

```

num
for(i=1; i<num ;i++)
{
    if((num % i) == 0)
        sum = sum + i;
}
if(num==sum)
    cout<<num<<" is perfect";
else
    cout<<num<<" is not perfect";

```

nested loop - loop within loop

```

for(i=1; i<=5 ; i++)    //outer
{
    stat-1;                //5 times
    for(j=1 ;j<=5 ;j++)    //inner
    {
        stat-2;        - 25 times
        stat-3;
    }
    stat-4;        //5 times
}

```

5, 15

table of 5 : 5 10 15 20 25 30 35
6 12

```

#include

int main()
{
    int r1, r2, num, i;
    cout<<"\n Enter range..";
    cin>>r1;                //5
    cin>>r2;                //15
    for(num=r1 ; num<=r2 ; num++)    //num = 7
    {
        cout<<"\n Table of "<<num<<" : ";
        for(i=1 ; i<=10 ;i++)    //i =1
            cout<<num*i<<" ";
    }
    return 0;
}

```

```
}
```

take a range and print all prime numbers within the range

```
r1 = 17      r2 = 32      17

for(num=r1 ;num<=r2 ;num++)    //outer    num = 19
{

    for(i=2;i<num;i++)    //i=19
    {
        if((num % i) == 0)
            break;
    } //inner loop

    if(num == i)
        cout<<num<<" ";

} //outer loop
```

```
*****
*****
*****
*****
*****
```

```
    for(i=1;i<=5;i++)        //outer loop is for number of rows
    {
        cout<<"\n";
        for(j=1;j<=5;j++)    // inner loop is for number of cols
        {
            cout<<"*";
        }
    }
}
```

```
*
**
***
****
*****
```

```
    for(i=1;i<=5;i++)        //outer loop is for number of rows
    {
        cout<<"\n";
        for(j=1;j<=i;j++)    // inner loop is for number of cols
        {
            cout<<"*";
        }
    }
}
```

```
*****
****
***
**
*
```

```
for(i=1;i<=5;i++)      //outer loop is for number of rows
{
    cout<<"\n";
    for(j=5;j>=i;j--)  // inner loop is for number of cols
    {
        cout<<"*";
    }
}
```

```
1
12
123
1234
12345
```

```
54321
4321
321
21
1
```

```
!!
!*!
!**!
!***!
!****!
!*****!
```

```
for(i=1;i<=6;i++)      //outer loop is for number of rows
{
    cout<<"\n!";
    for(j=1;j<i;j++)    // inner loop is for number of cols
    {
        cout<<"*";
    }
    cout<<"!";
}
```

```

*
**
***
****
*****
```

1. Tea - 10/-
2. Coffee - 20/-
3. Black Tea - 22/-
4. Vada Paav - 15/-
5. Exit

```
#include<iostream>
using namespace std;

int main()
{
    int ch, qty, total_bill = 0;

    do {
        cout<<"\n 1. Hot Drinks      ";
        cout<<"\n 2. Cold drinks    ";
        cout<<"\n 3. ice cream  ";
        cout<<"\n 4. snacks    ";
        cout<<"\n 5. Exit";
        cout<<"\n Enter your choice..(1..5)";
        cin>>ch;
        if(ch == 5) break;

        switch(ch)
        {
            case 1: do{
                cout<<"\n 1. tea    - 10/-"

                cout<<"\n 5. Exit";
                cout<<"\n Enter choice..";
                cin>>subch;

                }while(subch!=5);
                break;
            case 2: do{
total_bill = total_bill + qty * 10; break;
                case 2: total_bill = total_bill + qty * 20; break;
                case 3: total_bill = total_bill + qty * 22; break;
                case 4: total_bill = total_bill + qty * 15; break;
                case 5: break;
                default: cout<<"\n Invalid choice. Enter 1..5";
            }

        }while(ch!=5);

        cout<<"Total Bill Amount = "<<total_bill;
        return 0;
    }
```

```
int i, num;
```

```
take num from user
```

```
Assignment: 3
```

```
int flag = 1;
while((i*i*i)<=num)
{
    if((i*i*i) == num)
    {
        flag = 0;
        break;
    }
    i++;
}
```

```
if(flag == 0)
    cout<<"Yes";
else
    cout<<"No";
```

```
Assignment 5:
```

```
INT_MAX
```

```
int num, rem, rev_no = 0;
cout<<"\n Enter a number..";
cin>>num;                                //432567

for( ; num>0 ; )
{
    rem = num % 10;                        //2

    if(rev_no > UINT_MAX / 10) return 0;
    rev_no = rev_no * 10 + rem;           // 7652

    num = num /10;                        //num =432
}
```

```
#include<iostream>
using namespace std;
```

```
int sum(int , int);    //function declaration / prototype / signature
```

```
int main()
{
    int num1, num2, res;
```

```
    num1 = 14;
    num2 = 24;

    res = sum(num1, num2);    //function call
    cout<<"Result = "<res;
    return 0;
}

int sum(int a, int b)
{
    retrun a+b;
}
```