

NAME-SANCHIT JAIN

BATCH-B-7

ENROLL NO.-B65560

```
#include<iostream>
using namespace std;
int main(){
    int a,b,c;
    float sum;
    cout<<"enter three numbers:";
    cin>>a>>b>>c;
    cout<<"sum is ="<<(a+b+c)<<endl;
    sum=a+b+c;
    cout<<"Average is ="<<(sum)/3<<endl;
    return 0;
}
```

```
> cd
b\codes\week-1\" ; if ($?) { g++ 1.cpp -o 1 } ; if ($?) { .\1 }
enter three numbers:1 3 5
sum is =9
Average is =3
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>
```

```

2. #include<iostream>

using namespace std;
int main(){
    int a,b;
    cout<<"Enter two numbers:";
    cin>>a>>b;
    if(a>b){
        cout<<"largest number="<<a<<endl;

    }
    else{
        cout<<"largest number ="<<b<<endl;
    }
}

```

```

> cd "c:\Use
b\codes\week-1\" ; if ($?) { g++ 2.cpp -o 2 } ; if ($?) { .\2 }
Enter two numbers:7 15
largest number =15
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

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3. #include<iostream>

using namespace std;
int main(){
    int a,b,c,d;
    float x;
    cout<<"Enter 4 numbers"<<endl;
    cin>>a>>b>>c>>d;
    if(b==c){
        cout<<"Cannot divide by zero";

    }

    else{
        x=a/(b-c)+d;
        cout<<"the desired output is:"<<x<<endl;
    }
}

```

```

> cd
b\codes\week-1\" ; if ($?) { g++ 3.cpp -o 3 } ; if ($?) { .\3 }
Enter 4 numbers
1 2 4 7
the desired output is:7
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```

```

4. #include <iostream>

using namespace std;
int main()
{
    int array[100],m=10e6,n;
    cin>>n;
    for(int i=0;i<n;i++){
        cin>>array[i];
        if(array[i]>0&&m>array[i]){
            m=array[i];
        }
    }
    for(int i=0;i<n;i++){
        if(m==array[i]){
            m++;
            i=-1;
        }
    }
    cout<<m;
    return 0;
}

```

```

> cd "c:\User
b\codes\week-1\" ; if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
6
1 3 4 5 6 7
2
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```

```

5#include <iostream>

#include <climits>
using namespace std;

int isPrime(int n)
{
    int i = 2;
    while (i * i <= n)
    {
        if (n % i == 0)
        {
            return 0;
        }
        i++;
    }
    return 1;
}

int binarySearch(int arr[], int size, int key, int begin)
{
    int s = begin;
    int e = size;
    while (s <= e)
    {
        int mid = (s + e) / 2;
        if (arr[mid] == key)
        {
            return mid;
        }
        else if (arr[mid] > key)
        {
            e = mid - 1;
        }
        else
        {
            s = mid + 1;
        }
    }
    return -1;
}

int main()
{
    int n;
    cin >> n;
    int arr[n];
    int max = INT_MIN;
    for (int i = 0; i < n; i++)

```

```

{
    cin >> arr[i];
    if (arr[i] > max)
    {
        max = arr[i];
    }
}
for (int i = 1; i < n; i++)
{
    for (int j = 0; j < n - i; j++)
    {
        if (arr[j] > arr[j + 1])
        {
            int temp = arr[j];
            arr[j] = arr[j + 1];
            arr[j + 1] = temp;
        }
    }
}
int prevIndex = 0;
for (int i = 2; i < max; i++)
{
    if (isPrime(i))
    {
        int temp = binarySearch(arr, n, i, prevIndex);
        if (temp == -1)
        {
            cout << i << endl;
            return 0;
        } else {
            prevIndex = temp;
        }
    }
}
cout << "All primes are present in array." << endl;
return 0;
}

```

```

> cd "
b\codes\week-1\" ; if ($?) { g++ 5.cpp -o 5 } ; if ($?) { .\5 }
5
1 3 5 6 7
2
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```

Live Share

```

6.#include<iostream>
using namespace std;
int main(){
    int n,m;
    cin>>n>>m;
    bool mat[n][m];
    int row[n];
    int col[m];
    int rowC=0,colC=0;
    for(int i=0;i<n;i++){
        for(int j=0;j<m;j++){
            cin>>mat[i][j];
        }
    }
    for(int i=0;i<n;i++){
        for(int j=0;j<m;j++){
            if(mat[i][j]){
                row[rowC++]=i;
                col[colC++]=j;
            }
        }
    }
    for(int i=0;i<rowC;i++){
        for(int j=0;j<m;j++){
            mat[row[i]][j]=1;
        }
    }
    for(int i=0;i<n;i++){
        for(int j=0;j<colC;j++){
            mat[i][col[j]]=1;
        }
    }
    for(int i=0;i<n;i++){
        for(int j=0;j<m;j++){
            cout<<mat[i][j]<<" ";
        }
        cout<<endl;
    }
}

```

```

> cd "c:
b\codes\week-1\" ; if ($?) { g++ tempCodeRunnerFile.cpp -o tempCodeRunnerFile
2 2
0 0
1 0
1 0
1 1
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```

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7. #include<iostream>

using namespace std;
struct employee{
    char name[20];
    int age;
    float salary;
};
int main(){
    struct employee emp;
    cout<<"Enter name ";
    cin.get(emp.name,20);
    cout<<"Enter age :";
    cin>>emp.age;
    cout<<"Eneter salary :";
    cin>>emp.salary;
    cout<<"\nDETAILS\n";
    cout<<"Name :"<<emp.name<<endl;
    cout<<"Age :"<<emp.age<<endl;
    cout<<"Salary :"<<emp.salary<<endl;
    return 0;
}

```

```

> cd "
b\codes\week-1\" ; if ($?) { g++ tempCodeRunnerFile.cpp -o tempCodeRunnerFi
Enter name sanchit jain
Enter age :19
Eneter salary :250000

DETAILS
Name :sanchit jain
Age :19
Salary :250000
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```



```

7.1#include <iostream>

using namespace std;

struct employee
{
    char name[30];
    int age;
    float salaryComp[5];
    float totalSalary = 0.0;
};

int main()
{
    const char *comp[5] = {"Basic", "HRA", "Book Allowance", "Furniture Allowance", "Special Allowance"};
    struct employee emp;
    cout << "Enter full name: ";
    cin.get(emp.name, 30);
    cout << "Enter age: ";
    cin >> emp.age;
    cout << "Enter salary components:\n";
    for (int i = 0; i < 5; i++)
    {
        cout << comp[i] << ": ";
        cin >> emp.salaryComp[i];
        emp.totalSalary+=emp.salaryComp[i];
    }
    cout << "\nDisplaying Information.\n";
    cout << "Name: " << emp.name << endl;
    cout << "Age: " << emp.age << endl;
    cout << "Salary: " << emp.totalSalary << endl;
    return 0;
}

```

```

Basic: 170000
HRA: 19000
Book Allowance: 14000
Furniture Allowance: 2000
Special Allowance: 3000

```

```

Displaying Information.
Name: sanchit jain
Age: 19
Salary: 208000

```

```

PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```

```

8. #include <iostream>

using namespace std;

struct phone{
    int price;
    int batteryPower;
    float rating;
};

int main()
{
    struct phone phone1, phone2;
    cout << "Enter Phone1 details: " << endl;
    cout << "Enter Price: ";
    cin >> phone1.price;
    cout << "Enter Battery Power (in mAh): ";
    cin >> phone1.batteryPower;
    cout << "Enter Rating (between 0-5): ";
    cin >> phone1.rating;
    if(phone1.rating > 5 || phone1.rating < 0){
        cout << "Invalid rating entered\n";
        return 0;
    }
    cout << "Enter Phone2 details: " << endl;
    cout << "Enter Price: ";
    cin >> phone2.price;
    cout << "Enter Battery Power (in mAh): ";
    cin >> phone2.batteryPower;
    cout << "Enter Rating (between 0-5): ";
    cin >> phone2.rating;
    if(phone2.rating > 5 || phone2.rating < 0){
        cout << "Invalid rating entered\n";
        return 0;
    }
    int arr[3];
    arr[0] = phone1.price > phone2.price;
    arr[1] = phone1.batteryPower < phone2.batteryPower;
    arr[2] = phone1.rating < phone2.rating;
    const char *componentsName[3] = {"Price", "Battery Power", "Rating"};
    for (int i = 0; i < 3; i++)
    {
        cout << "Phone better w.r.t " << componentsName[i] << " is Phone " <<
(arr[i] + 1) << endl;
    }

    return 0;
}

```

```
> cd "
b\codes\week-1\" ; if ($?) { g++ 8.cpp -o 8 } ; if ($?) { .\8 }
Enter Phone1 details:
Enter Price: 1900
Enter Battery Power (in mAh): 5000
Enter Rating (between 0-5): 4
Enter Phone2 details:
Enter Price: 2000
Enter Battery Power (in mAh): 6000
Enter Rating (between 0-5): 4
Phone better w.r.t Price is Phone1
Phone better w.r.t Battery Power is Phone2
Phone better w.r.t Rating is Phone1
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1> 
```

```

9. #include <iostream>

using namespace std;
int main()
{

    int a, b, maxr, minr, maxc, minc;
    cout << "Enter the dimension of array";
    cin >> a >> b;
    int arr[a][b];
    for (int i = 0; i < a; i++)
    {
        for (int j = 0; j < b; j++)
        {
            cin >> arr[i][j];
        }
    }
    minr = 0;
    minc = 0;
    maxr = a-1;
    maxc = b-1;
    int total = a * b;
    int count = 0;
    while (count < total)
    {
        for (int i = minc; i <= maxc && count < total; i++)
        {
            cout << arr[minr][i]<<endl;

            count++;
        }
        minr++;
        for (int j = minr; j <= maxr && count < total; j++)
        {
            cout << arr[j][maxc]<<endl;

            count++;
        }
        maxc--;
        for (int i = maxc; i >= minc && count < total; i--)
        {
            cout << arr[maxr][i]<<endl;

            count++;
        }
        maxr--;
        for (int j = maxr; j >= minr && count < total; j--)
        {
            cout << arr[j][minc]<<endl;

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        count++;
    }
    minc++;
}
return 0;
}

```

```

1 2 3 4 5 6 12 18 17 16 15 14 13 7 8 9 10 11
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1> cd "
b\codes\week-1\" ; if ($?) { g++ 9.cpp -o 9 } ; if ($?) { .\9 }
Enter the dimension of array3 6
1 2 3 4 5 6
7 8 9 10 11 12
13 14 15 16 17 18
1,2,3,4,5,6,12,18,17,16,15,14,13,7,8,9,10,11,
PS C:\Users\jains\OneDrive\Desktop\college sem 2\SDF\lab\codes\week-1>

```