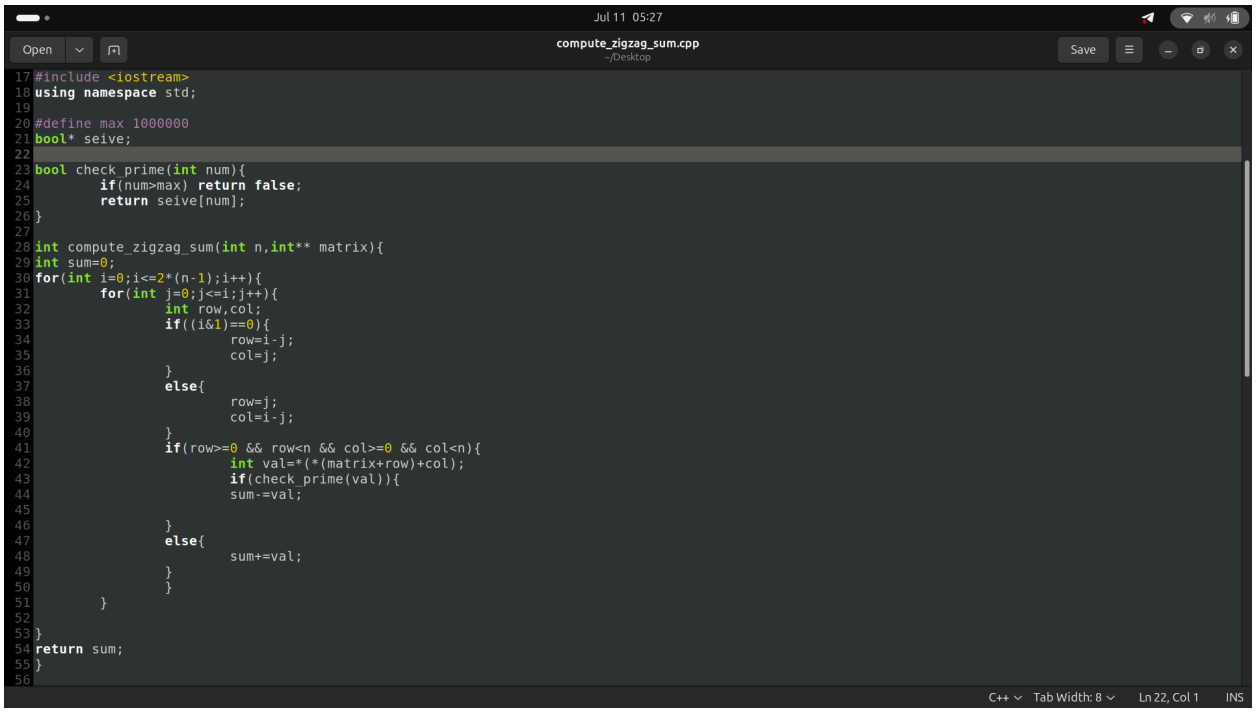
CODE

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

#define max 1000000
bool* sieve;

bool check_prime(int num){
	if(num>max) return false;
	return sieve[num];
}

int compute_zigzag_sum(int n,int** matrix){
int sum=0;
for(int i=0;i<=2*(n-1);i++){
	for(int j=0;j<=i;j++){
		int row,col;
		if((i&1)==0){
			row=i-j;
			col=j;
		}
		else{
			row=j;
			col=i-j;
		}
		if(row>=0 && row<n && col>=0 && col<n){
			int val=*(*(matrix+row)+col);
			if(check_prime(val)){
			sum-=val;

		}
		else{
			sum+=val;
		}
		}
	}

}
return sum;
}

void generate_sieve(){
	sieve=new bool[max+1];
```

```
        for(int i=0;i<=max;i++){
                sieve[i]=true;
        }
        sieve[0]=sieve[1]=false;
        for(int i=2;i*i<=max;i++){
                if(sieve[i]){
                        for(int j=i*i;j<=max;j+=i){
                                sieve[j]=false;
                        }
                }
        }
}

int main(){
int n;
cout<<"Enter matrix size n(2 <= n <= 100):";
cin>>n;

if(n<2 || n>100){
        cout<<"Invalid matrix size"<<endl;
        return 0;
}
//matrix input by user
int** matrix =new int*[n];
for(int i=0;i<n;i++){
        *(matrix+i)=new int[n];
}
cout<<"Enter "<< n*n <<" matrix elements:"<<endl;
for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
                int val;
                cin>>val;
                if(val<1 || val>max){
                        cout<<"Element out of range"<<endl;
                        return 0;
                }
                *(*(matrix+i)+j)=val;
        }
}
//check_prime() -using sieve of eratosthenes
//compute_zigzag_sum()

generate_sieve();
int result=compute_zigzag_sum(n,matrix);
```

```
cout<<"Zigzag Traversal sum:"<<result<<endl;
for(int i=0;i<n;i++){
        delete[] *(matrix + i);

}
delete[] matrix;
delete[] sieve;
return 0;
}
```



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Open | compute_zigzag_sum.cpp ~/Desktop | Save

```
void generate_sieve(){
        seive=new bool[max+1];
        for(int i=0;i<=max;i++){
                seive[i]=true;
        }
        seive[0]=seive[1]=false;
        for(int i=2;i*i<=max;i++){
                if(seive[i]){
                        for(int j=i*i;j<=max;j+=i){
                                seive[j]=false;
                        }
                }
        }
}

int main(){
int n;
cout<<"Enter matrix size n(2 <= n <= 100):";
cin>>n;

if(n<2 || n>100){
        cout<<"Invalid matrix size"<<endl;
        return 0;
}
//matrix input by user
int** matrix =new int*[n];
for(int i=0;i<n;i++){
        *(matrix+i)=new int[n];
}
cout<<"Enter "<< n*n <<" matrix elements:"<<endl;
for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
                int val;
                cin>>val;
                if(val<1 || val>max){
                        cout<<"Element out of range"<<endl;
                        return 0;
                }
                *(*(matrix+i)+j)=val;
```

C++ | Tab Width: 8 | Ln 22, Col 1 | INS

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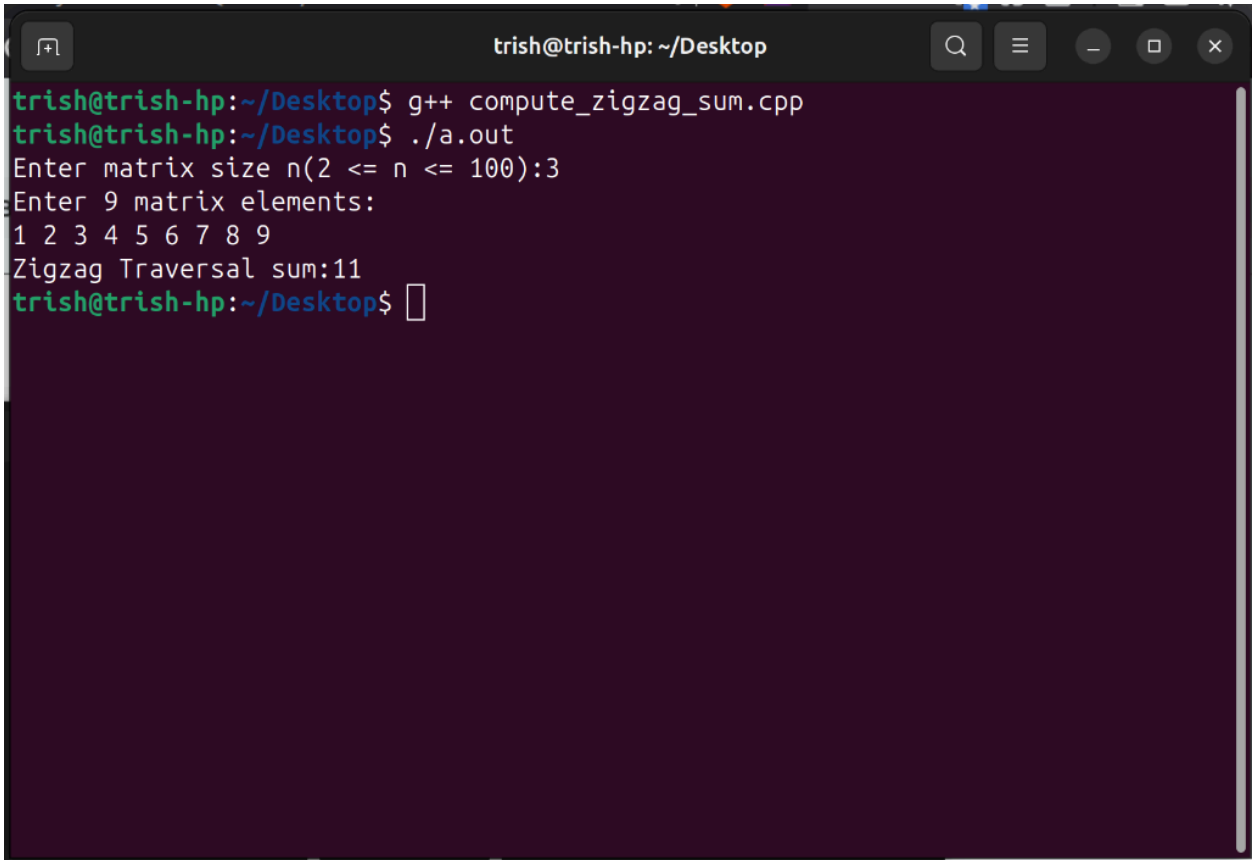
```
int main(){
int n;
cout<<"Enter matrix size n(2 <= n <= 100):";
cin>>n;

if(n<2 || n>100){
        cout<<"Invalid matrix size"<<endl;
        return 0;
}
//matrix input by user
int** matrix =new int*[n];
for(int i=0;i<n;i++){
        *(matrix+i)=new int[n];
}
cout<<"Enter "<< n*n <<" matrix elements:"<<endl;
for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
                int val;
                cin>>val;
                if(val<1 || val>max){
                        cout<<"Element out of range"<<endl;
                        return 0;
                }
                *(*(matrix+i)+j)=val;
        }
}
//check_prime() -using seive of eratosthenes
//compute_zigzag_sum()

generate_sieve();
int result=compute_zigzag_sum(n,matrix);
cout<<"Zigzag Traversal sum:"<<result<<endl;
for(int i=0;i<n;i++){
        delete[] *(matrix + i);

}
delete[] matrix;
delete[] seive;
return 0;
}
```

C++ | Tab Width: 8 | Ln 81, Col 23 | INS



Github Repository Link :
https://github.com/Trishna2005Das/GFG-iServeU-coding-round.git