf("1 is neither a prime nor a composite number.");
    }
    else
    {
        if (flag == 0)
          printf("%d is a prime number.", n);
        else
          printf("%d is not a prime number.", n);
    }
   getch();
}
```

Output:

Program to find all prime no's in a given range.

```
#include <stdio.h>
#include <conio.h>
void main()
{
   int low, high, i, flag;
   clrscr();
    printf("Enter two numbers(intervals): ");
    scanf("%d %d", &low, &high);
    printf("Prime numbers between %d and %d are: ", low, high);
    while (low < high)
    {
        flag = 0;
        for(i = 2; i <= low/2; ++i)
        {
            if(low % i == 0)
            {
                flag = 1;
                break;
            }
        }
        if (flag == 0)
            printf("%d ", low);
        ++low;
    }
    getch();
}
```

Output:



Program to show working of a simple calculator.

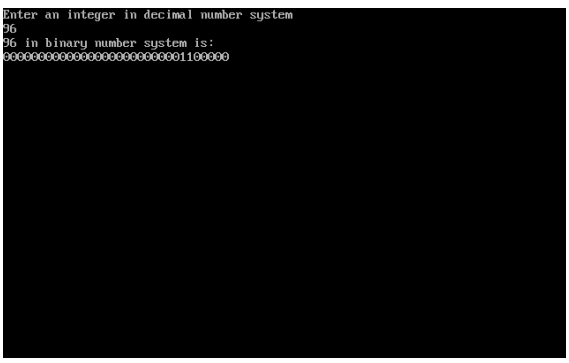
```
#include <stdio.h>
#include <conio.h>
void main()
{
   char operator;
   double FN,SN;
   clrscr();
    printf(”Enter an operator (+, -, *,): ”);
    scanf(”%c”, &operator);
    printf(”Enter two operands: ”);
    scanf(”%lf %lf”,&FN, &SN);
    switch(operator)
    {
        case ’+’:
            printf(”%.1lf + %.1lf = %.1lf”,FN, SN, FN + SN);
            break;
        case ’-’:
            printf(”%.1lf - %.1lf = %.1lf”,FN, SN, FN - SN);
            break;
        case ’*’:
           printf(”%.1lf * %.1lf = %.1lf”,FN, SN, FN * SN);
            break;
        case ’/’:
            printf(”%.1lf / %.1lf = %.1lf”,FN, SN, FN / SN);
            break;
        default:
            printf(”Error! operator is not correct”);
    }
    getch();
}
```

Output:

Program to convert Decimal to Binary.

```
#include <stdio.h>
#include <conio.h>
int main()
{
  int n, c, k;
    clrscr();

  printf("Enter an integer in decimal number system\n");
  scanf("%d", &n);

  printf("%d in binary number system is:\n", n);

  for (c = 31; c >= 0; c--)
  {
    k = n >> c;

    if (k & 1)
      printf("1");
    else
      printf("0");
  }
  printf("\n");
  getch();
}
```

Output:



Program to convert Decimal to Hexadecimal.

```
#include <stdio.h>
#include <conio.h>
int main()
{
    long decimalnum, quotient, remainder;
    int i, j = 0;
    char hexadecimalnum[100];
    clrscr();

    printf("Enter decimal number: ");
    scanf("%ld", &decimalnum);

    quotient = decimalnum;
    while (quotient != 0)
    {
        remainder = quotient % 16;
        if (remainder < 10)
            hexadecimalnum[j++] = 48 + remainder;
        else
            hexadecimalnum[j++] = 55 + remainder;
        quotient = quotient / 16;
    }
    for (i = j; i >= 0; i--)
            printf("%c", hexadecimalnum[i]);
    getch();
}
```

Output:

Program to check whether a String is palindrome or not.

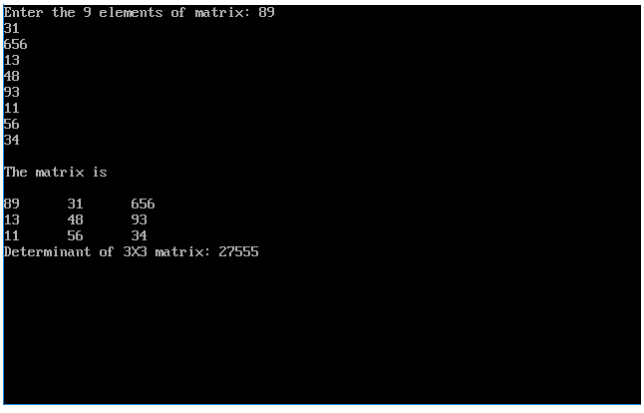
```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main()
{
    Clrscr();
    char string[25], reverse_string[25] = {'\0'};
    int  i, length = 0, flag = 0;

    printf("Enter a string \n");
    gets(string);
    for (i = 0; string[i] != '\0'; i++)
    {
        length++;
    }
    for (i = length - 1; i >= 0; i--)
    {
       reverse_string[length - i - 1] = string[i];
    }
    for (i = 0; i < length; i++)
    {
        if (reverse_string[i] == string[i])
            flag = 1;
        else
            flag = 0;
    }
    if (flag == 1)
        printf("%s is a palindrome \n", string);
    else
        printf("%s is not a palindrome \n", string);
     getch();
}
```

Output:

Program to find Determinant of a 3x3 Matrix.

```
#include<stdio.h>
#include<conio.h>
int main(){

  int a[3][3], i, j;
  long determinant;
  clrscr();

  printf("Enter the 9 elements of matrix: ");
  for(i = 0 ;i < 3;i++)
      for(j = 0;j < 3;j++)
           scanf("%d", &a[i][j]);

  printf("\nThe matrix is\n");
  for(i = 0;i < 3; i++){
      printf("\n");
      for(j = 0;j < 3; j++)
           printf("%d\t", a[i][j]);
  }

determinant = a[0][0] * ((a[1][1]*a[2][2]) - (a[2][1]*a[1][2])) -a[0][1] *
(a[1][0] * a[2][2] - a[2][0] * a[1][2]) + a[0][2] * (a[1][0] * a[2][1] -
a[2][0] * a[1][1]);

  printf("\nDeterminant of 3X3 matrix: %ld", determinant);
   getch();
}
```

Output:



Program to convert Uppercase to Lowercase & Vice Versa.

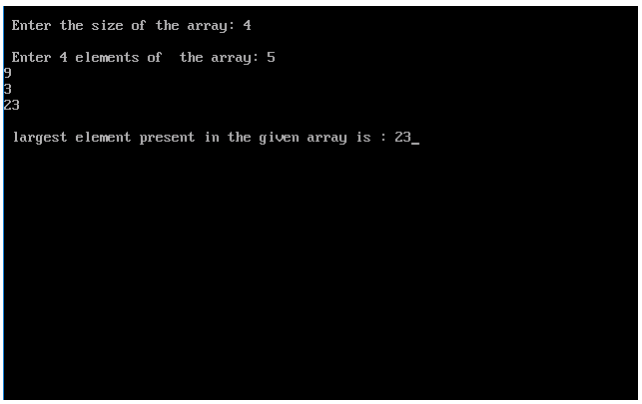
```
#include <stdio.h>
#include <conio.h>
#include <ctype.h>

void main()
{
    char sentence[100];
    int count, ch, i;
    clrscr();
    printf("Enter a sentence \n");
    for (i = 0;(sentence[i] = getchar()) != '\n'; i++)
      {
            ;
      }
    sentence[i] = '\0';
    count = i;
    printf("The given sentence is    : %s", sentence);
    printf("\n Case changed sentence is: ");
    for (i = 0; i < count; i++)
    {
ch = islower(sentence[i])? toupper(sentence[i]) : tolower(sentence[i]);
      putchar(ch);
    }
   getch();
}
```

Output:

Program to find Largest No. in an Array.

```
#include <stdio.h>
#include <conio.h>
int main()
{
        int array[50], size, i, largest;
           clrscr();

           printf("\n Enter the size of the array: ");
           scanf("%d", &size);

        printf("\n Enter %d elements of  the array: ", size);
        for (i = 0; i < size; i++)
           scanf("%d", &array[i]);
        largest = array[0];

        for (i = 1; i < size; i++)
        {
           if (largest < array[i])
                largest = array[i];
     }
 printf("\n largest element present in the given array is : %d", largest);
 getch();
}
```

Output:



Program to sort a list of integers in ascending order using Bubble Sort.

```
#include <stdio.h>
#include <conio.h>
int main()
{
  int array[100], n, c, d, swap;
  clrscr();

  printf("Enter number of elements\n");
  scanf("%d", &n);
  printf("Enter %d integers\n", n);

  for (c = 0; c < n; c++)
    scanf("%d", &array[c]);
  for (c = 0 ; c < n - 1; c++)
  {
    for (d = 0 ; d < n - c - 1; d++)
    {
      if (array[d] > array[d+1]) /* For decreasing order use < */
      {
        swap       = array[d];
        array[d]   = array[d+1];
        array[d+1] = swap;
      }
    }
  }
  printf("Sorted list in ascending order:\n");
  for (c = 0; c < n; c++)
     printf("%d\n", array[c]);
  getch();
}
```

Output:

```
Enter number of elements
5
Enter 5 integers
1
5
9
46
13
Sorted list in ascending order:
1
5
9
13
46
```

Program to sort a list of integers in ascending order using Insertion Sort.

```
#include <stdio.h>
#include <conio.h>
int main()
{
  int n, array[1000], c, d, t;
  clrscr();

  printf("Enter number of elements\n");
  scanf("%d", &n);

  printf("Enter %d integers\n", n);
  for (c = 0; c < n; c++)
    scanf("%d", &array[c]);
  for (c = 1 ; c <= n - 1; c++)
   {
    d = c;
    while ( d > 0 && array[d-1] > array[d]) {
      t     = array[d];
      array[d]   = array[d-1];
      array[d-1] = t;

      d--;
    }
  }

  printf("Sorted list in ascending order:\n");

  for (c = 0; c <= n - 1; c++) {
    printf("%d\n", array[c]);
  }
  getch();
}
```

Output:

Program to sort a list of integers in ascending order using Selection Sort.

```
#include <stdio.h>
#include <conio.h>
int main()
{
  int array[100], n, c, d, position, swap;
  clrscr();
  printf("Enter number of elements\n");
  scanf("%d", &n);

  printf("Enter %d integers\n", n);

  for (c = 0; c < n; c++)
    scanf("%d", &array[c]);
  for (c = 0; c < (n - 1); c++)
  {
    position = c;
    for (d = c + 1; d < n; d++)
    {
      if (array[position] > array[d])
        position = d;
    }
    if (position != c)
    {
      swap = array[c];
      array[c] = array[position];
      array[position] = swap;
    }
  }
  printf("Sorted list in ascending order:\n");

  for (c = 0; c < n; c++)
    printf("%d\n", array[c]);
  getch();
}
```

Output:

Program to Generate 10 Random No's in the range of 1 to 100.

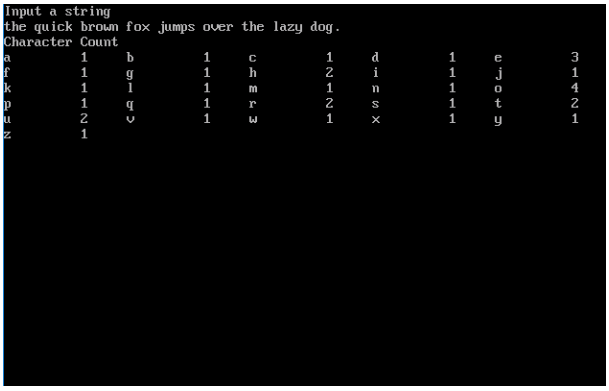
```
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>

int main() {
  int c, n;
  clrscr();

  printf("Ten random numbers in [1,100]\n");

  for (c = 1; c <= 10; c++) {
    n = rand() % 100 + 1;
    printf("%d\n", n);
  }

  getch();
}
```

Output:

Program to check frequency of repeated character in the string.

```
#include <stdio.h>
#include <string.h>
#include <conio.h>
void find_frequency(char [], int []);

int main()
{
   char string[100];
   int c, count[26] = {0};
   clrscr();

   printf("Input a string\n");
   gets(string);

   find_frequency(string, count);
   printf("Character Count\n");
   for (c = 0 ; c < 26 ; c++)
      printf("%c \t  %d\t", c + 'a', count[c]);

   getch();
}

void find_frequency(char s[], int count[]) {
   int c = 0;
   while (s[c] != '\0') {
      if (s[c] >= 'a' && s[c] <= 'z' )
         count[s[c]-'a']++;
      c++;
   }
}
```

Output:



Program to Compare whether two Strings are equal or not.

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

int main()
{
   char a[100], b[100];
   clrscr();

   printf("Enter a string\n");
   gets(a);

   printf("Enter a string\n");
   gets(b);

   if (strcmp(a,b) == 0)
      printf("The strings are equal.\n");
   else
      printf("The strings are not equal.\n");

   getch();
}
```

Output: