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C

C Program Examples

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Find out the perfect number using c program

```c
#include<stdio.h>
int main(){
  int n,i=1,sum=0;

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

  while(i<n){
      if(n%i==0)
           sum=sum+i;
          i++;
  }
  if(sum==n)
      printf("%d is a perfect number",i);
  else
      printf("%d is not a perfect number",i);

  return 0;
}
```

```
Sample output:
Enter a number: 6
6 is a perfect number
```

Code 2:

1. C program to find perfect numbers
2. C perfect number code
3. Perfect number program in c language

```c
#include<stdio.h>
int main(){
  int n,i,sum;
  int min,max;

  printf("Enter the minimum range: ");
  scanf("%d",&min);
  printf("Enter the maximum range: ");
  scanf("%d",&max);

  printf("Perfect numbers in given range is: ");
  for(n=min;n<=max;n++){
    i=1;
    sum = 0;

    while(i<n){
      if(n%i==0)
           sum=sum+i;
          i++;
    }

    if(sum==n)
      printf("%d ",n);
  }

  return 0;
}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 20
Perfect numbers in given range is: 6
```

Code 3:

3. C program to print perfect numbers from 1 to 100

```
#include<stdio.h>
int main(){
  int n,i,sum;

  printf("Perfect numbers are: ");
  for(n=1;n<=100;n++){
    i=1;
    sum = 0;

    while(i<n){
      if(n%i==0)
           sum=sum+i;
          i++;
    }

    if(sum==n)
      printf("%d ",n);
  }

  return 0;
}
```

```
Output:
Perfect numbers are: 6 28
```

Definition of perfect number or what is perfect number?

Perfect number is a positive number which sum of all positive divisors excluding that number is equal to that number. For example 6 is perfect number since divisor of 6 are 1, 2 and 3. Sum of its divisor is
1 + 2+ 3 =6

Note: 6 is the smallest perfect number.

Next perfect number is 28 since 1+ 2 + 4 + 7 + 14 = 28
Some more perfect numbers: 496, 8128

Check the given number is Armstrong number or not using c program

Code 1:

1. Warp to check a number is Armstrong

2. C program to check whether a number is Armstrong or not

3. Simple c program for Armstrong number

4. Armstrong number in c with output

```
#include<stdio.h>
int main(){
    int num,r,sum=0,temp;

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

    temp=num;
    while(num!=0){
         r=num%10;
         num=num/10;
         sum=sum+(r*r*r);
    }
    if(sum==temp)
         printf("%d is an Armstrong number",temp);
    else
         printf("%d is not an Armstrong number",temp);

    return 0;
}
```

Sample output:

```
Enter a number: 153

153 is an Armstrong number
```

The time complexity of a program that determines Armstrong number is: O (Number of digits)

Code 2:

1. Write a c program for Armstrong number

2. C program for Armstrong number generation

3. How to find Armstrong number in c

4. Code for Armstrong number in c

```
#include<stdio.h>
int main(){
    int num,r,sum,temp;
    int min,max;

    printf("Enter the minimum range: ");
    scanf("%d",&min);
    printf("Enter the maximum range: ");
    scanf("%d",&max);

    printf("Armstrong numbers in given range are: ");
    for(num=min;num<=max;num++){
         temp=num;
         sum = 0;

         while(temp!=0){
             r=temp%10;
             temp=temp/10;
             sum=sum+(r*r*r);
         }
         if(sum==num)
             printf("%d ",num);
    }

    return 0;
}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 200

Armstrong numbers in given range are: 1 153
```

Code 3:

1. Armstrong number in c using for loop

```c
#include<stdio.h>
int main(){
    int num,r,sum=0,temp;

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

    for(temp=num;num!=0;num=num/10){
         r=num%10;
         sum=sum+(r*r*r);
    }
    if(sum==temp)
         printf("%d is an Armstrong number",temp);
    else
         printf("%d is not an Armstrong number",temp);
    return 0;
}
```

Sample output:

```
Enter a number: 370
370 is an Armstrong number
```

Logic of Armstrong number in c

Code 4:

1. C program to print Armstrong numbers from 1 to 500
2. C program for finding Armstrong numbers

```
#include<stdio.h>
int main(){
    int num,r,sum,temp;

    for(num=1;num<=500;num++){
         temp=num;
         sum = 0;

         while(temp!=0){
             r=temp%10;
```

```
            temp=temp/10;
            sum=sum+(r*r*r);
        }
        if(sum==num)
            printf("%d ",num);
    }

    return 0;
}
```

Output:

```
1 153 370 371 407
```

Definition of Armstrong number or what is an Armstrong number:

Definition according to c programming point of view: Those numbers which sum of the cube of its digits is equal to that number are known as Armstrong numbers. For example 153 since 1^3 + 5^3 + 3^3 = 1+ 125 + 9 =153

Other Armstrong numbers: 370,371,407 etc.

In general definition:

Those numbers which sum of its digits to power of number of its digits is equal to that number are known as Armstrong numbers.

Example 1: 153

Total digits in 153 is 3

And 1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153

Example 2: 1634

Total digits in 1634 is 4

And 1^4 + 6^4 + 3^4 +4^4 = 1 + 1296 + 81 + 64 =1634

Examples of Armstrong numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9, 153, 370, 371, 407, 1634, 8208, 9474, 54748, 92727, 93084, 548834, 1741725

Check given number is prime number or not using c program

Definition of prime number:

A natural number greater than one which has not any other divisors except 1 and itself is called prime number. In other word we can say which has only two divisors 1 and number itself. For example: 5

Their divisors are 1 and 5.

Note: 2 is only even prime number.

Logic for prime number in c

We will take a loop and divide number from 2 to number/2. If the number is not divisible by any of the numbers then we will print it as prime number.

Example of 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 etc.

Code 1:

1. C program to determine prime number
2. Determining if a number is prime in c
3. C program to find given number is prime or not

```
#include<stdio.h>

int main(){

    int num,i,count=0;
    printf("Enter a number: ");
    scanf("%d",&num);
    for(i=2;i<=num/2;i++){
        if(num%i==0){
         count++;
            break;
        }
    }
   if(count==0 && num!= 1)
        printf("%d is a prime number",num);
   else
      printf("%d is not a prime number",num);
   return 0;
}
```

Sample output:

```
Enter a number: 5
5 is a prime number
```

Code 2:

1. C program for prime numbers between 1 to 100
2. How to find prime numbers from 1 to 100 in c
3. How to print prime numbers from 1 to 100 in c

```c
#include<stdio.h>

int main(){
    int num,i,count;

    for(num = 1;num<=100;num++){
         count = 0;

         for(i=2;i<=num/2;i++){
             if(num%i==0){
                 count++;
                 break;
             }
        }

         if(count==0 && num!= 1)
             printf("%d ",num);
    }

   return 0;
}
```

Output:

```
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
```

Code 3:

1. C program for prime numbers between 1 to n
2. C program to find prime numbers up to n
3. C program to list prime numbers
4. Write a c program to generate n prime numbers
5. C program to find n prime numbers

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

```
int main(){

    int num,i,count,n;
    printf("Enter max range: ");
    scanf("%d",&n);

    for(num = 1;num<=n;num++){

         count = 0;

         for(i=2;i<=num/2;i++){
             if(num%i==0){
                 count++;
                 break;
             }
        }

         if(count==0 && num!= 1)
             printf("%d ",num);
    }

   return 0;
}
```

```
Sample output:
Enter max range: 50
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

Code 4:

1. C program to find prime numbers using while loop
2. Wap to find prime numbers in c
3. Write a c program to generate prime number
4. How to get prime numbers in c

```
#include<stdio.h>

int main(){

   int num,i,count,min,max;
```

```
    printf("Enter min range: ");
    scanf("%d",&min);

    printf("Enter max range: ");
    scanf("%d",&max);

    num = min;
    while(num<=max){

         count = 0;
         i=2;

         while(i<=num/2){
             if(num%i==0){
                 count++;
                 break;
             }
             i++;
        }

         if(count==0 && num!= 1)
             printf("%d ",num);

         num++;
    }

   return 0;
}
```

Sample output:

```
Enter min range: 50
Enter max range: 100
53 59 61 67 71 73 79 83 89 97
```

Code 5:

1. How to find out prime numbers in c programming
2. Display prime numbers in c
3. C program to find prime numbers between two numbers
4. C code to display prime numbers within a range

```c
#include<stdio.h>

int main(){

    int num,i,count,min,max;

     printf("Enter min range: ");
     scanf("%d",&min);

    printf("Enter max range: ");
    scanf("%d",&max);

    for(num = min;num<=max;num++){

         count = 0;

         for(i=2;i<=num/2;i++){
             if(num%i==0){
                 count++;
                 break;
             }
        }

         if(count==0 && num!= 1)
             printf("%d ",num);
    }

   return 0;
}
```

Sample output:

```
Enter min range: 10
Enter max range: 50
11 13 17 19 23 29 31 37 41 43 47
```

Code 6:

1. Sum of prime numbers from 1 to 100 in c

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

```
int main(){

    int num,i,count,sum=0;

    for(num = 1;num<=100;num++){

         count = 0;

         for(i=2;i<=num/2;i++){
             if(num%i==0){
                 count++;
                 break;
             }
        }

         if(count==0 && num!= 1)
             sum = sum + num;
    }

    printf("Sum of prime numbers is: %d ",sum);

   return 0;
}
```

Output:

```
Sum of prime numbers is: 1060
```

Code 7:

1. C program to find sum of prime numbers

```
#include<stdio.h>

int main(){

    int num,i,count,min,max,sum=0;

     printf("Enter min range: ");
     scanf("%d",&min);
```

```
 printf("Enter max range: ");
    scanf("%d",&max);

    for(num = min;num<=max;num++){

         count = 0;

         for(i=2;i<=num/2;i++){
             if(num%i==0){
                 count++;
                 break;
             }
        }

         if(count==0 && num!= 1)
             sum = sum + num;
    }

    printf("Sum of prime numbers is: %d ",sum);

   return 0;
}
```

```
Sample output:
Enter min range: 50
Enter max range: 100
```

Write a c program to check given number is strong number or not.

Code 1:
1. Write a c program to check whether a number is strong or not

```
#include<stdio.h>
int main(){
  int num,i,f,r,sum=0,temp;

  printf("Enter a number: ");
  scanf("%d",&num);
  temp=num;
  while(num){
      i=1,f=1;
      r=num%10;

      while(i<=r){
         f=f*i;
        i++;
      }
      sum=sum+f;
      num=num/10;
  }
  if(sum==temp)
      printf("%d is a strong number",temp);
  else
      printf("%d is not a strong number",temp);

  return 0;
}
```

```
Sample output:
Enter a number: 145
145 is a strong number
```

Code 2:

1. C program for strong number
2. Strong number program in c

```
#include<stdio.h>
int main(){
  int num,i,f,r,sum,temp;
  int min,max;

  printf("Enter minimum range: ");
  scanf("%d",&min);

  printf("Enter maximum range: ");
  scanf("%d",&max);
  printf("Strong numbers in given range are: ");
  for(num=min; num <= max; num++){
      temp = num;
      sum=0;

      while(temp){
           i=1;
           f=1;
           r=temp%10;

           while(i<=r){
             f=f*i;
             i++;
           }
         sum=sum+f;
         temp=temp/10;
      }

      if(sum==num)
           printf("%d ",num);
  }
  return 0;
}
```

```
Sample output:
Enter minimum range: 100
Enter maximum range: 100000
Strong numbers in given range is: 145 40585
```

Definition of strong number:

A number is called strong number if sum of the factorial of its digit is equal to number itself. For example: 145 since
1! + 4! + 5! = 1 + 24 + 120 = 145

C program for odd or even number

Code 1:

1. C program to check even or odd
2. C determine odd or even
3. How to check odd number in c
4. How to determine odd or even in c
5. C even odd test

```c
#include<stdio.h>

int main(){

    int number;

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

    if(number % 2 ==0)
         printf("%d is even number.",number);
    else
         printf("%d is odd number.",number);

    return 0;

}
```

Sample output:

```
Enter any integer: 5
5 is odd number.
```

Code 2:

1. Display odd numbers in c
2. How to print odd numbers in c

```c
#include<stdio.h>

int main(){

    int number;
    int min,max;

    printf("Enter the minimum range: ");
    scanf("%d",&min);

    printf("Enter the maximum range: ");
    scanf("%d",&max);

    printf("Odd numbers in given range are: ");
    for(number = min;number <= max; number++)

         if(number % 2 !=0)
             printf("%d ",number);

    return 0;

}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 20
Odd numbers in given ranges are: 1 3 5 7 9 11 13 15 17
19
```

Code 3:

1. Even and odd numbers program in c
2. C program to find even or odd

```
#include<stdio.h>

int main(){

    int number;
    int min,max;

    printf("Enter the minimum range: ");
    scanf("%d",&min);

    printf("Enter the maximum range: ");
    scanf("%d",&max);

    printf("Odd numbers in given range are: ");
    for(number = min;number <= max; number++)
```

```
         if(number % 2 !=0)
             printf("%d ",number);

    printf("\nEven numbers in given range are: ");
    for(number = min;number <= max; number++)

         if(number % 2 ==0)
             printf("%d ",number);

    return 0;
}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 20
Odd numbers in given ranges are: 1 3 5 7 9 11 13 15 17
19
Even numbers in given ranges are: 2 4 6 8 10 12 14 16
18 20
```

Code 4:

1. Sum of odd numbers in c

```
#include<stdio.h>

int main(){

    int number;
    int min,max;
    long sum =0;

    printf("Enter the minimum range: ");
    scanf("%d",&min);

    printf("Enter the maximum range: ");
    scanf("%d",&max);

    for(number = min;number <= max; number++)
         if(number % 2 !=0)
```

```
            sum = sum + number;

    printf("Sum of odd numbers in given range is:
%ld",sum);

    return 0;

}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 100
Sum of odd numbers in given range is: 2500
```

Code 5:

1. Sum of odd and even numbers c program

```
#include<stdio.h>

int main(){

    int number;
    int min,max;
    long odd_sum =0,even_sum = 0;

    printf("Enter the minimum range: ");
    scanf("%d",&min);

    printf("Enter the maximum range: ");
    scanf("%d",&max);

    for(number = min;number <= max; number++)
        if(number % 2 != 0)
            odd_sum = odd_sum + number;
        else
            even_sum = even_sum + number;

    printf("Sum of even numbers in given range is:
%ld\n",even_sum);
```

```
    printf("Sum of odd numbers in given range is: 
%ld",odd_sum);

    return 0;

}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 10
Sum of even numbers in given range is: 30
Sum of odd numbers in given range is: 25
```

Number is called even number if it is divisible by two otherwise odd.

Example of even numbers: 0,2,4,8,9,10 etc.
Example of odd numbers: 1, 3,5,7,9 etc.

Check the given number is palindrome number or not using c program

Code 1:
1. Wap to check a number is palindrome
2. C program to find whether a number is palindrome or not

```
#include<stdio.h>
int main(){
    int num,r,sum=0,temp;

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

    temp=num;
    while(num){
         r=num%10;
         num=num/10;
         sum=sum*10+r;
    }
    if(temp==sum)
         printf("%d is a palindrome",temp);
    else
         printf("%d is not a palindrome",temp);

    return 0;
}
```

```
Sample output:
Enter a number: 131
131 is a palindrome
```

Code 2:

1. Write a c program for palindrome
2. C program to find palindrome of a number
3. Palindrome number in c language

```
#include<stdio.h>
int main(){
    int num,r,sum,temp;
    int min,max;

    printf("Enter the minimum range: ");
    scanf("%d",&min);

    printf("Enter the maximum range: ");
    scanf("%d",&max);

    printf("Palindrome numbers in given range are: ");
    for(num=min;num<=max;num++){
         temp=num;
         sum=0;

         while(temp){
             r=temp%10;
             temp=temp/10;
             sum=sum*10+r;
         }
         if(num==sum)
```

```
            printf("%d ",num);
    }
    return 0;
}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 50
Palindrome numbers in given range are: 1 2 3 4 5 6 7 8
9 11 22 33 44
```

Code 3:

1. How to check if a number is a palindrome using for loop

```
#include<stdio.h>
int main(){
    int num,r,sum=0,temp;

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

    for(temp=num;num!=0;num=num/10){
        r=num%10;
        sum=sum*10+r;
    }
    if(temp==sum)
        printf("%d is a palindrome",temp);
    else
        printf("%d is not a palindrome",temp);

    return 0;
}
```

```
Sample output:
Enter a number: 1221
1221 is a palindrome
```

Code 4:

1. C program to check if a number is palindrome using recursion

```
#include<stdio.h>

int checkPalindrome(int);
int main(){
    int num,sum;

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

    sum = checkPalindrome(num);

    if(num==sum)
         printf("%d is a palindrome",num);
    else
    printf("%d is not a palindrome",num);

    return 0;
}

int checkPalindrome(int num){

    static int sum=0,r;

    if(num!=0){
         r=num%10;
         sum=sum*10+r;
         checkPalindrome(num/10);
    }

    return sum;
}
```

Sample output:

```
Enter a number: 25
25 is not a palindrome
```

Definition of Palindrome number or what is palindrome number?

A number is called palindrome number if it is remain same when its digits are reversed. For example 121 is palindrome number. When we will reverse its digit it will remain same number i.e. 121

Palindrome numbers examples: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191 etc.

Write a c program to check given string is palindrome number or not

```
include<string.h>

#include<stdio.h>

int main(){

  char *str,*rev;

  int i,j;

  printf("\nEnter a string:");

  scanf("%s",str);

  for(i=strlen(str)-1,j=0;i>=0;i--,j++)

      rev[j]=str[i];

      rev[j]='\0';

  if(strcmp(rev,str))

      printf("\nThe string is not a palindrome");

  else

      printf("\nThe string is a palindrome");

  return 0;
}
```

Definition of Palindrome string:

A string is called palindrome if it symmetric. In other word a string is called palindrome if string remains same if its characters are reversed. For example: asdsa

If we will reverse it will remain same i.e. asdsa

Example of string palindrome: a,b, aa,aba,qwertrewq etc.

C program for solving quadratic equation

1. C program to calculate roots of a quadratic equation
2. Quadratic equation in c language

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

int main(){
  float a,b,c;
  float d,root1,root2;


  printf("Enter a, b and c of quadratic equation: ");
  scanf("%f%f%f",&a,&b,&c);

  d = b * b - 4 * a * c;

  if(d < 0){
    printf("Roots are complex number.\n");

    printf("Roots of quadratic equation are: ");
    printf("%.3f%+.3fi",-b/(2*a),sqrt(-d)/(2*a));
    printf(", %.3f%+.3fi",-b/(2*a),-sqrt(-d)/(2*a));

    return 0;
  }
  else if(d==0){
   printf("Both roots are equal.\n");

   root1 = -b /(2* a);
   printf("Root of quadratic equation is: %.3f
",root1);

   return 0;
  }
  else{
   printf("Roots are real numbers.\n");

   root1 = ( -b + sqrt(d)) / (2* a);
   root2 = ( -b - sqrt(d)) / (2* a);
   printf("Roots of quadratic equation are: %.3f ,
%.3f",root1,root2);
  }

  return 0;
}
```

```
Sample output:
Enter a, b and c of quadratic equation: 2 4 1
Roots are real numbers.
Roots of quadratic equation are: -0.293, -1.707
```

1. How to find a b and c in a quadratic equation

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

int main(){
  float a,b,c;
  float d,root1,root2;

  printf("Enter quadratic equation in the format
ax^2+bx+c: ");
  scanf("%fx^2%fx%f",&a,&b,&c);
  d = b * b - 4 * a * c;

  if(d < 0){
    printf("Roots are complex number.\n");

    return 0;
  }

   root1 = ( -b + sqrt(d)) / (2* a);
   root2 = ( -b - sqrt(d)) / (2* a);
   printf("Roots of quadratic equation are: %.3f ,
%.3f",root1,root2);

  return 0;
}
```

```
Sample output:
Enter quadratic equation in the format ax^2+bx+c:
2x^2+4x+-1
Roots of quadratic equation are: 0.000, -2.000
```

To find Fibonacci series using c program

Code 1:

1. Write a program to generate the Fibonacci series in c
2. Write a program to print Fibonacci series in c
3. Basic c programs Fibonacci series
4. How to print Fibonacci series in c
5. How to find Fibonacci series in c programming
6. Fibonacci series in c using for loop

```
#include<stdio.h>
int main(){
    int k,r;
    long int i=0l,j=1,f;

    //Taking maximum numbers form user
    printf("Enter the number range:");
    scanf("%d",&r);

    printf("FIBONACCI SERIES: ");
    printf("%ld %ld",i,j); //printing firts two values.

    for(k=2;k<r;k++){
         f=i+j;
         i=j;
         j=f;
         printf(" %ld",j);
    }

    return 0;
}
```

```
Sample output:
Enter the number range: 15
FIBONACCI SERIES: 0 1 1 2 3 5 8 13 21 34 55 89 144 233
377
```

Code 2:

1. Fibonacci series using array in c
2. Fibonacci series program in c language
3. Source code of Fibonacci series in c
4. Wap to print Fibonacci series in c

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

    int i,range;
    long int arr[40];

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

    arr[0]=0;
    arr[1]=1;

    for(i=2;i<range;i++){
         arr[i] = arr[i-1] + arr[i-2];
    }

    printf("Fibonacci series is: ");
    for(i=0;i<range;i++)
         printf("%ld ",arr[i]);

    return 0;
}
```

Sample output:

```
Enter the number range: 20
Fibonacci series is: 0 1 1 2 3 5 8 13 21 34 55 89 144
233 377 610 987 1597 2584 4181
```

Code 3:

1. Fibonacci series in c using while loop
2. C program to calculate Fibonacci series
3. C program to display Fibonacci series
4. Fibonacci series in c with explanation
5. C code to generate Fibonacci series

```
#include<stdio.h>
int main(){
    int k=2,r;
    long int i=0l,j=1,f;

    printf("Enter the number range:");
    scanf("%d",&r);

    printf("Fibonacci series is: %ld %ld",i,j);

    while(k<r){
         f=i+j;
         i=j;
         j=f;
         printf(" %ld",j);
          k++;
    }

    return 0;
}
```

```
Sample output:
Enter the number range: 10
Fibonacci series is: 0 1 1 2 3 5 8 13 21 34
```

Code 4:

1. Sum of Fibonacci series in c

```c
#include<stdio.h>
int main(){
    int k,r;
    long int i=0,j=1,f;
    long int sum = 1;

    printf("Enter the number range: ");
    scanf("%d",&r);

    for(k=2;k<r;k++){
         f=i+j;
         i=j;
         j=f;
         sum = sum + j;
    }

    printf("Sum of Fibonacci series is: %ld",sum);

    return 0;
}
```

```
Sample output:
Enter the number range: 4
Sum of Fibonacci series is: 4
```

Definition of Fibonacci numbers:

We assume first two Fibonacci are 0 and 1
A series of numbers in which each sequent number is sum of its two previous numbers is known as Fibonacci

series and each numbers are called Fibonacci numbers. So Fibonacci numbers is

Algorithm for Fibonacci series

$F_n = F_{n-2} + F_{n-1}$

Example of Fibonacci series:

0 , 1 ,1 , 2 , 3 , 5 , 8 , 13 , 21 , 34 , 55 ...

5 is Fibonacci number since sum of its two previous number i.e. 2 and 3 is 5
8 is Fibonacci number since sum of its two previous number i.e. 3 and 5 is 8 and so on.

To find factorial of a number using c program

Code 1:
1. C code for factorial of a number
2. C program to find the factorial of a given number
3. Factorial program in c using while loop
4. Factorial program in c without using recursion

```
#include<stdio.h>
int main(){
  int i=1,f=1,num;

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

  while(i<=num){
      f=f*i;
      i++;
  }

  printf("Factorial of %d is: %d",num,f);
  return 0;
}
```

```
Sample output:
Enter a number: 5
Factorial of 5 is: 120
```

Code 2:
1. Factorial program in c using for loop
2. Simple factorial program in c
3. C program to calculate factorial

```c
#include<stdio.h>
int main(){
  int i,f=1,num;

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

  for(i=1;i<=num;i++)
      f=f*i;

  printf("Factorial of %d is: %d",num,f);
  return 0;
}
```

Code 3:
1. Factorial program in c using pointers
2. How to calculate factorial in c
3. Factorial program in c language

```c
#include<stdio.h>

void findFactorial(int,int *);
int main(){
  int i,factorial,num;

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

  findFactorial(num,&factorial);
  printf("Factorial of %d is: %d",num,*factorial);
  return 0;
}

void findFactorial(int num,int *factorial){
    int i;

    *factorial =1;

    for(i=1;i<=num;i++)
      *factorial=*factorial*i;
}
```

Code 4:

1. Factorial program in c using function
2. C program to find factorial of a number

```
#include<stdio.h>

int findFactorial(int);
int main(){
  int i,factorial,num;

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

  factorial = findFactorial(num);
  printf("Factorial of %d is: %d",num,factorial);

  return 0;
}

int findFactorial(int num){
    int i,f=1;

    for(i=1;i<=num;i++)
      f=f*i;

     return f;
}
```

```
Sample output:
Enter a number: 8
Factorial of 8 is: 40320
```

Code 5:

1. Factorial series in c

```c
#include<stdio.h>
int main(){
  long f=1;
  int i,num,min,max;

  printf("Enter the minimum range: ");
  scanf("%d",&min);

  printf("Enter the maximum range: ");
  scanf("%d",&max);

  printf("Factorial series in given range: ");
  for(num=min;num<=max;num++){
    f=1;

    for(i=1;i<=num;i++)
      f=f*i;

    printf("%ld ",f);
  }

  return 0;
}
```

```
Sample output:
Enter the minimum range: 1
Enter the maximum range: 10
Factorial series in given range: 1 2 6 24 120 720 5040
40320 362880 3628800
```

Factorial of number is defined as:
Factorial (n) = 1*2*3 … * n
For example: Factorial of 5 = 1*2*3*4*5 = 120

Note: Factorial of zero = 1

Write a c program for Floyd’s triangle.

1. Write a c program to print Floyd’s triangle

2. C program to display Floyd’s triangle

3. How to print Floyd’s triangle in c

```
#include<stdio.h>

int main(){

  int i,j,r,k=1;

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

  printf("FLOYD'S TRIANGLE\n\n");
  for(i=1;i<=r;i++){
      for(j=1;j<=i;j++,k++)
           printf(" %d",k);
      printf("\n");
  }

  return 0;
}
```

```
Sample output:
Enter the range: 10
FLOYD'S TRIANGLE

 1
 2 3
 4 5 6
 7 8 9 10
 11 12 13 14 15
 16 17 18 19 20 21
 22 23 24 25 26 27 28
 29 30 31 32 33 34 35 36
 37 38 39 40 41 42 43 44 45
 46 47 48 49 50 51 52 53 54 55
```

Definition of Floyd's triangle:

Floyd's triangle is a right angled-triangle using the natural numbers. Examples of Floyd's triangle:

Example 1:

```
1
2 3
4 5 6
7 8 9 10
```

Example 2:

```
1
2   3
4   5   6
7   8   9   10
11  12  13  14  15
16  17  18  19  20 21
```

Write a c program to print Pascal triangle.

```c
#include<stdio.h>
int main(){
  int line,i,j,k;
  printf("Enter the no. of lines: ");
  scanf("%d",&line);
  for(i=1;i<=line;i++){
      for(j=1;j<=line-i;j++)
           printf(" ");
      for(k=1;k<i;k++)
      printf("%d",k);
```

```
       for(k=i;k>=1;k--)
       printf("%d",k);
       printf("\n");
   }
   return 0;
}
```

Sample output:

```
Enter the no. of lines: 5
   121
  12321
 1234321
123454321
```

To find multiplication table using c program

1. Multiplication tables in c program
2. Write a c program to print multiplication table
3. Code for multiplication table in c
4. Multiplication table in c language
5. Write a c program to print multiplication table

```
#include<stdio.h>
int main(){
  int r,i,j,k;
  printf("Enter the number range: ");
  scanf("%d",&r);
  for(i=1;i<=r;i++){
      for(j=1;j<=10;j++)
           printf("%d*%d=%d ",i,j,i*j);
      printf("\n");
  }
  return 0;
}
```

Sample Output:

```
Enter the number range: 5
```

```
1*1=1  1*2=2  1*3=3  1*4=4  1*5=5  1*6=6  1*7=7  1*8=8  1*9=9
1*10=10

2*1=2  2*2=4  2*3=6  2*4=8  2*5=10  2*6=12  2*7=14  2*8=16
2*9=18 2*10=20
3*1=3  3*2=6  3*3=9  3*4=12  3*5=15  3*6=18  3*7=21  3*8=24
3*9=27 3*10=30
4*1=4  4*2=8  4*3=12  4*4=16  4*5=20  4*6=24  4*7=28  4*8=32
4*9=36 4*10=40
5*1=5  5*2=10  5*3=15  5*4=20  5*5=25  5*6=30  5*7=35  5*8=40
5*9=45 5*10=50
```

Printing ascii value using c program

```c
#include<stdio.h>



int main(){

    int i;

    for(i=0;i<=255;i++)
         printf("ASCII value of character %c:
%d\n",i,i);

    return 0;
}
```

Output:

```
ASCII value of character  : 0
ASCII value of character ☺: 1
ASCII value of character ☻: 2
ASCII value of character ♥: 3
ASCII value of character ♦: 4
ASCII value of character ♣: 5
ASCII value of character ♠: 6
ASCII value of character : 7
ASCII value of character: 8
ASCII value of character        :
ASCII value of character
: 10
ASCII value of character ♂: 11
ASCII value of character ♀: 12
: 13I value of character
ASCII value of character ♫: 14
ASCII value of character ☼: 15
ASCII value of character ►: 16
ASCII value of character ◄: 17
ASCII value of character ↕: 18
ASCII value of character ‼: 19
ASCII value of character ¶: 20
ASCII value of character §: 21
ASCII value of character ▬: 22
ASCII value of character ↨: 23
ASCII value of character ↑: 24
ASCII value of character ↓: 25
ASCII value of character →: 26
ASCII value of character ←: 27
ASCII value of character ∟: 28
ASCII value of character ↔: 29
ASCII value of character ▲: 30
ASCII value of character ▼: 31
ASCII value of character  : 32
ASCII value of character !: 33
ASCII value of character ": 34
ASCII value of character #: 35
ASCII value of character $: 36
ASCII value of character %: 37
ASCII value of character &: 38
ASCII value of character ': 39
ASCII value of character (: 40
ASCII value of character ): 41
ASCII value of character *: 42
ASCII value of character +: 43
ASCII value of character ,: 44
ASCII value of character -: 45
ASCII value of character .: 46
ASCII value of character /: 47
ASCII value of character 0: 48
ASCII value of character 1: 49
ASCII value of character 2: 50
ASCII value of character 3: 51
ASCII value of character 4: 52
ASCII value of character 5: 53
ASCII value of character 6: 54
ASCII value of character 7: 55
ASCII value of character 8: 56
ASCII value of character 9: 57
ASCII value of character :: 58
ASCII value of character ;: 59
ASCII value of character <: 60
ASCII value of character =: 61
ASCII value of character >: 62
ASCII value of character ?: 63
ASCII value of character @: 64
ASCII value of character A: 65
ASCII value of character B: 66
ASCII value of character C: 67
ASCII value of character D: 68
ASCII value of character E: 69
ASCII value of character F: 70
ASCII value of character G: 71
ASCII value of character H: 72
ASCII value of character I: 73
ASCII value of character J: 74
ASCII value of character K: 75
ASCII value of character L: 76
ASCII value of character M: 77
ASCII value of character N: 78
ASCII value of character O: 79
ASCII value of character P: 80
ASCII value of character Q: 81
ASCII value of character R: 82
ASCII value of character S: 83
ASCII value of character T: 84
ASCII value of character U: 85
ASCII value of character V: 86
ASCII value of character W: 87
ASCII value of character X: 88
ASCII value of character Y: 89
ASCII value of character Z: 90
ASCII value of character [: 91
ASCII value of character \: 92
ASCII value of character ]: 93
ASCII value of character ^: 94
ASCII value of character _: 95
ASCII value of character `: 96
ASCII value of character a: 97
ASCII value of character b: 98
ASCII value of character c: 99
ASCII value of character d: 100
ASCII value of character e: 101
ASCII value of character f: 102
ASCII value of character g: 103
ASCII value of character h: 104
ASCII value of character i: 105
ASCII value of character j: 106
ASCII value of character k: 107
ASCII value of character l: 108
ASCII value of character m: 109
ASCII value of character n: 110
ASCII value of character o: 111
ASCII value of character p: 112
ASCII value of character q: 113
ASCII value of character r: 114
ASCII value of character s: 115
ASCII value of character t: 116
ASCII value of character u: 117
ASCII value of character v: 118
ASCII value of character w: 119
ASCII value of character x: 120
ASCII value of character y: 121
ASCII value of character z: 122
ASCII value of character {: 123
ASCII value of character |: 124
ASCII value of character }: 125
ASCII value of character ~: 126
ASCII value of character ⌂: 127
ASCII value of character Ç: 128
ASCII value of character ü: 129
ASCII value of character é: 130
ASCII value of character â: 131
ASCII value of character ä: 132
ASCII value of character à: 133
ASCII value of character å: 134
ASCII value of character ç: 135
ASCII value of character ê: 136
ASCII value of character ë: 137
ASCII value of character è: 138
ASCII value of character ï: 139
ASCII value of character î: 140
ASCII value of character ì: 141
ASCII value of character Ä: 142
ASCII value of character Å: 143
ASCII value of character É: 144
ASCII value of character æ: 145
ASCII value of character Æ: 146
ASCII value of character ô: 147
ASCII value of character ö: 148
ASCII value of character ò: 149
ASCII value of character û: 150
ASCII value of character ù: 151
ASCII value of character ÿ: 152
ASCII value of character Ö: 153
ASCII value of character Ü: 154
ASCII value of character ¢: 155
ASCII value of character £: 156
ASCII value of character ¥: 157
ASCII value of character ₧: 158
ASCII value of character ƒ: 159
ASCII value of character á: 160
ASCII value of character í: 161
ASCII value of character ó: 162
ASCII value of character ú: 163
ASCII value of character ñ: 164
ASCII value of character Ñ: 165
ASCII value of character ª: 166
ASCII value of character º: 167
ASCII value of character ¿: 168
ASCII value of character ⌐: 169
ASCII value of character ¬: 170
ASCII value of character ½: 171
ASCII value of character ¼: 172
ASCII value of character ¡: 173
ASCII value of character «: 174
ASCII value of character »: 175
ASCII value of character ░: 176
ASCII value of character ▒: 177
ASCII value of character ▓: 178
ASCII value of character │: 179
ASCII value of character ┤: 180
ASCII value of character ╡: 181
ASCII value of character ╢: 182
ASCII value of character ╖: 183
ASCII value of character ╕: 184
ASCII value of character ╣: 185
ASCII value of character ║: 186
ASCII value of character ╗: 187
ASCII value of character ╝: 188
ASCII value of character ╜: 189
ASCII value of character ╛: 190
ASCII value of character ┐: 191
ASCII value of character └: 192
ASCII value of character ┴: 193
ASCII value of character ┬: 194
ASCII value of character ├: 195
ASCII value of character ─: 196
ASCII value of character ┼: 197
ASCII value of character ╞: 198
ASCII value of character ╟: 199
ASCII value of character ╚: 200
ASCII value of character ╔: 201
ASCII value of character ╩: 202
ASCII value of character ╦: 203
ASCII value of character ╠: 204
ASCII value of character ═: 205
ASCII value of character ╬: 206
ASCII value of character ╧: 207
ASCII value of character ╨: 208
ASCII value of character ╤: 209
ASCII value of character ╥: 210
ASCII value of character ╙: 211
ASCII value of character ╘: 212
ASCII value of character ╒: 213
ASCII value of character ╓: 214
ASCII value of character ╫: 215
ASCII value of character ╪: 216
ASCII value of character ┘: 217
ASCII value of character ┌: 218
ASCII value of character █: 219
ASCII value of character ▄: 220
ASCII value of character ▌: 221
ASCII value of character ▐: 222
ASCII value of character ▀: 223
ASCII value of character α: 224
ASCII value of character ß: 225
ASCII value of character Γ: 226
ASCII value of character π: 227
ASCII value of character Σ: 228
ASCII value of character σ: 229
ASCII value of character µ: 230
ASCII value of character τ: 231
ASCII value of character Φ: 232
ASCII value of character Θ: 233
ASCII value of character Ω: 234
ASCII value of character δ: 235
ASCII value of character ∞: 236
ASCII value of character φ: 237
ASCII value of character ε: 238
ASCII value of character ∩: 239
ASCII value of character ≡: 240
ASCII value of character ±: 241
ASCII value of character ≥: 242
ASCII value of character ≤: 243
ASCII value of character ⌠: 244
ASCII value of character ⌡: 245
ASCII value of character ÷: 246
ASCII value of character ≈: 247
ASCII value of character °: 248
ASCII value of character ∙: 249
ASCII value of character ·: 250
ASCII value of character √: 251
ASCII value of character ⁿ: 252
ASCII value of character ²: 253
ASCII value of character ■: 254
ASCII value of character  : 255
```

C program to print hello world without using semicolon

```
#include<stdio.h>
void main(){
    if(printf("Hello world")){
    }
}
```

Solution: 2

```
#include<stdio.h>
void main(){
    while(!printf("Hello world")){
    }
}
```

Solution: 3

```
#include<stdio.h>
void main(){
    switch(printf("Hello world")){
    }
}
```

Write a c program which produces its own source code as its output

How do you write a program which produces its own source code as its output in c language?

```c
#include<stdio.h>

int main(){
    FILE *fp;
    char c;

    fp = fopen(__FILE__,"r");

    do{
         c= getc(fp);
         putchar(c);
    }
    while(c!=EOF);

    fclose(fp);

    return 0;
}
```

Output:

```
#include<stdio.h>

int main(){
    FILE *fp;
    char c;

    fp = fopen(__FILE__,"r");

    do{
         c= getc(fp);
         putchar(c);
    }
    while(c!=EOF);

    fclose(fp);

    return 0;
}
```