**C++ All Question:**

1. <https://codeforces.com/problemset/problem/71/A>

Sometimes some words like "localization" or "internationalization" are so long that writing them many times in one text is quite tiresome.

Let's consider a word too long, if its length is strictly more than 10 characters. All too long words should be replaced with a special abbreviation.

This abbreviation is made like this: we write down the first and the last letter of a word and between them we write the number of letters between the first and the last letters. That number is in decimal system and doesn't contain any leading zeroes.

Thus, "localization" will be spelt as "l10n", and "internationalization» will be spelt as "i18n".

You are suggested to automatize the process of changing the words with abbreviations. At that all too long words should be replaced by the abbreviation and the words that are not too long should not undergo any changes.

Input

The first line contains an integer *n* (1 ≤ *n* ≤ 100). Each of the following *n* lines contains one word. All the words consist of lowercase Latin letters and possess the lengths of from 1 to 100 characters.

Output

Print *n* lines. The *i*-th line should contain the result of replacing of the *i*-th word from the input data.

Examples

Input

4  
word  
localization  
internationalization  
pneumonoultramicroscopicsilicovolcanoconiosis

Output

word  
l10n  
i18n  
p43s

1. #include <stdio.h>
2. #include <string.h>
3. int main()
4. {
5. int n;
6. scanf("%d", &n);
7. for (int i = 0; i < n; i++)
8. {
9. char s[100];
10. scanf("%s", &s);
11. int l = strlen(s);
12. if (l > 0 && l <= 10)
13. printf("%s\n", s);
14. else
15. printf("%c%d%c\n", s[0], l - 2, s[l - 1]);
16. }
17. return 0;
18. }

2. <https://codeforces.com/problemset/problem/734/A>

Anton likes to play chess, and so does his friend Danik.

Once they have played *n* games in a row. For each game it's known who was the winner — Anton or Danik. None of the games ended with a tie.

Now Anton wonders, who won more games, he or Danik? Help him determine this.

Input

The first line of the input contains a single integer *n* (1 ≤ *n* ≤ 100 000) — the number of games played.

The second line contains a string *s*, consisting of *n* uppercase English letters 'A' and 'D' — the outcome of each of the games. The *i*-th character of the string is equal to 'A' if the Anton won the *i*-th game and 'D' if Danik won the *i*-th game.

Output

If Anton won more games than Danik, print "Anton" (without quotes) in the only line of the output.

If Danik won more games than Anton, print "Danik" (without quotes) in the only line of the output.

If Anton and Danik won the same number of games, print "Friendship" (without quotes).

Examples

Input

6  
ADAAAA

Output

Anton

Input

7  
DDDAADA

Output

Danik

Input

6  
DADADA

Output

Friendship

Note

In the first sample, Anton won 6 games, while Danik — only 1. Hence, the answer is "Anton".

In the second sample, Anton won 3 games and Danik won 4 games, so the answer is "Danik".

In the third sample, both Anton and Danik won 3 games and the answer is "Friendship".

1. #include <bits/stdc++.h>
2. using namespace std;
3. int main()
4. {
5. int n, a = 0, d = 0;
6. cin >> n;
7. string s;
8. cin >> s;
9. for (int i = 0; i < n; i++)
10. {
11. if (s[i] == 'A')
12. a++;
13. else
14. d++;
15. }
16. if (a == d)
17. cout << "Friendship";
18. else if (a > d)
19. cout << "Anton";
20. else
21. cout << "Danik";
22. return 0;
23. }

3. <https://codeforces.com/group/MWSDmqGsZm/contest/219856/problem/Q>

Given a string *S*. For each word in *S*

reverse its letters then print it.

Note: words are separated by space.

Input

Only one line contains a strings *S*

(1≤|*S*|≤106)

where |S| is the length of the string and it consists of lowercase and uppercase English letters, spaces.

Output

Print the answer required above.

Examples

Input

Copy

I love you

Output

Copy

I evol uoy

Input

Copy

You love me

Output

Copy

uoY evol em

Input

Copy

We are a happy family

Output

Copy

eW era a yppah ylimaf

4. <https://codeforces.com/group/MWSDmqGsZm/contest/219856/problem/K>

Given two strings *S* and *T*. Print a new string that contains the following:

1. The first letter of the string *S* followed by the first letter of the string *T*.
2. the second letter of the string *S* followed by the second letter of the string *T*.
3. and so on...

In other words, the new string should be ( *S*0 + *T*0 + *S*1 + *T*1 + .... ).

Note: If the length of *S* is greater than the length of *T* then you have to add the rest of *S* letters at the end of the new string and vice versa.

Input

The first line contains a number *N* (1 ≤ *N* ≤ 50) the number of test cases.

Each of the *N* following lines contains two string *S*, *T* (1 ≤ |*S*|, |*T*| ≤ 50) consists of lower and upper English letters.

Output

For each test case, print the required string.

Example

Input

Copy

2  
ipAsu ccsit  
ey gpt

Output

Copy

icpcAssiut  
Egypt

5. <https://codeforces.com/group/MWSDmqGsZm/contest/219158/problem/V>

Given a comparison symbol *S* between two numbers *A* and *B*. Determine whether it is *Right* or *Wrong*.

The comparison is as follows: *A* < *B*, *A* > *B*, *A* = *B*.

Where *A*, *B* are two integer numbers and S refers to the sign between them.

Input

Only one line containing *A*, *S* and *B* respectively (-100  ≤  *A*, *B*  ≤  100), *S* can be ('<', '>','=') without the quotes.

Output

Print "Right" if the comparison is true, "Wrong" otherwise.

Examples

Input

Copy

5 > 4

Output

Copy

Right

Input

Copy

9 < 1

Output

Copy

Wrong

Input

Copy

4 = 4

Output

Copy

Right

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. ll \* get\_array(ll n){
17. }
18. int main()
19. {
20. int a,b;
21. char s;
22. cin>>a>>s>>b;
23. if(a>b && s=='>' || a<b && s=='<' || a==b && s=='=')
24. cout<<"Right"<<endl;
25. else
26. cout<<"Wrong"<<endl;
27. return 0;
28. }

6. <https://codeforces.com/group/MWSDmqGsZm/contest/219158/problem/W>

Given a mathematical expression. The expression will be one of the following expressions:

*A* + *B* = *C*, *A* - *B* = *C* and *A* \* *B* = *C*

where *A*, *B*, *C* are three numbers, *S* is the sign between *A* and *B*, and *Q* the '=' sign

Print "Yes" If the expression is Right , Otherwise print the right answer of the expression.

Input

Only one line containing the expression: *A*, *S*, *B*, *Q*, *C* respectively (0 ≤ *A*, *B* ≤ 100,  - 105 ≤ *C* ≤ 105) and *S* can be ('+', '-', '\*') without the quotation.

Output

Output either "Yes" (without the quotation) or the right answer depending on the statement.

Examples

Input

Copy

5 + 10 = 15

Output

Copy

Yes

Input

Copy

3 - 1 = 2

Output

Copy

Yes

Input

Copy

2 \* 10 = 19

Output

Copy

20

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. ll \* get\_array(ll n){
17. }
18. int main()
19. {
20. int a,b,r;
21. char s,e;
22. cin>>a>>s>>b>>e>>r;
23. if(s=='+' && a+b==r ||s=='-' && a-b==r || s=='\*' && a\*b==r){
24. cout<<"Yes"<<endl;
25. }
26. else{
27. if(s=='+')
28. cout<<a+b<<endl;
29. else if(s=='-')
30. cout<<a-b<<endl;
31. else
32. cout<<a\*b<<endl;
33. }
34. return 0;
35. }

7. <https://codeforces.com/group/MWSDmqGsZm/contest/219774/problem/G>

Given a number *N* and an array *A* of *N*

numbers. Determine if it's palindrome or not.

Note:

An array is called palindrome if it reads the same backward and forward, for example, arrays { 1 } and { 1,2,3,2,1 } are palindromes, while arrays { 1,12 } and { 4,7,5,4 } are not.

Input

First line contains a number *N*

(1≤*N*≤105)

number of elements.

Second line contains *N*

numbers (1≤*Ai*≤109)

.

Output

Print "YES" (without quotes) if A is a palindrome array, otherwise, print "NO" (without quotes).

Examples

Input

Copy

5

1 3 2 3 1

Output

Copy

YES

Input

Copy

4

1 2 3 4

Output

Copy

NO

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. ll \* get\_array(ll n){
17. }
18. int main()
19. {
20. ll n;
21. cin>>n;
22. ll a[n];
23. fo(n){
24. cin>>a[i];
25. }
27. int i=0,j=n-1,f=0;
28. while(i<j){
29. if(a[i]!=a[j]){
30. f=1;
31. break;
32. }
33. i++;
34. j--;
35. }
36. if(f==0){
37. cout<<"YES"<<endl;
38. }
39. else{
40. cout<<"NO"<<endl;
41. }
42. return 0;
43. }

8. <https://codeforces.com/group/MWSDmqGsZm/contest/219774/problem/I>

Given a number *N* and an array *A* of *N* numbers. Print the smallest possible result of *Ai* + *Aj* + *j* - *i* , where 1  ≤  i < j  ≤  *N*.

Input

The first line contains a number *T* (1 ≤ *T* ≤ 100) number of test cases.

Each test case contains two lines:

* The first line consists a number *N* (2 ≤ *N* ≤ 100) number of elements.
* The second line contains *N* numbers ( - 106 ≤ *Ai* ≤ 106).

Output

For each test case print a single line contains the smallest possible sum for the corresponding test case.

Example

Input

Copy

1  
4  
20 1 9 4

Output

Copy

7

Note

First Case :

All possibles (i,j) where (1  ≤  i < j  ≤  *N*) are :

i = 1 , j = 2 then result = *a*1 + *a*2 + j - i = 20 + 1 + 2-1 = 22.

i = 1 , j = 3 then result = *a*1 + *a*3 + j - i = 20 + 9 + 3-1 = 31.

i = 1 , j = 4 then result = *a*1 + *a*4 + j - i = 20 + 4 + 4-1 = 27.

i = 2 , j = 3 then result = *a*2 + *a*3 + j - i = 1 + 9 + 3-2 = 11.

i = 2 , j = 4 then result = *a*2 + *a*4 + j - i = 1 + 4 + 4-2 = 7.

i = 3 , j = 4 then result = *a*3 + *a*4 + j - i = 9 + 4 + 4-3 = 14.

So the smallest possible result is 7

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. ll \* get\_array(ll n){
17. }
18. int main()
19. {
20. ll n;
21. cin>>n;
22. fo(n){
23. int N;
24. cin>>N;
25. ll a[N];
26. fo(N){
27. cin>>a[i];
28. }
29. ll mi=a[0]+a[1]+1;
30. for(int x=0;x<(N-1);x++){
31. for(int y=x+1;y<N;y++){
32. mi=min(mi,a[x]+a[y]+(y+1)-(x+1));
33. //cout<<x<<"..."<<y<<"..."<<a[x]+a[y]+y-x<<"....."<<mi<<"..........."<<endl;
34. }
35. }
36. cout<<mi<<endl;
37. }
38. return 0;
39. }

9. <https://codeforces.com/group/MWSDmqGsZm/contest/219774/problem/H>

Given a number *N* and an array *A* of *N* numbers. Print the numbers after sorting them.

Note:

* Don't use built-in-functions.
* try to solve it with bubble sort algorithm or Selection Sort.
* for more information watch : <https://www.youtube.com/watch?v=EnodMqJuQEo>.

Input

First line contains a number *N* (0 < *N* < 103) number of elements.

Second line contains *N* numbers ( - 100 ≤ *Ai* ≤ 100).

Output

Print the numbers after sorting them.

Examples

Input

Copy

3  
3 1 2

Output

Copy

1 2 3

Input

Copy

4  
5 2 7 3

Output

Copy

2 3 5 7

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. ll \* get\_array(ll n){
17. }
18. int main()
19. {
20. ll n;
21. cin>>n;
22. ll a[n];
23. fo(n){
24. cin>>a[i];
25. }
26. sort(a,a+n);
27. fo(n){
28. cout<<a[i]<<" ";
29. }
30. return 0;
31. }

10. <https://codeforces.com/group/MWSDmqGsZm/contest/219856/problem/U>

Given a string *S*. Print number of times that "EGYPT" word can be formed from *S*

's characters.

Note: Case of the letters doesn't matter. For example: "Egypt", "egypt" and "eGyPt" are the same.

Input

Only one line contains a string *S*(1≤|*S*|≤106)

where |S| is the length of the string and it consists of lowercase and uppercase English letters.

Output

Print the answer required above.

Examples

Input

Copy

EgYpTaz

Output

Copy

1

Input

Copy

pemigdbeigyypetet

Output

Copy

2

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. class Student{
16. public:
17. string name;
18. int roll;
19. char section;
20. int math\_marks;
21. int cls;
23. Student(string name,int roll,char section,int math\_marks,int cls){
24. this->name=name;
25. this->roll=roll;
26. this->section=section;
27. this->math\_marks=math\_marks;
28. this->cls=cls;
29. }
31. };
32. int main()
33. {
34. string s;
35. cin>>s;
36. for(auto &x:s){
37. x=tolower(x);
38. }
39. int f=count(s.begin(),s.end(),'e');
40. int mi=f;
41. //cout<<f<<endl;
42. mi=min(f,mi);
43. f=count(s.begin(),s.end(),'g');
44. mi=min(f,mi);
45. f=count(s.begin(),s.end(),'y');
46. mi=min(f,mi);
47. f=count(s.begin(),s.end(),'p');
48. mi=min(f,mi);
49. f=count(s.begin(),s.end(),'t');
50. mi=min(f,mi);
51. cout<<mi<<endl;
52. return 0;
53. }

11. <https://codeforces.com/group/MWSDmqGsZm/contest/219856/problem/I>

Given a string *S*. Determine whether *S* is Palindrome or not

Note: A string is said to be a palindrome if the reverse of the string is same as the string. For example, "abba" is palindrome, but "abbc" is not palindrome.

Input

Only one line contains a string *S* (1 ≤ |*S*| ≤ 1000) where |S| is the length of the string and it consists of lowercase letters only.

Output

Print "YES" if the string is palindrome, otherwise print "NO".

Examples

Input

Copy

abba

Output

Copy

YES

Input

Copy

icpcassiut

Output

Copy

NO

Input

Copy

mam

Output

Copy

YES

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. string s;
19. cin>>s;
20. int l=s.length();
21. int i=0,j=l-1,f=0;
22. while(i<j){
23. if(s[i]!=s[j]){
24. f=1;
25. break;
26. }
27. i++;
28. j--;
29. }
30. if(f==1){
31. cout<<"NO"<<endl;
32. }
33. else{
34. cout<<"YES"<<endl;
35. }
36. return 0;
37. }

12. <https://codeforces.com/group/MWSDmqGsZm/contest/219856/problem/V>

Given a string *S*. Print *S*

after replacing every sub-string that is equal to "EGYPT" with space.

Input

Only one line contains a string *S*

(1≤|*S*|≤103)

where |S| is the length of the string and it consists of only uppercase English letters.

Output

Print the result as required above.

Examples

Input

Copy

BRITISHEGYPTGHANA

Output

Copy

BRITISH GHANA

Input

Copy

ITALYKOREAEGYPTEGYPTALGERIAEGYPTZ

Output

Copy

ITALYKOREA ALGERIA Z

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. string s;
19. cin>>s;
20. int l=s.length();
21. int i=0;
22. int p=s.find("EGYPT");
23. //cout<<p<<endl;
24. while(p!=-1){
25. s.replace(p,5," ");
26. p=s.find("EGYPT");
27. }
29. cout<<s<<endl;
30. return 0;
31. }

13. <https://codeforces.com/contest/1676/problem/A>

A ticket is a string consisting of six digits. A ticket is considered lucky if the sum of the first three digits is equal to the sum of the last three digits. Given a ticket, output if it is lucky or not. Note that a ticket can have leading zeroes.

Input

The first line of the input contains an integer *t*

(1≤*t*≤103

) — the number of testcases.

The description of each test consists of one line containing one string consisting of six digits.

Output

Output *t*

lines, each of which contains the answer to the corresponding test case. Output "YES" if the given ticket is lucky, and "NO" otherwise.

You can output the answer in any case (for example, the strings "yEs", "yes", "Yes" and "YES" will be recognized as a positive answer).

Example

Input

Copy

5

213132

973894

045207

000000

055776

Output

Copy

YES

NO

YES

YES

NO

Note

In the first test case, the sum of the first three digits is 2+1+3=6

and the sum of the last three digits is 1+3+2=6

, they are equal so the answer is "YES".

In the second test case, the sum of the first three digits is 9+7+3=19

and the sum of the last three digits is 8+9+4=21

, they are not equal so the answer is "NO".

In the third test case, the sum of the first three digits is 0+4+5=9

and the sum of the last three digits is 2+0+7=9

, they are equal so the answer is "YES".

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. int n;
19. cin>>n;
20. fo(n){
21. int x;
22. cin>>x;
23. int s1=0,s2=0;
24. fo(3){
25. s1=s1+x%10;
26. x=x/10;
27. }
28. fo(3){
29. s2=s2+x%10;
30. x=x/10;
31. }
32. if(s1==s2){
33. cout<<"YES"<<endl;
34. }
35. else{
36. cout<<"NO"<<endl;
37. }
38. }
39. return 0;
40. }

14. <https://codeforces.com/contest/1703/problem/B>

In an ICPC contest, balloons are distributed as follows:

* Whenever a team solves a problem, that team gets a balloon.
* The first team to solve a problem gets an additional balloon.

A contest has 26 problems, labelled A, B, C, ..., Z. You are given the order of solved problems in the contest, denoted as a string *s*, where the *i*-th character indicates that the problem *si*

has been solved by some team. No team will solve the same problem twice.

Determine the total number of balloons that the teams received. Note that some problems may be solved by none of the teams.

Input

The first line of the input contains an integer *t*

(1≤*t*≤100

) — the number of testcases.

The first line of each test case contains an integer *n*

(1≤*n*≤50

) — the length of the string.

The second line of each test case contains a string *s*

of length *n*

consisting of uppercase English letters, denoting the order of solved problems.

Output

For each test case, output a single integer — the total number of balloons that the teams received.

Example

Input

Copy

6

3

ABA

1

A

3

ORZ

5

BAAAA

4

BKPT

10

CODEFORCES

Output

Copy

5

2

6

7

8

17

Note

In the first test case, 5

balloons are given out:

* Problem A

is solved. That team receives 2 balloons: one because they solved the problem, an an additional one because they are the first team to solve problem A

 .

 Problem B is solved. That team receives 2 balloons: one because they solved the problem, an an additional one because they are the first team to solve problem B

 .

 Problem A is solved. That team receives only 1 balloon, because they solved the problem. Note that they don't get an additional balloon because they are not the first team to solve problem A

* .

The total number of balloons given out is 2+2+1=5.

In the second test case, there is only one problem solved. The team who solved it receives 2

balloons: one because they solved the problem, an an additional one because they are the first team to solve problem A.

Code:

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. int n;
19. cin>>n;
20. fo(n){
21. int x;
22. cin>>x;
23. string s;
24. cin>>s;
25. sort(s.begin(),s.end());
26. int sum=2;
27. for(int j=1;j<(s.size());j++){
28. if(s[j]==s[j-1]){
29. sum=sum+1;
30. }
31. else{
32. sum=sum+2;
33. }
34. }
35. cout<<sum<<endl;
36. }
37. return 0;
38. }

15. <https://codeforces.com/group/MWSDmqGsZm/contest/329103/problem/G>

You are given an array *a* of *n*

integers. You have two kinds of operations

1. increment any element in *a*

 (increase it by one).

 decrement any element in *a*

1. (decrease it by one).

What is the minimum number of operations to make the number of even elements equal to the number of odd elements, or detect that this is impossible?

Input

The first line contains a single integer *t*(1≤*t*≤10)

the number of test cases.

The first line of each test case contains an integer *n*(1≤*n*≤105)

the number of elements in the array *a*

.

The second line of each test case contains *n*

integers *ai*(1≤*ai*≤105) the elements of the array *a*

.

Output

For each test case, print the minimum number of operations required, or −1

if it's impossible

Example

Input

Copy

3

4

1 2 3 4

4

1 1 1 1

3

1 2 3

Output

Copy

0

2

-1

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. int n;
19. cin>>n;
20. fo(n){
21. int N;
22. cin>>N;
23. int a[N];
24. int oo=0,ee=0;
25. for(int j=0;j<N;j++){
26. cin>>a[j];
27. if(a[j]%2==0){
28. ee++;
29. }
30. else{
31. oo++;
32. }
34. }
35. if(N%2!=0)
36. cout<<-1<<endl;
37. else{
38. int nn=N/2;
39. if(ee<nn)
40. cout<<nn-ee<<endl;
41. else
42. cout<<nn-oo<<endl;
43. }
44. }
45. return 0;
46. }

16. <https://codeforces.com/group/MWSDmqGsZm/contest/223205/problem/H>

Given a number *N* and a character *C*. Print the character(*C*) *N*

times.

Note: Solve this problem using function.

Input

The first line contains a number *T*

(1≤*T*≤50)

the number of test cases.

Next *T*

lines contains a number *N* and a character *C* (1≤*N*≤100)

.

Output

Print *T*

lines, for every line print the character(*C*) *N*

times separated by space.

Examples

Input

Copy

2

1 n

5 O

Output

Copy

n

O O O O O

Input

Copy

1

8 z

Output

Copy

z z z z z z z z

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
16. int main()
17. {
18. int n;
19. cin>>n;
20. fo(n){
21. int N;
22. char c;
23. cin>>N>>c;
24. for(int j=0;j<N;j++){
25. cout<<c<<" ";
26. }
27. cout<<endl;
28. }
30. return 0;
31. }

17. <https://codeforces.com/group/MWSDmqGsZm/contest/219158/problem/M>

Given a letter *X*. Determine whether *X* is Digit or Alphabet and if it is Alphabet determine if it is Capital Case or Small Case.

Note:

* Digits in ASCII '0' = 48,'1' = 49 ....etc
* Capital letters in ASCII 'A' = 65, 'B' = 66 ....etc
* Small letters in ASCII 'a' = 97,'b' = 98 ....etc

Input

Only one line containing a character *X* which will be a capital or small letter or digit.

Output

Print a single line contains "IS DIGIT" if *X* is digit otherwise, print "ALPHA" in the first line followed by a new line that contains "IS CAPITAL" if *X* is a capital letter and "IS SMALL" if *X* is a small letter.

Examples

Input

Copy

A

Output

Copy

ALPHA  
IS CAPITAL

Input

Copy

9

Output

Copy

IS DIGIT

Input

Copy

a

Output

Copy

ALPHA  
IS SMALL

Note

18. <https://codeforces.com/group/MWSDmqGsZm/contest/219158/submission/293433537>

Given two numbers *X* and *Y*. Print the summation and multiplication and subtraction of these 2 numbers.

Input

Only one line containing two separated numbers *X*, *Y* (1  ≤  *X*, *Y*  ≤  105).

Output

Print 3 lines that contain the following in the same order:

1. "*X* + *Y* = summation result" without quotes.
2. "*X* \* *Y* = multiplication result" without quotes.
3. "*X* - *Y* = subtraction result" without quotes.

Example

Input

Copy

5 10

Output

Copy

5 + 10 = 15  
5 \* 10 = 50  
5 - 10 = -5

Note

Be careful with spaces.

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. #define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. void solve(){
16. }
17. int main()
18. {
19. ll x,y;
20. cin>>x>>y;
21. cout<<x<<" + "<<y<<" = "<<x+y<<endl;
22. cout<<x<<" \* "<<y<<" = "<<x\*y<<endl;
23. cout<<x<<" - "<<y<<" = "<<x-y<<endl;
24. return 0;
25. }

19. <https://codeforces.com/group/MWSDmqGsZm/contest/219774/problem/F>

Given a number *N* and an array *A* of *N* numbers. Print the array in a reversed order.

Note:

\*Don't use built-in-functions.

Input

First line contains a number *N* (1 ≤ *N* ≤ 103) number of elements.

Second line contains *N* numbers (0 ≤ *Ai* ≤ 109).

Output

Print the array in a reversed order.

Examples

Input

Copy

4  
5 1 3 2

Output

Copy

2 3 1 5

Input

Copy

5  
1 2 3 4 5

Output

Copy

5 4 3 2 1

1. #include <bits/stdc++.h>
2. using namespace std;
3. int main(){
5. int n;
6. cin>>n;
7. vector<int>v(n);
8. for(int i=0;i<n;i++){
9. cin>>v[i];
10. }
11. for(int i=0;i<n/2;i++){
12. swap(v[i],v[n-i-1]);
13. }
14. for(int x:v){
15. cout<<x<<" ";
16. }
18. return 0;
19. }

20. <https://codeforces.com/group/MWSDmqGsZm/contest/219432/problem/E>

Given a number *N*, and *N* numbers, find maximum number in these *N* numbers.

Input

First line contains a number *N* (1 ≤ *N* ≤ 103).

Second line contains *N* numbers *Xi* (0 ≤ *Xi* ≤ 109).

Output

Print the maximum number.

Example

Input

Copy

5  
1 8 5 7 5

Output

Copy

8

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. void solve(){
16. }
17. int main()
18. {
19. ll n;
20. cin>>n;
21. ll a[n];
22. fo(n){
23. cin>>a[i];
24. }
25. ll m=0;
26. fo(n){
27. m=max(m,a[i]);
28. }
29. cout<<m<<endl;
30. return 0;
31. }

21. <https://codeforces.com/group/MWSDmqGsZm/contest/219158/problem/K>

Given 3 numbers *A*, *B* and *C*, Print the minimum and the maximum numbers.

Input

Only one line containing 3 numbers *A*, *B* and *C* ( - 105 ≤ *A*, *B*, *C* ≤ 105)

Output

Print the minimum number followed by a single space then print the maximum number.

Examples

Input

Copy

1 2 3

Output

Copy

1 3

Input

Copy

-1 -2 -3

Output

Copy

-3 -1

Input

Copy

10 20 -5

Output

Copy

-5 20

Code:

1. //Rabbi Zidni ilma
2. #include<bits/stdc++.h>
3. #define ull unsigned long long
4. #define ll long long
5. #define fo(n) for(int i=0;i<n;i++)
6. #define ci(x) cin>>x
7. #define co(x) cout<<x<<endl
8. #define llmax (1ll<<62)
9. //#define max (1<<30)
10. #define SetBit(x, k) (x |= (1LL << k))
11. #define ClearBit(x, k) (x &= ~(1LL << k))
12. #define CheckBit(x, k) (x & (1LL << k))
13. using namespace std;
14. const int N=1e7+10;
15. void solve(){
16. }
17. int main()
18. {
19. ll n=3;
20. ll a[n];
21. fo(n){
22. cin>>a[i];
23. }
24. ll m=a[0],mi=a[0];
25. fo(n){
26. m=max(m,a[i]);
27. mi=min(mi,a[i]);
28. }
29. cout<<mi<<" "<<m<<endl;
30. return 0;
31. }

22. <https://www.hackerrank.com/contests/mid-term-a-introduction-to-c-for-dsa/challenges/sort-it-6-3>

You will be given an array **A** of size **N**. Initially, you need to print the array by sorting it in ascending order. Afterward, you need to print the array sorted in descending order.

**Input Format**

* First line will contain **N**.
* Next line will contain the array **A**.

**Constraints**

1. 1 <= **N** <= 10^5
2. -10^9 <= **A[i]** <= 10^9 Where 0 <= i < N

**Output Format**

* Print two lines. First line will contain the array sorted in ascending order. Next line will contain the array sorted in descending order.

**Sample Input 0**

5

2 4 6 1 3

**Sample Output 0**

1 2 3 4 6

6 4 3 2 1

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n;

cin>>n;

int a[n];

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

cin>>a[i];

}

sort(a,a+n);

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

cout<<a[i]<<" ";

}

cout<<endl;

sort(a,a+n,greater<int>());

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

cout<<a[i]<<" ";

}

cout<<endl;

return 0;

}

23. <https://www.hackerrank.com/contests/mid-term-a-introduction-to-c-for-dsa/challenges/sort-it-2-1-1>

You will be given an array **A** and the size of that array **N**. You need to create a function named **sort\_it()**. After taking the input for the size in main function, call that function by giving the size as parameter and take the array input inside that function. After that, you need to sort the array in descending order. Then, return that array from the function and receive it in the main function. Finally, print the sorted array in the main function.

**Input Format**

* First line will contain **N**.
* Second line will contain the array **A**.

**Constraints**

1. 1 <= **N** <= 10^5
2. -10^9 <= **A[i]** <= 10^9 Where 0 <= i < N

**Output Format**

* Ouptut the array in descending order.

**Sample Input 0**

5

1 4 2 3 5

**Sample Output 0**

5 4 3 2 1

#include <bits/stdc++.h>

using namespace std;

int n;

int \*sort\_it(int n){

int \*a=new int[n];

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

cin>>a[i];

}

sort(a,a+n,greater<int>());

return a;

}

int main()

{

cin>>n;

int \*x=sort\_it(n);

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

cout<<x[i]<<" ";

}

cout<<endl;

return 0;

}

24. <https://www.hackerrank.com/contests/mid-term-a-introduction-to-c-for-dsa/challenges/monkey-1-2>

**Amena** has just learned alphabets. She can read write from **a** to **z** only in lowercase. But, Amena always writes in alphabetic order (alphabetic order means from a to z in sorted order) what she saw. Also she writes a line as a word. For example, she writes monkey as ekmnoy. Her mother wants to test her reading and writing skills. Her mother gave her some lines, can you tell what she will write?

**Note**: Input will be given by **EOF**.

**Input Format**

* Input consist of a line **S**. The line will contain lowercase letters and spaces. It is possible that there are multiple spaces together and the line end with spaces.

**Constraints**

1. 1 <= **|S|** <= 10^5

**Output Format**

* Output what Amena will write.

**Sample Input 0**

monkey

i love flower

**Sample Output 0**

ekmnoy

eefilloorvw

#include <bits/stdc++.h>

using namespace std;

int main() {

string line;

while (getline(cin, line)) {

line.erase(remove(line.begin(), line.end(), ' '), line.end());

sort(line.begin(), line.end());

cout << line << endl;

}

return 0;

}

1. <https://www.hackerrank.com/contests/mid-term-a-introduction-to-c-for-dsa/challenges/who-is-it-4>

A student has several pieces of information, such as a unique ID, name, section, and total marks. You will be given the information of three students. Your task is to determine and print the details of the student who achieved the highest total marks. In the case of a tie (i.e., two or more students having the same total marks), print the information of the student with the smaller ID.

**Input Format**

* First line will contain **T**, the number of test cases.
* For each test case there will be 3 lines. Each line will contain - ID, Name, Section, Total Marks of a student. The name will contain lowercase English alphabets only.

**Constraints**

1. 1 <= **T** <= 1000
2. 1 <= **ID** <= 3
3. 1 <= **|Name|** <= 100
4. 'A' <= **Section** <= 'Z'
5. 0 <= **Total Marks** <= 100

**Output Format**

* Ouptut the information as asked in the question.

**Sample Input 0**

3

1 sakib A 50

2 rakib D 96

3 akib C 90

1 sakib A 50

2 rakib D 96

3 akib C 96

1 sakib A 50

2 rakib D 50

3 akib C 40

**Sample Output 0**

2 rakib D 96

2 rakib D 96

1 sakib A 50

#include<bits/stdc++.h>

using namespace std;

# define opt() ios\_base::sync\_with\_stdio(0);cin.tie(0);cout.tie(0);

# define ll long long

# define endl '\n'

class Student

{

public:

int id;

char name[100];

char sec;

int mark;

};

int main()

{

opt();

int t;

cin>>t;

while(t--)

{

Student a,b,c;

cin>>a.id>>a.name>>a.sec>>a.mark;

cin>>b.id>>b.name>>b.sec>>b.mark;

cin>>c.id>>c.name>>c.sec>>c.mark;

if(a.mark>=b.mark && a.mark>=c.mark)

{

cout<<a.id<<" "<<a.name<<" "<<a.sec<<" "<<a.mark<<endl;

}

else if(b.mark>=c.mark && b.mark>a.mark)

{

cout<<b.id<<" "<<b.name<<" "<<b.sec<<" "<<b.mark<<endl;

}

else if(c.mark>a.mark && c.mark>b.mark)

{

cout<<c.id<<" "<<c.name<<" "<<c.sec<<" "<<c.mark<<endl;

}

}

}

1. <https://www.hackerrank.com/contests/mid-term-a-introduction-to-c-for-dsa/challenges/choose-three>

You will be given an array **A** and the size of that array **N**. Additionally, you will be given a sum **S**. Your task is to determine whether it is possible to select three distinct indexed values from the array such that their summation equals **S**.

**Input Format**

* First line will contain **T**, the number of test cases.
* First line of each test case will contain **N** and **S**.
* Second line of each test case will contain the array **A**.

**Constraints**

1. 1 <= **T** <= 100
2. 1 <= **N** <= 100
3. 1 <= **S** <= 1000
4. 1 <= **A[i]** <= 1000 Where 0 <= i < N

**Output Format**

* Output "**YES**" if it is possible, otherwise output "**NO**".

**Sample Input 0**

5

5 10

1 2 3 4 5

5 6

4 2 3 5 4

3 6

2 2 2

4 4

2 8 1 5

1 3

1

**Sample Output 0**

YES

NO

YES

NO

NO

**Explanation 0**

In the first test case, we can make 10 by adding 5+4+1. There are other ways too.

In the second test case, it is not possible to make 6 by adding three different indexed values from the array.

In the third case, it is possible to make 6 by using three different indexed values.

#include <bits/stdc++.h>

using namespace std;

int main() {

int x;

cin >> x;

while (x--) {

int n, s;

cin >> n >> s;

vector<int> a(n);

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

cin >> a[i];

}

sort(a.begin(), a.end());

bool found = false;

for (int i = 0; i < n - 2; i++) {

int left = i + 1, right = n - 1;

while (left < right) {

int currentSum = a[i] + a[left] + a[right];

if (currentSum == s) {

found = true;

break;

} else if (currentSum < s) {

left++;

} else {

right--;

}

}

if (found) break;

}

if (found)

cout << "YES" << endl;

else

cout << "NO" << endl;

}

return 0;

}

28. <https://www.hackerrank.com/contests/final-exam-a-introduction-to-c-for-dsa-a-batch-06/challenges/replace-word>

You will be given two strings **S** and **X**. You need to replace all **X** from string **S** with a **'#'** sign.

**Input Format**

* First line will contain **T**, the number of test cases.
* Next **T** lines will contain a line with **S** and **X**.

**Constraints**

1. 1 <= **T** <= 1000
2. 1 <= **|S|**, **|X|** <= 1000
3. **|X|** <= **|S|**

**Output Format**

* For each test cases output the modified string **S**.

**Sample Input 0**

2

rahimisagoodguy good

canyoutellmewhereicanfindheriwillbegreatefultoyouifyoutellmetheanswer you

**Sample Output 0**

rahimisa#guy

can#tellmewhereicanfindheriwillbegreatefulto#if#tellmetheanswer

#include <bits/stdc++.h>

using namespace std;

int main()

{

int n;

cin>>n;

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

string x,s;

cin>>s>>x;

int l=x.size();

int p=s.find(x);

while(p!=-1){

s.replace(p,l,"#");

p=s.find(x);

}

cout<<s<<endl;

}

return 0;

}

29. <https://www.hackerrank.com/contests/final-exam-a-introduction-to-c-for-dsa-a-batch-06/challenges/find-jessica>

Write a program to determine if a given string contains the word "**Jessica**." If the word is present in the string, the program should output "**YES**," otherwise it should output "**NO**."

**NOTE**: You need to find only "Jessica"; not "jessica" or "JeSsica" or any other form. Words are separated by spaces.

**Input Format**

* Input will contain a string **S** containing names. There is a space in between two names.

**Constraints**

1. 1 <= |**S**| <= 1000; Here |S| means the length of the string.

**Output Format**

* Output **YES** or **NO** according to the question.

**Sample Input 0**

Rahat Rifat Sakib Asif Sifat Jessica Ratul Munna

**Sample Output 0**

YES

**Sample Input 1**

Rahat Rifat Sakib Asif Sifat Ratul Munna

**Sample Output 1**

NO

**Sample Input 2**

Rahat Rifat Sakib Asif jessica Sifat Ratul Munna

**Sample Output 2**

NO

**Sample Input 3**

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**Sample Output 3**

NO

#include <bits/stdc++.h>

using namespace std;

int main()

{

string s;

getline(cin,s);

stringstream ss(s);

string word;

while(ss>>word){

if(word=="Jessica"){

cout<<"YES"<<endl;

return 0;

}

}

cout<<"NO"<<endl;

return 0;

}

30. <https://www.hackerrank.com/contests/final-exam-a-introduction-to-c-for-dsa-a-batch-06/challenges/reverse-it-8-2>

You will be given data for **N** students, where each student will have a name (**nm**), class (**cls**), section (**s**) and student ID (**id**). The Headmaster decided to change the sections of the students. He wants to reverse their sections. Now he needs your help to do so.

Your task is reverse their section and print all the students data. That means the section of the first student will be replaced by the section of the last student, the section of the second student will be replaced by the section of the second last student and so on. See the sample input and output for more clarifications.

**Input Format**

* First line will contain **N**.
* Next **N** lines will contain **nm**, **cls**, **s**, and **id** respectively.

**Constraints**

1. 1 <= **N** <= 100
2. 1 <= **|nm|** <= 100 and will contain only English alphabets.
3. 1 <= **cls** <= 10
4. 'A' <= **s** <= 'Z'
5. 1 <= **id** <= 100

**Output Format**

* Output all the students data after reversing their section.

**Sample Input 0**

3

Rakib 7 B 90

Sakib 10 A 85

Ahsan 9 C 36

**Sample Output 0**

Rakib 7 C 90

Sakib 10 A 85

Ahsan 9 B 36

**Sample Input 1**

4

Munna 8 D 10

Shojoy 9 E 11

Asif 10 C 12

Joy 9 G 13

**Sample Output 1**

Munna 8 G 10

Shojoy 9 C 11

Asif 10 E 12

Joy 9 D 13

#include <bits/stdc++.h>

using namespace std;

class Student{

public:

string name;

int cls;

char s;

int id;

};

int main()

{

int n;

cin>>n;

Student a[n];

char x[n];

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

cin>>a[i].name>>a[i].cls>>a[i].s>>a[i].id;

x[i]=a[i].s;

}

//reverse(a,a+n);

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

cout<<a[i].name<<" "<<a[i].cls<<" "<<x[n-i-1]<<" "<<a[i].id<<endl;

}

return 0;

}

1. <https://www.hackerrank.com/contests/final-exam-a-introduction-to-c-for-dsa-a-batch-06/challenges/sort-it-6-2>

You will be given data for **N** students, where each student will have a name (**nm**), class (**cls**), section (**s**), student ID (**id**), math marks (**math\_marks**), and English marks (**eng\_marks**).

Your task is to sort the students data according to the **total marks** (sum of math\_marks and eng\_marks) in descending order. If multiple student have the same total marks then sort them according to the id in ascending order as the id will be unique.

**Input Format**

* First line will contain **N**.
* Next **N** lines will contain **nm**, **cls**, **s**, **id**, **math\_marks** and **eng\_marks** respectively.

**Constraints**

1. 1 <= **N** <= 100
2. 1 <= **|nm|** <= 100 and will contain only English alphabets.
3. 1 <= **cls** <= 10
4. 'A' <= **s** <= 'Z'
5. 1 <= **id** <= 1000
6. 0 <= **math\_marks**, **eng\_marks** <= 100

**Output Format**

* Output the students data in descending order according to the total marks.

**Sample Input 0**

5

Munna 8 D 25 50 30

Shojoy 9 E 26 40 50

Asif 10 C 27 55 60

Joy 9 G 28 66 45

Bijoy 7 E 29 68 99

**Sample Output 0**

Bijoy 7 E 29 68 99

Asif 10 C 27 55 60

Joy 9 G 28 66 45

Shojoy 9 E 26 40 50

Munna 8 D 25 50 30

**Sample Input 1**

6

Munna 8 D 30 50 40

Shojoy 9 E 25 40 50

Asif 10 C 27 55 60

Joy 9 G 28 66 45

Bijoy 7 E 29 68 99

Khadija 8 E 26 40 50

**Sample Output 1**

Bijoy 7 E 29 68 99

Asif 10 C 27 55 60

Joy 9 G 28 66 45

Shojoy 9 E 25 40 50

Khadija 8 E 26 40 50

Munna 8 D 30 50 40

#include <bits/stdc++.h>

using namespace std;

class Student{

public:

string nm;

int cls;

char s;

int id;

int math\_marks;

int english\_marks;

};

bool cmp(Student l,Student r){

if((l.math\_marks+l.english\_marks)==(r.math\_marks+r.english\_marks)){

return l.id<r.id;

}

else

return (l.math\_marks+l.english\_marks)>(r.math\_marks+r.english\_marks);

}

int main()

{

int n;

cin>>n;

Student a[n];

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

cin>>a[i].nm>>a[i].cls>>a[i].s>>a[i].id>>a[i].math\_marks>>a[i].english\_marks;

}

sort(a,a+n,cmp);

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

cout<<a[i].nm<<" "<<a[i].cls<<" "<<a[i].s<<" "<<a[i].id<<" "<<a[i].math\_marks<<" "<<a[i].english\_marks<<endl;

}

return 0;

}

1. <https://www.hackerrank.com/contests/final-exam-a-introduction-to-c-for-dsa-a-batch-06/challenges/sort-it-again>

You will be given data for **N** students, where each student will have a name (**nm**), class (**cls**), section (**s**), student ID (**id**), math marks (**math\_marks**), and English marks (**eng\_marks**).

Your task is to sort the students data according to the **eng\_marks** in descending order. If multiple student have the same eng\_marks then sort them according to the **math\_marks** in descending order. If multiple student have the same math\_marks then sort them accoding to the id in ascending order as the id will be unique.

**Input Format**

* First line will contain **N**.
* Next **N** lines will contain **nm**, **cls**, **s**, **id**, **math\_marks** and **eng\_marks** respectively.

**Constraints**

1. 1 <= **N** <= 1000
2. 1 <= **|nm|** <= 100 and will contain only English alphabets.
3. 1 <= **cls** <= 10
4. 'A' <= **s** <= 'Z'
5. 1 <= **id** <= 10^9
6. 0 <= **math\_marks**, **eng\_marks** <= 100

**Output Format**

* Output the data in sorted order as instructed.

**Sample Input 0**

6

akib 2 R 1001 32 53

rakib 1 E 1002 93 97

sakib 8 M 1003 34 88

bokib 3 Q 1004 93 58

jessica 4 F 1005 94 88

noname 8 R 1006 17 61

**Sample Output 0**

rakib 1 E 1002 93 97

jessica 4 F 1005 94 88

sakib 8 M 1003 34 88

noname 8 R 1006 17 61

bokib 3 Q 1004 93 58

akib 2 R 1001 32 53

**Sample Input 1**

6

akib 2 R 1001 32 53

rakib 1 E 1002 94 88

sakib 8 M 1003 34 88

bokib 3 Q 1004 93 58

jessica 4 F 1005 94 88

noname 8 R 1006 17 61

**Sample Output 1**

rakib 1 E 1002 94 88

jessica 4 F 1005 94 88

sakib 8 M 1003 34 88

noname 8 R 1006 17 61

bokib 3 Q 1004 93 58

akib 2 R 1001 32 53

#include <bits/stdc++.h>

using namespace std;

class Student{

public:

string nm;

int cls;

char s;

int id;

int math\_marks;

int english\_marks;

};

bool cmp(Student l,Student r){

if(l.math\_marks==r.math\_marks && l.english\_marks==r.english\_marks){

return l.id<r.id;

}

else if(l.english\_marks==r.english\_marks){

return l.math\_marks>r.math\_marks;

}

else{

return l.english\_marks>r.english\_marks;

}

}

int main()

{

int n;

cin>>n;

Student a[n];

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

cin>>a[i].nm>>a[i].cls>>a[i].s>>a[i].id>>a[i].math\_marks>>a[i].english\_marks;

}

sort(a,a+n,cmp);

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

cout<<a[i].nm<<" "<<a[i].cls<<" "<<a[i].s<<" "<<a[i].id<<" "<<a[i].math\_marks<<" "<<a[i].english\_marks<<endl;

}

return 0;

}