1) Write a C++ program to print your biodata?

```
/* Write a C++ Program to Print Your Biodata */
#include<iostream>
using namespace std;
int main()
{
    string fname,lname,department,branch;
    int rollNo;
    long long phNo;
    cout<<"====================BIODATA====================="<<endl;
    cout<<"Enter Your First Name: "<<endl;
    cin>>fname;
    cout<<"Enter Your Last Name : "<<endl;
    cin>>lname;
    cout<<"Enter Your Department Name :"<<endl;
    cin>>department;
    cout<<"Enter Your Branch Name :"<<endl;
    cin>>branch;
    cout<<"Enter Your Roll No : "<<endl;
    cin>>rollNo;
    cout<<"Enter Your Mobile Numbr : "<<endl;
    cin>>phNo;
    cout<<"====================Your BIODATA====================="<<endl;
    cout<<"Name       : "<<fname<<" "<<lname<<endl;
    cout<<"Department : "<<department<<endl;
    cout<<"Branch     : "<<branch<<endl;
    cout<<"Roll No    : "<<rollNo<<endl;
    cout<<"Mob. No    : "<<phNo<<endl;
    return 0;
}
```

OUTPUT

```
====================BIODATA=====================
Enter Your First Name:
ChandraShekhara
Enter Your Last Name :
Prasad
Enter Your Department Name :
CSEA
Enter Your Branch Name :
MCA
Enter Your Roll No :
19
Enter Your Mobile Numbr :
6372606392
====================Your BIODATA=====================
Name       : ChandraShekhara Prasad
Department : CSEA
Branch     : MCA
Roll No    : 19
Mob. No    : 6372606392
```

2) Write a C++ program to find simple interest?

```
/*Write a C++ Program to find Simple Interest*/
#include<iostream>
using namespace std;
int main()
{
    int principal,time,rate;
    float simpleInt;
    cout<<"Enter The Value of Principal : "<<endl;
    cin>>principal;
    cout<<"Enter The Time(in year) : " <<endl;
    cin>>time;
    cout<<"Enter The Rate of Interest : "<<endl;
    cin>>rate;
    simpleInt =(float)(principal * time * rate)/100;
    cout<<"Simple interest is : "<<simpleInt<<endl;
    return 0;
}
```

OUTPUT

```
Enter The Value of Principal :
1000
Enter The Time(in year) :
2
Enter The Rate of Interest :
200
Simple interest is : 4000
```

3)Write a C++ program for temperature conversion?

```
/* Write C++ Program to for Tempreture Convertion */
#include<iostream>
using namespace std;
int main()
{
    int a;
    float fahrenheit=0.0,celcius =0.0;
    cout<<"======================Tempreture Convertion======================"<<endl;
    cout<<"Enter :\n1. for Farhrenheit to Celcius :\n2. for Celcius to Fahrenheit :
"<<endl;
    cin>>a;
    if(a==1){
        cout<<"Enter The Value of Fahrenheit : "<<endl;
        cin>>fahrenheit;
        celcius = (fahrenheit - 32)*5/9;
        cout<<"Celcius : "<<celcius<<endl;
```

```
    }
    else if(a==2){
        cout<<"Enter The Value of Celcius : "<<endl;
        cin>>celcius;
        fahrenheit = (9*celcius/5)+32;
        cout<<"Fahrenheit : "<<fahrenheit<<endl;
    }
    else{
        cout<<"Enter a Valid Input....!"<<endl;
    }
    return 0;
}
```

Output

```
======================Tempreture Convertion======================
Enter :
1. for Farhrenheit to Celcius :
2. for Celcius to Fahrenheit :
2
Enter The Value of Celcius :
40
Fahrenheit : 104
```

---

4) Write a C++ program to find following without using looping(while do while for) and Decision (if else nested if else if ladder swich if) making

I. Sum of all digits of any 4 digit numbers

```
/* Program to find the Sum of all digits of any 4 digit number */
#include<iostream>
using namespace std;
int main()
{
    int a,n,sum=0;
    cout<<"Enter Any 4 digit Number : "<<endl;
    cin>>a;
    n = a;
    sum = sum + n % 10;
    n = n / 10;
    sum = sum + n % 10;
    n = n / 10;
    sum = sum + n % 10;
    n = n / 10;
    sum = sum + n % 10;
    cout<<"The Sum of all digits of "<<a<<" is : "<<sum<<endl;
    return 0;
}
```

Output

```
Enter Any 4 digit Number :
1234
The Sum of all digits of 1234 is : 10
```

II. find the face value and position value of any 4 digit number?

```
/* Program to find the face value and position value of any 4 digit number */
#include<iostream>
using namespace std;
int main()
{
    int n,fourth_place,third_place,second_place,unit_place;
    cout<<"Enter Any Four Digit Number : "<<endl;
    cin>>n;
    fourth_place = n /1000;
    n = n % 1000;               //here n = xxx
    third_place = n / 100;
    n = n % 100;                //here n = xx
    second_place = n / 10;
    n = n % 10;                 //here n = x
    unit_place = n;
    cout<<"=================================================="<<endl;
    cout<<"Position\tFace Value\tPosition Value"<<endl;
    cout<<"=================================================="<<endl;
    cout<<"Thousand :\t"<<fourth_place<<"\t\t"<<fourth_place * 1000<<endl;
    cout<<"Hundred  :\t"<<third_place<<"\t\t"<<third_place * 100<<endl;
    cout<<"Tenth    :\t"<<second_place<<"\t\t"<<second_place * 10<<endl;
    cout<<"Unit     :\t"<<unit_place<<"\t\t"<<unit_place<<endl;
    cout<<"=================================================="<<endl;
    return 0;
}
```

Output

```
Enter Any Four Digit Number :
1025
==================================================
Position        Face Value      Position Value
==================================================
Thousand :      1               1000
Hundred  :      0               0
Tenth    :      2               20
Unit     :      5               5
==================================================
```

III. Find the value available at position required by user it may be 10,100 or 1000?

```
/* Program to Find the value available at position required by user it may be 10,100 or 1000?*/
#include<iostream>
using namespace std;
int main()
{
    int choice,n,fourth_place,third_place,second_place,unit_place;
    cout<<"Enter The Any Four Digit Number : "<<endl;
    cin>>n;
    fourth_place = n /1000;
    n = n % 1000;
    third_place = n / 100;
    n = n % 100;
    second_place = n / 10;
    n = n % 10;
    unit_place = n;
    cout<<"Enter=>>>\n1-for 1000th place \n2-for 100th place\n3-for 10th place"<<endl;
    cin>>choice;
    (choice == 1)? (cout<<"1000th place value = "<<fourth_place*1000) : (choice == 2) ? (cout<<"100th Place value = "<<third_place * 100): (choice == 3)? (cout<<"10th place value = "<<second_place * 10): (cout<<"Invalid Input....!");
    return 0;
}
```

OUTPUT

```
Enter The Any Four Digit Number :
1425
Enter=>>>
1-for 1000th place
2-for 100th place
3-for 10th place
```

IV. Sum of product of consecutive digits of any 4 digit number? Supoose num=1234 then output= 4*3+3*2+2*1

```
/* Program to find Sum of product of consecutive digits of any 4 digit number? Supoose num=1234 then output= 4*3+3*2+2*1 */
```

```cpp
#include<iostream>
using namespace std;
int main()
{
    int a,n,fourth_place,third_place,second_place,unit_place,sum=0;
    cout<<"Enter Any Four digit Number : "<<endl;
    cin>>a;
    n=a;
    fourth_place = n / 1000;
    n = n % 1000;
    third_place = n / 100;
    n = n % 100;
    second_place = n / 10;
    n = n % 10;
    unit_place = n;

    sum = fourth_place * third_place;
    sum +=(third_place * second_place);
    sum +=(second_place * unit_place);
    cout<<"The Sum of Product Of "<<a<<" is : "<<sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any Four digit Number :
4512
The Sum of Product Of 4512 is : 27
```

V. find sum of product of corresponding digits of two any 4 digit number Such as n=1234 m=7896 output=6*4+9*3+8*2+7*1

```cpp
/* find sum of product of corresponding digits of two any 4 digit
number Such as n=1234 m=7896 output=6*4+9*3+8*2+7*1 */
#include <iostream>
using namespace std;
int main()
{
    int Num1,Num2,firstDig_1,firstDig_2,firstDig_3,firstDig_4;
    int SecondDig_1,SecondDig_2,SecondDig_3,SecondDig_4,sum=0;
    cout<<"Enter The First Four Digit Number : "<<endl;
    cin>>Num1;
    cout<<"Enter The Second Four Digit Number : "<<endl;
    cin>>Num2;
    //First Number digits....
    firstDig_1 = Num1 / 1000;
```

```
    firstDig_2 = (Num1 / 100) % 10;
    firstDig_3 = (Num1 / 10) % 10;
    firstDig_4 = Num1 % 10;
    //Second Number Digits....
    SecondDig_1 = Num2 / 1000;
    SecondDig_2 = (Num2 / 100) % 10;
    SecondDig_3 = (Num2 / 10) % 10;
    SecondDig_4 = Num2 % 10;
    sum = (firstDig_1 * SecondDig_1) + (firstDig_2 * SecondDig_2) + (firstDig_3 *
SecondDig_3) + (firstDig_4 * SecondDig_4);
    cout<<"Sum of Product of Corresponding Digits = "<<sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter The First Four Digit Number :
1245
Enter The Second Four Digit Number :
1222
Sum of Product of Corresponding Digits = 23
```

VI. find bitwise and , or , and xor of 2 nd and 4 th digit of any 4 digit number?

```
/* Write a program to find bitwise and, or, and xor of 2 nd and 4 th digit of any 4
digit number? */
#include<iostream>
using namespace std;
int main()
{
    int num,second_Num,fourth_Num,bit_And,bit_Or,bit_Xor;
    cout<<"Enter Any Four Digit Number : "<<endl;
    cin>>num;
    second_Num = (num / 10) % 10;
    fourth_Num = num / 1000;
    cout<<"Second Digit is : "<<second_Num<<endl;
    cout<<"Fourth Digit is : "<<fourth_Num<<endl;
    bit_And = second_Num & fourth_Num;
    bit_Or = second_Num | fourth_Num;
    bit_Xor = second_Num ^ fourth_Num;
    cout<<"Bitwise AND : "<<bit_And<<endl;
    cout<<"Bitwise OR  : "<<bit_Or<<endl;
    cout<<"Bitwise XOR : "<<bit_Xor<<endl;
    return 0;
}
```

Output

```
Enter Any Four Digit Number :
1234
Second Digit is : 3
Fourth Digit is : 1
Bitwise AND : 1
Bitwise OR  : 3
Bitwise XOR : 2
```

VII. Find left shit, right shift and zero fill of summation of all digits of any 4 digit number and it will be shifted by 3 rd digit of any 4 digit number?

```
/* Find left shit, right shift and zero fill of summation of all digits of any
4 digit number and it will be shifted by 3 rd digit of any 4 digit number? */
#include <iostream>
using namespace std;
int main() {
    int num,fourth_place,third_place,second_place,unit_place;
    int sum,shiftAmount,leftShiftResult,rightShiftResult,zeroFillResult;
    cout << "Enter a 4-digit number: ";
    cin >> num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = (num / 10) % 10;
    unit_place = num % 10;

    sum = fourth_place + third_place + second_place + unit_place;

    shiftAmount = second_place;
    leftShiftResult = sum << shiftAmount;
    rightShiftResult = sum >> shiftAmount;
    zeroFillResult = static_cast<unsigned int>(sum) >> shiftAmount;

    cout << "Sum of all digits: " << sum <<endl;
    cout << "Left shift by " << shiftAmount << ": " << leftShiftResult <<endl;
    cout << "Right shift by " << shiftAmount << ": " << rightShiftResult <<endl;
    cout << "Zero fill right shift by " << shiftAmount << ": " << zeroFillResult <<endl;

    return 0;
}
```

OUTPUT

```
Enter a 4-digit number: 1425
Sum of all digits: 12
Left shift by 2: 48
Right shift by 2: 3
Zero fill right shift by 2: 3
```

5. Write a C++ program to find following using conditional operator and without using looping and decision making ?

a) Sum of all even digits of any 4 digit number

```
/* Write a Program to find Sum of all even digits of any 4 digit number */
#include<iostream>
using namespace std;
int main()
{
    int num,fourth_place,third_place,second_place,unit_place,sum1,sum2,sum3,sum4,Sum =
0;
    cout<<"Enter Any Four Digit Number : "<<endl;
    cin>>num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = ( num / 10) % 10;
    unit_place = num % 10;

    sum1 = fourth_place % 2 == 0 ? fourth_place : 0;
    sum2 = third_place % 2 == 0 ? third_place : 0;
    sum3 = second_place % 2 == 0 ? second_place : 0;
    sum4 = unit_place % 2 == 0 ? unit_place : 0;
    Sum = sum1 + sum2 + sum3 + sum4;
    cout<<"Sum of All Even Digits = "<<Sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any Four Digit Number :
1236
Sum of All Even Digits = 8
```

b) Sum of all odd digits of any 4 digit number

```
/* Write a Program to find Sum of all odd digits of any 4 digit number */
#include<iostream>
using namespace std;
int main()
```

```
{
    int num,fourth_place,third_place,second_place,unit_place,sum1,sum2,sum3,sum4,Sum =
0;
    cout<<"Enter Any Four Digit Number : "<<endl;
    cin>>num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = ( num / 10) % 10;
    unit_place = num % 10;

    sum1 = fourth_place % 2 != 0 ? fourth_place : 0;
    sum2 = third_place % 2 != 0 ? third_place : 0;
    sum3 = second_place % 2 != 0 ? second_place : 0;
    sum4 = unit_place % 2 != 0 ? unit_place : 0;
    Sum = sum1 + sum2 + sum3 + sum4;
    cout<<"Sum of All Even Digits = "<<Sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any Four Digit Number :
1254
Sum of All Even Digits = 6
```

c) Difference between average of all even digits except divisible by 4 and avearge of all odd digits except divisble by 3 of any 4 digit number

```
/* Difference between average of all even digits except divisible by 4 and
avearge of all odd digits except divisble by 3 of any 4 digit number */
#include<iostream>
using namespace std;
int main()
{
    int
num,fourth_place,third_place,second_place,unit_place,count_Even=0,count_Odd=0,Total=0;
    int Sum_Even,Sum_Odd;
    float Avg_Even,Avg_Odd;
    cout<<"Enter Any Four Digit Number : "<<endl;
    cin>>num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = ( num / 10) % 10;
    unit_place = num % 10;
    //Sum of all Even Number.....
    Sum_Even = (fourth_place % 2 == 0 && fourth_place % 4 != 0 ? fourth_place : 0)
    +(third_place % 2 == 0 && third_place % 4 != 0 ? third_place : 0)
    +(second_place % 2 == 0 && second_place % 4 != 0 ? second_place : 0)
```

```
    +(unit_place % 2 == 0 && unit_place % 4 != 0 ? unit_place : 0);
    //Even Counter.....
    count_Even = (fourth_place % 2 == 0 && fourth_place % 4 != 0 ? 1 : 0)
    +(third_place % 2 == 0 && third_place % 4 != 0 ? 1 : 0)
    +(second_place % 2 == 0 && second_place % 4 != 0 ? 1 : 0)
    +(unit_place % 2 == 0 && unit_place % 4 != 0 ? 1 : 0);
    //Sum of all Odd Number....
    Sum_Odd = (fourth_place % 2 != 0 && fourth_place % 4 != 0 ? fourth_place : 0)
    +(third_place % 2 != 0 && third_place % 4 != 0 ? third_place : 0)
    +(second_place % 2 != 0 && second_place % 4 != 0 ? second_place : 0)
    +(unit_place % 2 != 0 && unit_place % 4 != 0 ? unit_place : 0);
    //Odd Counter.....
    count_Odd = (fourth_place % 2 != 0 && fourth_place % 3 != 0 ? 1 : 0)
    +(third_place % 2 != 0 && third_place % 3 != 0 ? 1 : 0)
    +(second_place % 2 != 0 && second_place % 3 != 0 ? 1 : 0)
    +(unit_place % 2 != 0 && unit_place % 3 != 0 ? 1 : 0);
    //Average of Even Digits.....
    Avg_Even = (float)(Sum_Even / count_Even);
    Avg_Odd = (float)(Sum_Odd / count_Odd);
    Total = Avg_Even - Avg_Odd;
    cout<<"Difference is = "<<Total<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any Four Digit Number :
3652
Difference is = -4
```

d) Sum of product of consecutive even digits of any 4 digit number? Supoose num=1624 then output= 4*2+2*6

```
/* Sum of product of consecutive even digits of any 4 digit number? Supoose
num=1624 then output= 4*2+2*6 */
#include <iostream>
using namespace std;
int main()
{
    int num,fourth_place,third_place,second_place,unit_place,sum=0;
    cout<<"Enter Any four Digit Number : "<<endl;
    cin>>num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = ( num / 10) % 10;
    unit_place = num % 10;
```

```
    sum = ((second_place % 2 == 0 && unit_place % 2 == 0) ? (second_place * unit_place)
: 0);
    sum += (third_place % 2 == 0 && second_place % 2 == 0) ? (third_place *
second_place) : 0;
    cout<<"Sum of product of consecutive even digits: "<<sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any four Digit Number :
1245
Sum of product of consecutive even digits: 8
```

e) Sum of product of consecutive odd digits of any 4 digit number? Supoose num=1356 then output= 5*3+ 3*1

```
/* Sum of product of consecutive odd digits of any 4 digit number? Supoose
num=1356 then output= 5*3+ 3*1 */
#include <iostream>
using namespace std;
int main()
{
    int num,fourth_place,third_place,second_place,unit_place,sum=0;
    cout<<"Enter Any four Digit Number : "<<endl;
    cin>>num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = ( num / 10) % 10;
    unit_place = num % 10;
    sum = ((second_place % 2 != 0 && unit_place % 2 != 0) ? (second_place * unit_place)
: 0);
    sum += (third_place % 2 != 0 && second_place % 2 != 0) ? (third_place *
second_place) : 0;
    cout<<"Sum of product of consecutive even digits: "<<sum<<endl;
    return 0;
}
```

OUTPUT

```
Enter Any four Digit Number :
4512
Sum of product of consecutive even digits: 5
```

f) Difference between Sum of product of consecutive even digits except 2 and 6 and Sum of product of consecutive odd digits except 3 and 7 of any 4 digit number

```
/* Difference between Sum of product of consecutive even digits except 2
and 6 and Sum of product of consecutive odd digits except 3 and 7 of any 4 digit
number */
#include <iostream>
using namespace std;
int main()
{
    int num,fourth_place,third_place,second_place,unit_place;
    int sumEven,sumOdd,difference;
    cout << "Enter Any Four Digit Number : "<<endl;
    cin >> num;
    fourth_place = num / 1000;
    third_place = (num / 100) % 10;
    second_place = (num / 10) % 10;
    unit_place = num % 10;
    sumEven = ((second_place != 2 && second_place != 6) && (unit_place != 2 &&
unit_place != 6)) ? (second_place * unit_place) : 0;
    sumOdd = ((second_place != 3 && second_place != 7) && (unit_place != 3 && unit_place
!= 7)) ? (second_place * unit_place) : 0;
    difference = sumEven - sumOdd;
    cout<< "Sum of product of consecutive even digits : " <<sumEven<<endl;
    cout<< "Sum of product of consecutive odd digits  : " <<sumOdd<<endl;
    cout<< "Difference is : " <<difference<<endl;

    return 0;
}
```

OUTPUT

```
Enter Any Four Digit Number :
1245
Sum of product of consecutive even digits : 20
Sum of product of consecutive odd digits  : 20
Difference is : 0
```

g) Write a C++ program to find sum of product of corresponding even digits of first any digit number and corresponding odd digit of any 4 digit number Such as n=1234 m=4567 output=4*7+2*5

```
/*Write a C++ program to find sum of product of corresponding even digits of
first any digit number and corresponding odd digit of any 4 digit number Such as
n=1234 m=4567 output=4*7+2*5 */
#include <iostream>
using namespace std;
int main() {
```

```
    int num1, num2,thousands1,hundreds1,tens1,units1,thousands2,hundreds2,tens2,units2;
    cout << "Enter the first 4-digit number: "<<endl;
    cin >> num1;
    cout << "Enter the second 4-digit number: "<<endl;
    cin >> num2;

    thousands1 = num1 / 1000;
    hundreds1 = (num1 / 100) % 10;
    tens1 = (num1 / 10) % 10;
    units1 = num1 % 10;

    thousands2 = num2 / 1000;
    hundreds2 = (num2 / 100) % 10;
    tens2 = (num2 / 10) % 10;
    units2 = num2 % 10;

    int sum = ((tens1 % 2 == 0 && units2 % 2 != 0) ? (tens1 * units2) : 0) +
              ((units1 % 2 == 0 && tens2 % 2 != 0) ? (units1 * tens2) : 0);
    cout << "Sum of product of corresponding even and odd digits: " << sum <<endl;

    return 0;
}
```

OUTPUT

```
Enter the first 4-digit number:
1456
Enter the second 4-digit number:
5412
Sum of product of corresponding even and odd digits: 6
```

6. Write a C++ program to find sum and carry of any 2 numbers following approach and bitwise operator ?

a) Half Adder Circuit

```
/* Write a C++ program to find sum and carry of any 2 numbers following
approach and bitwise operator ?
a) Half Adder Circuit */
#include <iostream>
using namespace std;
int main()
{
    int num1, num2;
    cout << "Enter the first number: "<<endl;
    cin >> num1;
    cout << "Enter the second number: "<<endl;
```

```
    cin >> num2;
    int sum = num1 ^ num2;
    int carry = num1 & num2;

    cout << "Sum using Half Adder: " << sum <<endl;
    cout << "Carry using Half Adder: " << carry <<endl;
    return 0;
}
```

OUTPUT

```
Enter the first number:
12
Enter the second number:
35
Sum using Half Adder: 47
Carry using Half Adder: 0
```

b) Full Adder Circuit

```
/* Full Adder Circuit */
#include <iostream>
using namespace std;
int main()
{
    int num1, num2;
    int sum, carry1, carry2;
    cout << "Enter the first number: "<<endl;
    cin >> num1;
    cout << "Enter the second number: "<<endl;
    cin >> num2;
    sum = num1 ^ num2;
    carry1 = num1 & num2;

    sum = sum ^ carry1;
    carry2 = (num1 | num2) & carry1;

    cout << "Sum using Full Adder: " << sum <<endl;
    cout << "Carry using Full Adder: " << carry2 <<endl;

    return 0;
}
```

OUTPUT

```
Enter the first number:
10
Enter the second number:
50
Sum using Full Adder: 58
Carry using Full Adder: 2
```