**Question 1:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    double cel, far;

    cout << "Enter your temperature in Celsius: ";

    cin >> cel;

    far = (cel\*9)/5+32;

    cout << "Fahrenheit : " <<fixed << setprecision(2)<< far << endl;

    return 0;

}

**Question 2:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    double a, b, c;

    cout << "Input 3 angle values a, b, and c: ";

    cin >> a >> b >> c;

    if((b+c>a) && (c+a>b) && (a+b>c)){

        cout << "Triangle is valid!" << endl;

    } else{

        cout << "Triangle is not valid!" << endl;

    }

    return 0;

}

**Question 3:**

#include <bits/stdc++.h>

using namespace std;

int HCF(int a, int b);

int main()

{

    int a, b, rem, temp;

    cout << "Enter 2 values (a, b) for calculate the HCF: ";

    cin >> a >> b;

    if(a<b){

        a = a+b;

        b = a - b;

        a = a - b;

    }

    cout << "HCF of " << a << " and " << b << " = " << HCF(a, b);

    return 0;

}

int HCF(int a, int b)

{

    int temp, rem;

    while(b!=0){

        rem = a%b;

        if(rem != 0){

            temp = rem;

            b = b%rem;

        }else{

            temp = b;

            b = rem%b;

        }

    }

    return temp;

}

**Question 4:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    double fuel, distance, avgConsumption;

    cout << "Input total distance in km: ";

    cin >> distance;

    cout << "Input total fuel spent in liters: ";

    cin >> fuel;

    avgConsumption = distance/fuel;

    cout << "Average consumption (km/lt): " << fixed << setprecision(3) << avgConsumption;

    return 0;

}

**Question 5:**

#include <bits/stdc++.h>

using namespace std;

int main()

{

    int first, last;

    cout << "Input the first number of the pair: ";

    cin >> first;

    cout << "Input the second number of the pair: ";

    cin >> last;

    if (first < last)

    {

        cout << "The pair is in asscending order!" << endl;

    }

    else

    {

        cout << "The pair is in descending order!" << endl;

    }

    return 0;

}

**Question 6:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    int uid, unit;

    double amount;

    cin >> uid;

    cin >> unit;

    cout << "Customer IDNO:" << uid << endl;

    cout << "unit Consumed:" << unit << endl;

    if(unit>0 && unit<=199){

        cout << "Amount Charges: "<< fixed << setprecision(2) << unit\*1.20 << " taka" <<endl;

    }else if(unit>=200 && unit<400){

        cout << "Amount Charges: "<< fixed << setprecision(2) << unit\*1.50 << " taka" <<endl;

    }else if(unit>=400 && unit<600){

        cout << "Amount Charges: "<< fixed << setprecision(2) << unit\*1.80 << " taka" <<endl;

    }else if(unit>=600){

        cout << "Amount Charges: "<< fixed << setprecision(2) << unit\*2.0 << " taka" <<endl;

    }

    return 0;

}

**Question 7:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    int cen;

    cin >> cen;

    if(cen<0){

        cout << "Freezing weather" << endl;

    }else if(cen>=0 && cen<=10){

        cout << "Very Cold weather" << endl;

    }else if(cen>10 && cen<=20){

        cout << "Cold weather" << endl;

    }else if(cen>20 && cen<=30){

        cout << "Normal in Temp" << endl;

    }else if(cen>30 && cen<=40){

        cout << "It\'s Hot." << endl;

    }else{

        cout << "It\'s Very Hot." << endl;

    }

    return 0;

}

**Question 8:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    int basicSalary, grossSalary;

    cout << "Enter basic salary: ";

    cin >> basicSalary;

    if(basicSalary<=20000){

        grossSalary = basicSalary+150+750;

        cout << "Gross Salary = " << grossSalary << endl;

    }else if(basicSalary>=20001 && basicSalary<=40000){

        grossSalary = basicSalary+250+800;

        cout << "Gross Salary = " << grossSalary << endl;

    }else{

        grossSalary = basicSalary+350+900;

        cout << "Gross Salary = " << grossSalary << endl;

    }

    return 0;

}

**Question 9:**

#include <bits/stdc++.h>

using namespace std;

int main()

{

    int apple[] = {10, 15, 8, 12};

    sort(apple, apple + 4);

    cout << "Apple after sorting: " ;

    for (int i = 0; i < 4; ++i)

    {

        cout << apple[i] << " ";

    }

    cout << endl;

    return 0;

}

**Question 10:**

#include <bits/stdc++.h>

using namespace std;

int main()

{

    cout << "Enter the array size: ";

    int n;

    cin >> n;

    cout << "Enter the first array: ";

    int arr[n], arr2[n], add[n];

    for (auto i = 0; i < n; i++)

    {

        cin >> arr[i];

    }

    cout << "Enter the second array: ";

    for (auto i = 0; i < n; i++)

    {

        cin >> arr2[i];

    }

    cout << "Output: ";

    for (auto i = 0; i < n; i++)

    {

        add[i] = arr[i] + arr2[i];

        cout << add[i] << "\t";

    }

    cout << endl;

    return 0;

}

**Question 11:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    cout << "Enter a month name: ";

    int month;

    cin >> month;

    switch (month)

    {

    case 1:

        cout << "Januaray" <<endl;

        break;

    case 2:

        cout << "February" <<endl;

        break;

    case 3:

        cout << "March" <<endl;

        break;

    case 4:

        cout << "April" <<endl;

        break;

    case 5:

        cout << "May" <<endl;

        break;

    case 6:

        cout << "June" <<endl;

        break;

    case 7:

        cout << "July" <<endl;

        break;

    case 8:

        cout << "August" <<endl;

        break;

    case 9:

        cout << "September" <<endl;

        break;

    case 10:

        cout << "October" <<endl;

        break;

    case 11:

        cout << "November" <<endl;

        break;

    case 12:

        cout << "December" <<endl;

        break;

    default:

        cout << "Wrong information"<< endl;

        break;

    }

    return 0;

}

**Question 12:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    cout << "Enter a number to check whether this number equals the sum of cubes of its digits or not: ";

    long long int a, rem, sum=0, temp;

    cin >> a;

    temp = a;

    while(a!=0){

        rem = a%10;

        sum = sum + rem \* rem \* rem;

        a = a/10;

    }

    if(temp == sum){

        cout << "Yes, this number equals the sum of cubes of its digits. " << temp << " = " << sum << endl;

    }else{

        cout << "No, this number not equals the sum of cubes of its digits. " << temp << " = " << sum << endl;

    }

    return 0;

}

**Question 13:**

#include <bits/stdc++.h>

using namespace std;

int main(){

    int n;

    cout << "Enter the Last range for the multiplication table: ";

    cin >> n;

    for(auto i =2; i<=n; i++){

        for(auto j = 1; j<=10; j++){

            cout << i << " x " << j << " = " << i\*j << endl;

        }

        cout << "\n\n";

    }

    return 0;

}

**Question 14:**

#include <bits/stdc++.h>

using namespace std;

void Input(int a[5][5]);

void Print(int a[5][5]);

void Addition(int a[5][5], int b[5][5]);

void Subtraction(int a[5][5], int b[5][5]);

void Multiplication(int a[5][5], int b[5][5]);

void Transpose(int a[5][5]);

int main()

{

    int a[5][5], b[5][5], choice;

first:

    cout << "\nChoose the matrix operation," << endl;

    cout << "1. Addition" << endl;

    cout << "2. Subtraction" << endl;

    cout << "3. Multiplication" << endl;

    cout << "4. Transpose" << endl;

    cout << "5. Exit" << endl;

    cout << "Enter your choice: ";

    cin >> choice;

    switch (choice)

    {

    case 1:

        cout << "Enter matrix 1 value: " << endl;

        Input(a);

        cout << "Enter matrix 2 value: " << endl;

        Input(b);

        cout << "Print matrix 1 value: " << endl;

        Print(a);

        cout << "Print matrix 2 value: " << endl;

        Print(b);

        cout << "Addition of 2 matrix: " << endl;

        Addition(a, b);

        break;

    case 2:

        cout << "Enter matrix 1 value: " << endl;

        Input(a);

        cout << "Enter matrix 2 value: " << endl;

        Input(b);

        cout << "Print matrix 1 value: " << endl;

        Print(a);

        cout << "Print matrix 2 value: " << endl;

        Print(b);

        cout << "Subtraction of 2 matrix: " << endl;

        Subtraction(a, b);

        break;

    case 3:

        cout << "Enter matrix 1 value: " << endl;

        Input(a);

        cout << "Enter matrix 2 value: " << endl;

        Input(b);

        cout << "Print matrix 1 value: " << endl;

        Print(a);

        cout << "Print matrix 2 value: " << endl;

        Print(b);

        cout << "Multiplication of 2 matrix: " << endl;

        Multiplication(a, b);

        break;

    case 4:

        cout << "Enter matrix 1 value: " << endl;

        Input(a);

        cout << "Print matrix 1 value: " << endl;

        Print(a);

        cout << "Transpose of 1 matrix: " << endl;

        Transpose(a);

        break;

    case 5:

        exit(0);

    default:

        cout << "Invalid Input." << endl;

        cout << "Please enter the correct Input." << endl;

        break;

    }

    return 0;

}

void Input(int a[5][5])

{

    int i, j;

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            cin >> a[i][j];

        }

    }

}

void Print(int a[5][5])

{

    int i, j;

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            cout << a[i][j] << "\t";

        }

        cout << endl;

    }

}

void Addition(int a[5][5], int b[5][5])

{

    int i, j, c[5][5];

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            c[i][j] = a[i][j] + b[i][j];

            cout << c[i][j] << "\t";

        }

        cout << endl;

    }

}

void Subtraction(int a[5][5], int b[5][5])

{

    int i, j, c[5][5];

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            c[i][j] = a[i][j] - b[i][j];

            cout << c[i][j] << "\t";

        }

        cout << endl;

        ;

    }

}

void Multiplication(int a[5][5], int b[5][5])

{

    int i, j, k, sum = 0, c[5][5];

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            for (k = 0; k < 3; k++)

            {

                sum = sum + a[i][k] \* b[k][j];

            }

            c[i][j] = sum;

            cout << c[i][j] << "\t";

            sum = 0;

        }

        cout << endl;

    }

}

void Transpose(int a[5][5])

{

    int i, j;

    for (i = 0; i < 3; i++)

    {

        for (j = 0; j < 3; j++)

        {

            cout << a[j][i] << "\t";

        }

        cout << endl;

    }

}

**Question 15:**

#include <bits/stdc++.h>

using namespace std;

void teacherAddition(int \*listNumber, int listSize, int teacherNumber);

int main()

{

    int i, next, temp, s, n, f = 0;

    cout << "Enter the list size: " << endl;

    cin >> n;

    int lis[n];

    cout << "Enter the list value: " << endl;

    for (i = 1; i <= n; i++)

    {

        cin >> lis[i];

    }

    cout << "teacher is telling, the number is: ";

    cin >> s;

    teacherAddition(lis, n, s);

    return 0;

}

void teacherAddition(int \*listNumber, int listSize, int teacherNumber)

{

    int i, next, f = 0;

    for (i = 1; i <= listSize; i++)

    {

        for (next = i + 1; next <= listSize; next++)

        {

            if (teacherNumber == listNumber[i] + listNumber[next])

            {

                f++;

                cout << teacherNumber << " is addition of this " << listNumber[i] << " and " << listNumber[next] << " numbers." << endl;

            }

        }

        // if we get our result, so don't need to continue the outer loop also.

        if (f == 1)

        {

            break;

        }

    }

    if (f == 0)

    {

        cout << "Sir, there\'s no pair of numbers equal to your " << teacherNumber << " number." << endl;

    }

}