Operators

Question#1

```
#include<iostream>
using namespace std;
int main(){
    int dollor,rupees;
    cout<<"enetr the dollor ";

    cin>>dollor;
    rupees=dollor*152;
    cout<<"rupees="<<rupees;
    return 0;
}
```

```
enetr the dollor 2
rupees=304
--------------------------------
```

Question#2

```
#include<iostream>
using namespace std;
int main(){
    float dollor,rupees;
    cout<<"enetr the rupees ";

    cin>>rupees;
    dollor=rupees/152;
    cout<<"dollor="<<dollor;
    return 0;
}
```

```
enetr the rupees 234
dollor=1.53947
--------------------------------
```

Question#3

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

int main()
{
    float fahrenheit, celsius;

    cout << "Enter the temperature in Celsius : ";
    cin >> celsius;
    fahrenheit = (celsius * 9.0) / 5.0 + 32;
    cout << "The temperature in Celsius    : " << celsius << endl;
    cout << "The temperature in Fahrenheit : " << fahrenheit << endl;
    return 0;
}
```

```
Enter the temperature in Celsius : 38
The temperature in Celsius    : 38
The temperature in Fahrenheit : 100.4
```

Conditional Statements

If else

Question# 1

```cpp
#include<iostream>
using namespace std;
int main(){
    int x;
    cout<<"enter the value of x ";
    cin>>x;
    if(x>0){
        cout<<x<<" is positive number ";
    }
    else {
        cout<<x<<" is negative num ";
    }
    return 0;
}
```

```
enter the value of x 3
3 is positive number
--------------------------------
```

```
enter the value of x -5
-5 is negative num
--------------------------------
```

Question#2

onverter dollor to rupees.cpp | Untitled2 | conver

```cpp
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"enter the num  ";
    cin>>num;
    if (num%2==0)
    cout<<num<<" is even";

    else

    cout<<num<<" is odd";
    return 0;
}
```

```
enter the num  24
24 is even
------------------------
```

```
enter the num  23
23 is odd
--------------------------
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int year;
    cout<<"enter the year ";
    cin>>year;
    if(year%4==0) {
        cout<<"its a leap year ";
    }
    else if (year%400==0){
        cout<<"its a leapyear";
    }
    else{
        cout<<"its not a leap year";
    }
}
```

```
enter the year 2020
its a leap year
```

```
enter the year 2023
its not a leap year
```

Question# 4

```
#include<iostream>
using namespace std;
int main(){
    int num1,num2;
    cout<<"enter the num1 ";
    cin>>num1;
    cout<<"enter the num2 ";
    cin>>num2;
    if(num1>num2){

    cout<<"larger num is "<<num1<<" between "<<num1<<"and"<<num2;
    }
    else
    cout<<"larger num is "<<num2<<" between "<<num1<<" and "<<num2;
    return 0;

}
```

```
enter the num1 6
enter the num2 9
larger num is 9 between 6 and 9
```

if-else-if else

Question@#1

```cpp
#include<iostream>
using namespace std;
int main(){
    int x;
    cout<<"enter the value of x ";
    cin>>x;
    if(x>0){
        cout<<x<<" is positive number ";
    }
    else if(x=0){
        cout<<x<<" is nuetral number ";
    }
    else {
        cout<<x<<" is negative num ";
    }
    return 0;
}
```

```
enter the value of x 3
3 is positive number
----------------------------
```

```
enter the value of x -5
-5 is negative num
-----------------------------
```

```
enter the value of x 0
0 is nuetral  num
----------------------------
```

Question#4

```cpp
#include<iostream>
using namespace std;
int main(){
    int num1,num2;
    char operataor;
    cout<<"enter the number1                \t";
    cin>>num1;
    cout<<"enter the number2                \t";
    cin>>num2;
    cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
    if(operataor=='+'){
        cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
    }
    else if(operataor=='-'){
            cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;
    }
    else if(operataor=='*'){
    cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;    }
    else{
    cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;    }
    return 0;

}
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           +
3 + 4= 7

--------------------------------
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           -
3 - 4= -1

--------------------------------
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           *
3 * 4= 12

--------------------------------
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int percentage;
    cout<<"enter the percentage ";
    cin>>percentage;

    if(percentage>90)
    cout<<"A+";
    else if(percentage>80)
    cout<<"A";
    else if(percentage>70)
    cout<<"B";
    else if(percentage>60)
    cout<<"c";
    else if(percentage>50)
    cout<<"D";
    else
    cout<<"F";
    return 0;
}
```

```
enter the percentage 94
A+
------------------------------
```

```
enter the percentage 68
c
------------------------------
```

```
enter the percentage 75
B
--------------------------
```

Question#2

```cpp
#include <iostream>
using namespace std;
int main()
{
    int tmp;

    cout<<"Input days temperature : ";
    cin>>tmp;
   if(tmp<0)
            cout<<"Freezing weather.\n";
   else if(tmp<10)
            cout<<"Very cold weather.\n";
            else if(tmp<20)
                    cout<<"Cold weather.\n";
                else if(tmp<30)
                        cout<<"Normal in temp.\n";
                    else if(tmp<40)
                            cout<<"Its Hot.\n";
                        else
                            cout<<"Its very hot.\n";

}
```

```
Input days temperature : 4
Very cold weather.
```

Conditional Operator (?:)

Question#5

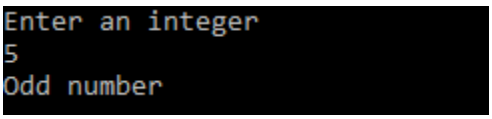
```cpp
#include <iostream>
using namespace std;

int main()
{
    int a;

    cout<<"Enter an integer number\n";
    cin>>a;

    (a > 0) ?
    cout<< "is positive\n"<< a :
    ( (a < 0) ?
      cout<<" is Negative\n"<<a:
      cout<<"%d is Zero\n"<<a
    );

    return 0;
}
```

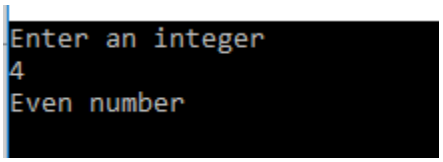
```
Enter an integer number
6
is positive
6
```

```
Enter an integer number
-2
 is Negative
-2
--------------------------------
```

Question#6

```cpp
#include<iostream>
using namespace std;
main()
{
int n;
cout<<"Enter an integer\n";
cin>>n;
n%2 == 0 ? cout<<"Even number\n" : cout<<"Odd number\n";
return 0;}
```





Switch Statement

Question#1

```cpp
#include<iostream>
using namespace std;
int main(){
    int num1,num2,result;
    cout<<"enter the value of num1: \t ";
    cin>>num1;
    cout<<"enter the  value of num2:  \t";
    cin>>num2;
char operataor;
cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
    switch(operataor){
        case('+'):
        cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
        break;
        case('-'):
        cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;

        break;
        case('*'):
        cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;
        break;
        case('/'):
            cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;
        break;

    }
    return 0;
}
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           +
3 + 4= 7


--------------------------------
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           -
3 - 4= -1


```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           *
3 * 4= 12


--------------------------------
```

Queztion#2

```cpp
#include<iostream>
using namespace std;
int main(){
    int num1,num2,result;
    cout<<"enter the value of num1: \t ";
    cin>>num1;
    cout<<"enter the  value of num2:  \t";
    cin>>num2;
char operataor;
cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
    switch(operataor){
        case('+'):
        cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
        break;
        case('-'):
        cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;

        break;
        case('*'):
        cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;
        break;
        case('/'):
            cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;
        break;
```

```cpp
    }
    return 0;
}
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           +
3 + 4= 7

--------------------------------
```

```
enter the number1                        3
enter the number2                        4
enter the operator(+,-,*,/)  :            -
3 - 4= -1
```

```
enter the number1                        3
enter the number2                        4
enter the operator(+,-,*,/)  :            *
3 * 4= 12

--------------------------------
```

For loops

Question#1

```cpp
#include<iostream>
using namespace std;
int main(){
    int num,a,n;
    cout<<"eneter the num ";
    cin>>num;
    a=num;
    n=0;
    for(int i=0;i<=a;i++){
        cout<<"the number are "<<i<<endl; //cout<<n<<endl;
        n=n+1;


    }
    return 0;

}
```

```
eneter the num 10
the number are 0
the number are 1
the number are 2
the number are 3
the number are 4
the number are 5
the number are 6
the number are 7
the number are 8
the number are 9
the number are 10
```

Question#2

```cpp
#include<iostream>
using namespace std;
int main(){
    for(int i=0;i<10;i=i+2){
        cout<<"even numbers by loop : "<<i<<endl;
    }
    return 0;
}
```

```
even numbers by loop : 0
even numbers by loop : 2
even numbers by loop : 4
even numbers by loop : 6
even numbers by loop : 8
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int num;
    cout<<"enter the Number ";
    cin>>num;
    for(int i=1;i<=10;i++){
        cout<<num<<"x "<<i<<"= "<<num*i<<endl;
    }
    return 0;
}
```

```
enter the Number 3
3x 1= 3
3x 2= 6
3x 3= 9
3x 4= 12
3x 5= 15
3x 6= 18
3x 7= 21
3x 8= 24
3x 9= 27
3x 10= 30
```

Question#4

```cpp
#include<iostream>
using namespace std;
int main(){
    int i;
    int fac=1;
    for(int i=0;i<5;i++){

        fac++;
                    cout<<"fac of 4 is"<<fac*i<<endl;

    }

}
```

```
fac of 4 is24

--------------------------
```

While loop

Question # 1

```cpp
#include<iostream>
using namespace std;
int main(){
    int num=0;
    int n;
    cout<<"enetr the number where you want to print out num ";
    cin>>n;
    while(num<n){
        num=num+1;
        cout<<num<<endl;
    }
}
```

```
enetr the number where you want to print out num 7
1
2
3
4
5
6
7

--------------------------------
Process exited after 1.78 seconds with return value 0
Press any key to continue . . .
```

Question# 2

```
#include<iostream>
using namespace std;
int main(){
    int num=0;
    int n;
    cout<<"enter the num ";
    cin>>n;
    while(n>num){
        num=num+2;
        cout<<num<<endl;
    }
}
```

```
enter the num 10
2
4
6
8
10
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int num;
    int table;
    cout<<"enter the num og which you want to make table of ";
    cin>>num;
    for(int i=1;i<=10;i++){
        table=i*num;
        cout<<table<<endl;
    }
    return 0;
}
```

```
enter the num og which you want to make table of 2
2
4
6
8
10
12
14
16
18
20

--------------------------------
```

Question#4

```cpp
#include<iostream>
using namespace std;
int main(){
    int num;
    int fac=1;
    cout<<"eneter the num " ;
    cin>>num;
    while(num>1){
        fac=fac*num;
    }
    cout<<"Fac of "<<num<<"is "<<fac;
    return 0;
}
```

```
eneter the num 4
factorial of 4is 24
------------------------
```

Question#5

```
#include<iostream>
using namespace std;
int main(){
    int num1,num2;
    char operataor;
    cout<<"enter the number1                \t";
    cin>>num1;
    cout<<"enter the number2                \t";
    cin>>num2;
    cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
    if(operataor=='+'){
        cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
    }
    else if(operataor=='-'){
            cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;
    }
    else if(operataor=='*'){
    cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;    }
    else{
    cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;    }
    char choice;

    cout<<"do you want to do another calculation(yes/no)?";
    cin>>choice;

    while(choice=='y'){
            int num1,num2;
    char operataor;
    cout<<"enter the number1                \t";
    cin>>num1;
    cout<<"enter the number2                \t";
    cin>>num2;
    cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
```

```
if(operataor=='+'){
    cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
}
else if(operataor=='-'){
        cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;
}
else if(operataor=='*'){
cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;    }
else{
cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;    }
char choice;

cout<<"do you want to do another calculation(yes/no)?";
cin>>choice;

while(choice=='y'){
        int num1,num2;
char operataor;
cout<<"enter the number1                \t";
cin>>num1;
cout<<"enter the number2                \t";
cin>>num2;
cout<<"enter the operator(+,-,*,/)  :   \t ";
cin>>operataor;
if(operataor=='+'){
    cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
}
else if(operataor=='-'){
        cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;
}
else if(operataor=='*'){
cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;    }
else{
cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;    }
}

return 0;
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           +
3 + 4= 7
do you want to do another calculation(yes/no)?y
enter the number1                       3
enter the number2                       2
enter the operator(+,-,*,/)  :           +
3 + 2= 5
enter the number1
```

DO While

Question#1

```
#include<iostream>
using namespace std;
int main(){
    int i=0;
    do{
        cout<<i<<endl;
        i++;
    }
    while(i<=10);

    return 0;
}
```

```
0
1
2
3
4
5
6
7
8
9
10
```

Question#2

```
#include<iostream>
using namespace std;
int main(){
    int i=0;
    do{
        cout<<i<<endl;
        i=i+2;
    }
    while(i<=10);

    return 0;
}
```

```
0
2
4
6
8
10
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int i=0;
    int num;

    do{
        cout<<"enetr the num ";
        cin>>num;
        cout<<i<<endl;
        i=i*num;
    }
    while(i<=10);

    return 0;
}
```

```
enter the Number 2
2x 1= 2
2x 2= 4
2x 3= 6
2x 4= 8
2x 5= 10
2x 6= 12
2x 7= 14
2x 8= 16
2x 9= 18
2x 10= 20
```

Question#4

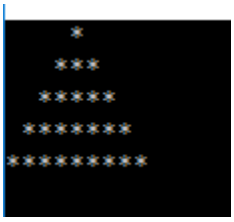
```cpp
#include<iostream>
using namespace std;
int main(){
    int choice;
    int num1,num2;
    char operataor;
    cout<<"enter the number1                \t";
    cin>>num1;
    cout<<"enter the number2                \t";
    cin>>num2;
    cout<<"enter the operator(+,-,*,/)  :   \t ";
    cin>>operataor;
    do{


    if(operataor=='+'){
        cout<< num1<<" + "<<num2<<"= "<<num1+num2<<endl;
    }
    else if(operataor=='-'){
            cout<< num1<<" - "<<num2<<"= "<<num1-num2<<endl;
    }
    else if(operataor=='*'){
    cout<< num1<<" * "<<num2<<"= "<<num1*num2<<endl;    }
    else{
    cout<< num1<<" / "<<num2<<"= "<<num1/num2<<endl;    }
    char choice;

    cout<<"do you want to do another calculation(yes/no)?";
    cin>>choice;}
    while(choice='y');
    return 0;
}
```

```
enter the number1                       3
enter the number2                       4
enter the operator(+,-,*,/)  :           +
3 + 4= 7
do you want to do another calculation(yes/no)?y
enter the number1                       3
enter the number2                       5
enter the operator(+,-,*,/)  :           -
3 - 5= -2
```

NESTED LOOPS

Question#3

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

int main()
{
    int i,j,k;
    for(i=1;i<=5;i++)
    {
        for(j=5;j>i;j--)
            cout<<' ';
        for(k=1;k<2*i;k++)
            cout<<'*';
        cout<<endl;
    }


    return 0;
}
```



Question#1

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

int main()
{
    int i,j,k;
    for(i=1;i<=5;i++)
    {
        for(j=5;j>i;j--)
            cout<<"*";

        cout<<endl;
    }


    return 0;
}
```

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

Question#2

```cpp
#include <iostream>

using namespace std;

int main()
{
    int i, j, rows;
    cout << "\n\n Display the pattern using digits with right justified:\n";
    cout << "------------------------------------------------------------\n";
    cout << " Input number of rows: ";
    cin >> rows;
    for (i = rows; i >= 1; i--)
    {
        for (j = 5; j <= rows - i; j--)
            cout<<" ";
        for (j = 1; j <= i; j++)
            cout << j;
        cout << endl;
    }
}
```

```
 Display the pattern using digits with right justified:
------------------------------------------------------------
 Input number of rows: 5
12345
1234
123
12
1

--------------------------------
Process exited after 1.969 seconds with return value 0
```

1-D ArraY

```
#include<iostream>
using namespace std;
int main()
{
  int first[20], second[20], sum[20], c, n;

  cout << "Enter the number of elements in the array ";
  cin >> n;

  cout << "Enter elements of first array" << endl;

  for (c = 0; c < n; c++)
    cin >> first[c];

  cout << "Enter elements of second array" << endl;

  for (c = 0; c < n; c++)
    cin >> second[c];

  cout << "Sum of elements of the arrays:" << endl;

  for (c = 0; c < n; c++) {
    sum[c] = first[c] + second[c];
    cout << sum[c] << endl;
  }
  return 0;
}
```

```
Enter the number of elements in the array 3
Enter elements of first array
2
1
3
Enter elements of second array
5
4
3
Sum of elements of the arrays:
7
5
6
```

Question#4&5

```cpp
#include<iostream>
using namespace std;
int main(){
    int arr[3]={1,2,3};
    int max=arr[0];
    int min=arr[0];
    for(int i=0;i<3;i++){
        if(arr[i]>max){

        max=arr[i];}

        if(arr[i]<min){

        //max=arr[i];
        min=arr[i];}
    }
    cout<<"max= "<<max<<endl;
    cout<<"min= "<<min;
}
```

```
max= 3
min= 1
```

Question#3

```cpp
#include<iostream>
 #include<cstdlib>
  #include <ctime>
 using namespace std;

 int main()
 {
    int n,m,size,arr1[1000],arr2[1000],arr3[1000],range;
     cout<<"Enter the size of arrays: ";
     cin >> size;
     cout<<"Enter the ranges of numbers which you wants: \n";
     cin >> range;
    srand(time(0));
     for(int i=0;i<size;i++)
     {
         n = rand() % range + 1;
         arr1[i]=n;
     }
    for(int i=0;i<size;i++)
     {
        m = rand() % range + 1;
         arr2[i]=m;
     }
     for(int i=0;i<size;i++)
    {
        arr3[i]=arr1[i]+arr2[i];
     }
     //Dispalying arrays
     cout<<"Array1: \n";
     for(int i=0;i<size;i++)
         {
    cout<<arr1[i]<<" ";
     }

     cout<<"\n";
     cout<<"Array2: \n";



     for(int i=0;i<size;i++)
```

```cpp
    cout<<arr2[i]<<" ";
  }     cout<<"\n";
 cout<<"Sum of arrays: \n";
  for(int i=0;i<size;i++)
  {
    cout<<arr3[i]<<" ";
  }
  cout<<"\n";
     return 0;
      }
```

```
Enter the size of arrays: 23
Enter the ranges of numbers which you wants:
12
Array1:
9 11 4 3 7 8 9 6 10 12 4 7 8 6 7 2 10 5 1 9 11 3 10
Array2:
1 12 8 11 12 5 7 7 1 2 12 2 9 7 11 4 12 5 12 2 7 10 12
Sum of arrays:
10 23 12 14 19 13 16 13 11 14 16 9 17 13 18 6 22 10 13 11 18 13 22

--------------------------------
Process exited after 1.956 seconds with return value 0
Press any key to continue . . .
```

2D Arrays

Question#2

```cpp
#include<iostream>
using namespace std;
int main(){
    int arr[2][2]={
    {2,5},
    {6,23}

};

int max=arr[0][0];
int min=arr[0][0];
for(int i=0;i<2;i++){
    for(int j=0;j<2;j++){
        if(arr[i][j]>max){
            max=arr[i][j];
        }
        if(arr[i][j]<min){
            min=arr[i][j];
        }

    }

}
    cout<<"max= "<<max<<endl;
    cout<<"min="<<min;

}
```

```
max= 23
min=2
--------------------------------
```

Question#3

```cpp
#include<iostream>
using namespace std;
int main(){
    int arr[2][2]={
    {2,433},
    {54,9}};
for(int i=0;i<2;i++){
    for(int j=0;j<2;j++){
        cout<<"arr["<<i<<"]["<<j<<"]= "<<arr[i][j]<<endl;
    }
}
return 0;



}
```

```
arr[0][0]= 2
arr[0][1]= 433
arr[1][0]= 54
arr[1][1]= 9

--------------------------------
```

Question#1

```cpp
#include<iostream>
#include<cstdlib>
 #include <ctime>
 using namespace std;

 int main()
{
    int r,c,myarr[100][100];
     int range,n;
     cout<<"Enter rows of array: ";
     cin >> r;
     cout<<"Enter columns of array: ";
     cin >> c;
     cout<<"Enter the range to genrate the nums: ";
     cin >> range;
     srand(time(0));
     //intilizing arrays
     for(int rows=0;rows<r;rows++)
     {
         for(int col=0;col<c;col++)
         {
             myarr[rows][col]=rand() % range + 1;
         }
     }
     //Displaying the array
     for(int rows=0;rows<r;rows++)
     {
         for(int col=0;col<c;col++)
         {
             cout<<myarr[rows][col]<<" ";
         }
         cout<<"\n";
     }

    return 0;
}
```

```
Enter rows of array: 1
Enter columns of array: 2
Enter the range to genrate the nums: 2
1 1

--------------------------------
```

Question#4

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

int main()
{
    int r, c, a[100][100], b[100][100], sum[100][100], i, j;

    cout << "Enter number of rows (between 1 and 100): ";
    cin >> r;

    cout << "Enter number of columns (between 1 and 100): ";
    cin >> c;

    cout << endl << "Enter elements of 1st matrix: " << endl;

    // Storing elements of first matrix entered by user.
    for(i = 0; i < r; ++i)
       for(j = 0; j < c; ++j)
       {
          cout << "Enter element a" << i + 1 << j + 1 << " : ";
          cin >> a[i][j];
       }

    // Storing elements of second matrix entered by user.
    cout << endl << "Enter elements of 2nd matrix: " << endl;
    for(i = 0; i < r; ++i)
       for(j = 0; j < c; ++j)
       {
          cout << "Enter element b" << i + 1 << j + 1 << " : ";
          cin >> b[i][j];
       }

    // Adding Two matrices
    for(i = 0; i < r; ++i)
        for(j = 0; j < c; ++j)
            sum[i][j] = a[i][j] + b[i][j];

    // Displaying the resultant sum matrix.
    cout << endl << "Sum of two matrix is: " << endl;
    for(i = 0; i < r; ++i)
        for(j = 0; j < c; ++j)
        {
```

```cpp
for(i = 0; i < r; ++i)
    for(j = 0; j < c; ++j)
    {
        cout << sum[i][j] << "
        if(j == c - 1)
            cout << endl;
    }

return 0;
```

```
Enter number of rows (between 1 and 100): 2
Enter number of columns (between 1 and 100): 2

Enter elements of 1st matrix:
Enter element a11: -4
Enter element a12: 5
Enter element a21: 6
Enter element a22: 8

Enter elements of 2nd matrix:
Enter element b11: 3
Enter element b12: -9
Enter element b21: 7
Enter element b22: 2

Sum of two matrix is:
-1   -4
13   10
```

Function

Question#1

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

void calculate_table(int num);
int main(){
    int num;
    
    calculate_table(num);
}
void calculate_table(int num){
    int i=1,n;
    cout<<"enter the num ";
    cin>>n;
    for(i=1;i<10;i++){

        cout<<i<<" x "<<n<<"= "<<i*n;
        i++;
    }
}
```

```
enter the Number 2
2x 1= 2
2x 2= 4
2x 3= 6
2x 4= 8
2x 5= 10
2x 6= 12
2x 7= 14
2x 8= 16
2x 9= 18
2x 10= 20
```

Question # 2

```cpp
#include<iostream>
using namespace std;
void factorial(int num);
int main(){
    int num;
    factorial(num);

}
void factorial(int num){

        //int num;
        cout<<"enter the num ";
        cin>>num;
    int fac=1;
    for(int i=0;i<num;i++){
        fac=fac*i;
        cout<<"fac = "<<fac;
    }

}
```

```
eneter the num 4
factorial of 4is 24
--------------------------
```

Question#3

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

// function declarations
void display(float n1, float n2, char ch, float result);
void add(float n1, float n2);
void subtract(float n1, float n2);
void multiply(float n1, float n2);
void divide(float n1, float n2);
void rem(float n1, float n2);
void power(float n1, float n2);

// main function
int main()
{
  float n1, n2;
  int ch;

  do{
    printf("Enter two numbers: ");
    scanf("%f %f", &n1, &n2);

    printf("\n*****************");
    printf("\n1.Addition");
    printf("\n2.Subtraction");
    printf("\n3.Multiplication");
    printf("\n4.Division");
    printf("\n5.Remainder");
    printf("\n6.Power (x^y)");
    printf("\n7.Exit");
    printf("\nEnter your choice: ");
    scanf("%d", &ch);

    switch (ch) {
      case 1:
        add(n1,n2);
        break;
      case 2:
        subtract(n1,n2);
        break;
      case 3:
```

```
        multiply(n1,n2);
        break;
      case 4:
        divide(n1,n2);
        break;
      case 5:
        rem(n1,n2);
        break;
      case 6:
        power(n1,n2);
        break;
      case 7:
        printf("Thank You.");
        exit(0);
      default:
        printf("Invalid input.");
        printf("Please enter correct input.");
    }

    printf("\n*********************************\n");
  }while(1);

  return 0;
}

// function for displaying the result
void display(float n1, float n2, char ch, float result)
{
  printf("%.2f %c %.2f = %.2f\n", n1, ch, n2, result);
}

// function for addition of two numbers
void add(float n1, float n2)
{
  float result = n1 + n2;
  display(n1, n2, '+', result);
}

// function for subtraction of two numbers
void subtract(float n1, float n2)
{
  float result = n1 - n2;
```

```c
// function for addition of two numbers
void add(float n1, float n2)
{
  float result = n1 + n2;
  display(n1, n2, '+', result);
}

// function for subtraction of two numbers
void subtract(float n1, float n2)
{
  float result = n1 - n2;
  display(n1, n2, '-', result);
}

// function for multiplication of two numbers
void multiply(float n1, float n2)
{
  float result = n1 * n2;
  display(n1, n2, '*', result);
}

// function for division of two numbers
void divide(float n1, float n2)
{
  float result = n1 / n2;
  display(n1, n2, '/', result);
}

// function for calculating remainder
void rem(float n1, float n2)
{
  //Modulus operator only works on int data type
  //Floating numbers are converted to int number
  int num1 = n1;
  int num2 = n2;
  int result = num1%num2;
  printf("%d %% %d = %d\n", num1, num2, result);
}

// function for calculating power
void power(float n1, float n2)
```

```c
// function for calculating power
void power(float n1, float n2)
{
  if(n2<0) printf("Second number should be +ve.");
  else
  {
    float result=1.0;
    for(int i=1; i<=n2; i++)
    {
       result *= n1;
    }
    display(n1, n2, '^', result);
  }
}
```

```
Enter two numbers: 20  10

*****************

1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Remainder
6.Power (x^y)
7.Exit
Enter your choice: 1
20.00 + 10.00 = 30.00

****************************************

Enter two numbers: 25  15

*****************

1.Addition
2.Subtraction
3.Multiplication
4.Division
```

```
4.Division
5.Remainder
6.Power (x^y)
7.Exit
Enter your choice: 2
25.00 – 15.00 = 10.00

****************************************
Enter two numbers: 15  4

*****************
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Remainder
6.Power (x^y)
7.Exit
Enter your choice: 5
```

```
Enter your choice: 5
15 % 4 = 3
****************************************
Enter two numbers:  5  -3


*****************
1.Addition
2.Subtraction
3.Multiplication
4.Division
5.Remainder
6.Power (x^y)
7.Exit
Enter your choice: 6
Second number should be +ve.
```

Question#4

```cpp
#include<iostream>
using namespace std;
int fun(int arr[3]);
int main(){
    int num;
    int arr[3];


    fun(arr)    ;
}
int fun(int arr[]){
    int num;
        cout<<"enter the num ";
    cin>>num;
    for(int i=0;i<num;i++){
        cin>>arr[i];
    }


    for(int i=0;i<num;i++){
        cout<<"arr["<<i<<"]= "<<arr[i];
    }

}
```

```
enter the num 2
1
2
arr[0]= 1arr[1]= 2
```

Question#5

```cpp
#include <iostream>
using namespace std;
void printType(double n)
{
    cout<<n<<" is double data type.\n";
}
void printType(int n)
{
    cout<<n<<" is an integer data type.\n";
}
void printType(bool n)
{
    if(n==true || n==1)
    {
        cout<<"true is a boolean       ";
        cout<<1<<" is boolean data type.\n";
    }
    else
    {
        cout<<"false is a boolean      ";
        cout<<0<<" is boolean data type.\n";
    }


}
void printType(char n)
{
    cout<<n<<" is a character data type.\n"; }

int main()
{
    printType('A');
    printType(1.24353);
    printType(334345345);
    printType(1);
}
```

```
A is a character data type.
1.24353 is double data type.
334345345 is an integer data type.
1 is an integer data type.

--------------------------------
```

Pointers

Question#1

```
#include<iostream>
using namespace std;
int main(){
    int arr[3];
    int max=-32768;
    int min=32767;
    int *p;
    for(int i=0;i<3;i++){
        cin>>arr[i];

    }
        for(int i=0;i<3;i++){
        cout<<"arr["<<i<<"]= "<<arr[i];

    }
p=arr;
    for(int i=0;i<3;i++){
        if(*p>max){
            max=*p;
        }
        if(*p<min){
            min=*p;

        }
        p++;

    }
    cout<<endl;
    cout<<"max= "<<max<<endl;
    cout<<"min= "<<min<<endl;

}
```

```
1
2
3
arr[0]= 1arr[1]= 2arr[2]= 3
max= 3
min= 1

--------------------------------
```

Question#2

```
#include<iostream>
using namespace std;
void converter(int *celcius,int *fahren);
int main(){
    int *celcius,*fahren;
    converter(celcius,fahren);

}
void converter(int *celcius,int *fahren){
    int x,y;

    cout<<"enter the fahren ";
    cin>>x;
    fahren=&x;
y=5 *(x - 32) / 9;
    celcius=&y;
    cout<<"celcius "<<*celcius;

}
```

```
enter the fahren 4
celcius -15
```

Question#3

```cpp
#include<iostream>
using namespace std;
int converter(float *gram);
int main(){
float *gram;
converter(gram);
    return 0;
}
int converter(float *gram){

      float kg;
    float x;
    cout<<"enter the mass in kg ";
    cin>>kg;
    x=kg/100.0;
    gram=&x;
    cout<<"mass in grams is "<<*gram;

}
```

```
enter the mass in kg 3
mass in grams is 0.03
--------------------------
```

Question#4

```cpp
#include<iostream>
#include<cstring>
using namespace std;
int main(){
    char s[20]="Muzamil";
    int *l;
    int x;

    x=strlen(s);
    l=&x;
    cout<<"length of string is "<<*l;
    return 0;


}
```

```
length of string is 7
--------------------------------
Process exited after 0.01472 seconds with return value 0
Press any key to continue . . .
```

Structure

Structure

Question#1

```cpp
#include<iostream>
#include<string>
using namespace std;
struct employee{
    int num;
    float dollars;



void storeData(int n,float salary){
    num=n;
    dollars=salary;
}
void Display(){
    cout<<"employee number 1ST EMPLOYEE "<<num<<endl;
    cout<<"employee compensation of 1st employee "<<dollars<<endl<<endl;
}
};
int main(){
    employee s1,s2,s3;
    cout<<"enter the employee number 1ST EMPLOYEE ";

    cin>>s1.num;
    cout<<endl;
    cout<<"employee compensation of 1st employee ";

    cin>>s1.dollars;
    cout<<endl;

        cout<<"enter employee num of 2nd employee ";
        cin>>s2.num;
        cout<<endl;
        cout<<"employee compensation of 2nd employee ";
        cin>>s2.dollars;
        cout<<endl;

        cin>>s2.dollars;
        cout<<endl;

        cout<<"enter employee compensation of 3rd employee ";
        cin>>s3.num;
            cout<<endl;
        cout<<"employee compensation of 3rd employee ";
        cin>>s3.dollars;
            cout<<endl;
    s1.storeData(s1.num,s1.dollars);
    s1.Display();
    s2.storeData(s2.num,s2.dollars);
    s2.Display();
    s3.storeData(s3.num,s3.dollars);
    s3.Display();
    return 0;
}
```

```
enter the employee number 1ST EMPLOYEE 3
employee compensation of 1st employee 4
employee number 1ST EMPLOYEE 3
employee compensation of 1st employee 4

enter employee num of 2nd employee 6
employee compensation of 2nd employee 8
employee compensation of 2nd employee 6
employee compensation of 2nd employee 8

enter employee compensation of 3rd employee 9
employee compensation of 3rd employee 6
employee compensation of 3rd employee 9
employee compensation of 3rd employee 6

--------------------------------
```

Question#2

```cpp
#include<iostream>
using namespace std;
struct time{
    int hours;
    int minutes;
    int seconds;

    void input(int h,int m,int s){
        hours=h;
        minutes=m;
        seconds=s;

    }
    void Dsiplay(){
        cout<<"seconds= "<<hours*minutes;
    }
};
int main(){
    time t;
    cout<<"enter hours ";
    cin>>t.hours;
    cout<<"eneter minutes ";
    cin>>t.minutes;
    t.input(t.hours,t.minutes,t.seconds);
    t.Dsiplay();
    return 0;

}
```

```
enter hours 60
eneter minutes 60
seconds= 3600
--------------------
```

Question#5

```
#include<iostream>
using namespace std;
struct call{

    int area_code;
    int exchange ;
    int number;

};
int main(){
    call p1,p2;
    cout<<"enter area_code,exchange and number ";
    cin>>p1.area_code;
    cin>>p1.exchange;
    cin>>p1.number;
    cout<<"my number is "<<" (212) 767-8900"<<endl;
    cout<<"your number "<<"("<<p1.area_code<<")"<<p1.exchange<<"-"<<p1.number<<endl;
    return 0;
}
```

```
enter area_code,exchange and number 123 2345    467
my number is  (212) 767-8900
your number (123)2345-467


--------------------------------
```