**Write the following programs:**

1. Write a program to swap two numbers.
2. Write a program to find Fibonacci series up to 10 terms.
3. Write a program to find the factorial of a number.
4. Write a program to reverse a number.
5. Write a program to check whether given number is a Palindrome or not.
6. Write a program to check whether the given number is an Armstrong number.
7. Write a program to check whether the given number is a Prime Number or not.
8. Write a program to create the following star pattern:

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1. Write a program to create the following star pattern:

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**How to swap two numbers using third variable?**

#include<stdio.h>

void main()

{

int a=10,b=20,temp;

temp=a;

a=b;

b=temp;

printf("Value of a is=%d \n",a);

printf("Value of b is=%d \n",b);

}

**How to swap two numbers without using third variable?**

#include<stdio.h>

void main()

{

int a=10,b=20;

a=a+b;

b=a-b;

a=a-b;

printf("Value of a is=%d \n",a);

printf("Value of b is=%d \n",b);

}

**Fibonacci Series:It is a series that starts from 0 an 1.**

**Next number in series is the sum of last two numbers.**

#include<stdio.h>

void main()

{

int a=0,b=1,c,i;

printf("%d\n",a);

printf("%d\n",b);

for(i=0;i<=10;i++)

{

c=a+b;

printf("%d\n",c);

a=b;

b=c;

}

}

**Factorial: it is a multiplication of all the integers from 1 to given number.**

#include<stdio.h>

void main()

{

int num=5,i;

int fact=1;

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

{

fact=fact\*i;

}

printf("%d\n",fact);

}

**How to reverse any number?**

#include<stdio.h>

void main()

{

int num=1234,result=0,rem;

while(num!=0)

{

rem=num%10;

result=result+rem;

//result=result\*10+rem;

num=num/10;

}

printf("%d\n",result);

}

How to check whether given number is a palindrome?

#include<stdio.h>

void main()

{

int num=12321,result=0,rem;

//int temp=num;

while(num!=0)

{

rem=num%10;

result=result\*10+rem;

num=num/10;

}

//num=temp;

if(num==result)

{

printf("It is a palindrome");

}

else

{

printf("It is not a palindrome");

}

}

**What is Armstrong Number?**

It is a number that is equal to the sum of cubes of its digits.

#include<stdio.h>

void main()

{

int num=153,rem,cube,result=0;

//int temp=num;

while(num!=0)

{

rem=num%10;

cube=rem\*rem\*rem;

result=result+cube;

num=num/10;

}

//num=temp;

if(num==result)

{

printf("It is a armstrong number:\n");

}

else

{

printf("It is not a armstrong number:\n");

}

}

**Prime number is a number that is only divisible by one and number itself.**

#include<stdio.h>

void main()

{

int num=7,count=0,i;

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

{

if(num%i==0)

{

count++;

}

}

if(count==2)

{

printf("This is a prime number:\n");

}

else

{

printf("This is not a prime number:\n");

}

}

pattern 1:

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#include<stdio.h>

void main()

{

int i,j;

for(i=1;i<=5;i++)

{

for(j=1;j<=5;j++)

{

printf("\*");

}

printf("\n");

}

}

**Star Patter 2:**

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#include<stdio.h>

void main()

{

int i,j;

for(i=1;i<=5;i++)

{

for(j=1;j<=i;j++)

{

printf("\*");

}

printf("\n");

}

}

**Pattern 3:**

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#include<stdio.h>

void main()

{

int i,j;

for(i=1;i<=5;i++)

{

for(j=i;j<=5;j++)

{

printf("\*");

}

printf("\n");

}

}

**Pattern 4:**

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#include<stdio.h>

void main()

{

int i,j;

for(i=1;i<=5;i++)

{

for(j=1;j<=i;j++)

{

printf("\*");

}

printf("\n");

}

for(i=1;i<=4;i++)

{

for(j=i;j<=4;j++)

{

printf("\*");

}

printf("\n");

}

}