Algorithms – Warmup

1. #include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int solveMeFirst(int a, int b) {

// Hint: Type return a+b; below:

int c=a+b;

return c;

}

int main() {

int num1, num2;

int sum;

cin>>num1>>num2;

sum = solveMeFirst(num1,num2);

cout<<sum;

return 0;

}

2. #include <bits/stdc++.h>

using namespace std;

int simpleArraySum(int n, vector <int> ar) {

// Complete this function

int res=0;

for(int ar\_i=0;ar\_i<n;ar\_i++){

res=res+ar[ar\_i];

}

return res;

}

int main() {

int n;

cin >> n;

vector<int> ar(n);

for(int ar\_i = 0; ar\_i < n; ar\_i++){

cin >> ar[ar\_i];

}

int result = simpleArraySum(n, ar);

cout << result << endl;

return 0;

}

3. #include <bits/stdc++.h>

using namespace std;

// Complete this function

int main() {

int a0;

int a1;

int a2;

cin >> a0 >> a1 >> a2;

int b0;

int b1;

int b2;

cin >> b0 >> b1 >> b2;

int c1=0,c2=0;

if(a0>b0)

c1++;

else if(a0<b0)

c2++;

if(a1>b1)

c1++;

else if(a1<b1)

c2++;

if(a2>b2)

c1++;

else if(a2<b2)

c2++;

cout<<c1<<" "<<c2;

cout << endl;

return 0;

}

4. #include <bits/stdc++.h>

using namespace std;

long aVeryBigSum(int n, vector <long> ar) {

// Complete this function

long res=0;

for(int i=0;i<n;i++){

res=res+ar[i];

}

return res;

}

int main() {

int n;

cin >> n;

vector<long> ar(n);

for(int ar\_i = 0; ar\_i < n; ar\_i++){

cin >> ar[ar\_i];

}

long result = aVeryBigSum(n, ar);

cout << result << endl;

return 0;

}

5. #include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main(){

int j,i,n,c1=0,c2=0;

cin >> n;

vector< vector<int> > a(n,vector<int>(n));

for(i = 0;i < n;i++){

for(j = 0;j < n;j++){

cin >> a[i][j];

}

}

for(i=0;i<n;i++){

for(j=0;j<n;j++){

if(i==j)

c1=c1+a[i][j];

}

}

for(i=0;i<n;i++){

for(j=0;j<n;j++){

if(i==n-j-1)

c2=c2+a[i][j];

}

}

int c3=abs(c1-c2);

cout<<c3;

return 0;

}

6. #include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main(){

int n;

cin >> n;

vector<int> a(n);

for(int a\_i = 0;a\_i < n;a\_i++){

cin >> a[a\_i];

}

float c1,c2,c3;

for(int i=0;i<n;i++){

if(a[i]>0)

c1++;

else if(a[i]<0){

c2++;

}

else

c3++;

}

c1=c1/n;

c2=c2/n;

c3=c3/n;

cout<<c1<<endl<<c2<<endl<<c3;

return 0;

}

7. #include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main(){

int n,i,j;

cin >> n;

for(i=0;i<n;i++)

{

for(j=0;j<n;j++)

{

if(i<n-j-1)

{

cout<<" ";

}

else{

printf("#");

}

}

cout<<endl;

}

return 0;

}

8. #include <bits/stdc++.h>

using namespace std;

int main() {

vector<int> arr(5);

for(int arr\_i = 0; arr\_i < 5; arr\_i++){

cin >> arr[arr\_i];

}

long sum=0;

for(int arr\_i = 0; arr\_i < 5; arr\_i++){

cin >> arr[arr\_i];

sum+=arr[arr\_i];

}

long min\_sum=sum-arr[4];

long max\_sum=sum-arr[4];

for(int i=0;i<4;i++){

if(sum-arr[i]<min\_sum){min\_sum=sum-arr[i];}

if(sum-arr[i]>max\_sum){max\_sum=sum-arr[i];}

}

cout<< min\_sum<<" "<<max\_sum;

return 0;

}

9. #include <bits/stdc++.h>

using namespace std;

int birthdayCakeCandles(int n, vector <int> ar){

int max=ar[0];

for(int i=0;i<n;i++){

if(ar[i]>max)

max=ar[i];

}

int count=0;

for(int j=0;j<n;j++){

if(max==ar[j])

count++;

}

return count;

}

int main() {

int n;

cin >> n;

vector<int> ar(n);

for(int ar\_i = 0; ar\_i < n; ar\_i++){

cin >> ar[ar\_i];

}

int result = birthdayCakeCandles(n, ar);

cout << result << endl;

return 0;

}

10. #include <bits/stdc++.h>

using namespace std;

void timeConversion(string str) {

// Complete this function

// Get hours

int h1 = (int)str[1] - '0';

int h2 = (int)str[0] - '0';

int hh = (h2 \* 10 + h1 % 10);

// If time is in "AM"

if (str[8] == 'A')

{

if (hh == 12)

{

cout << "00";

for (int i=2; i <= 7; i++)

cout << str[i];

}

else

{

for (int i=0; i <= 7; i++)

cout << str[i];

}

}

// If time is in "PM"

else

{

if (hh == 12)

{

cout << "12";

for (int i=2; i <= 7; i++)

cout << str[i];

}

else

{

hh = hh + 12;

cout << hh;

for (int i=2; i <= 7; i++)

cout << str[i];

}

}

}

int main() {

string str;

cin >> str;

timeConversion(str);

return 0;

}