**BÁO CÁO PROJECT 1**

**WEEK 1**

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# **Hoàn Thành 14/14**

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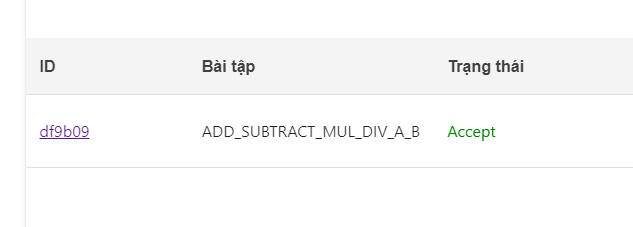
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# **Problem: Week 1 - Add Subtract Multiplication Division of A and B**



#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int a, b;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> a >> b;

cout << a + b <<" "<<a-b<<" "<<a\*b<<" "<<a/b;

return 0;

}

# **Problem: Week 1 - Basic queries on array**

# **A screenshot of a phone Description automatically generated**

\*Đoạn tìm max trong đoạn với giới hạn lớn có thể sử dụng RMQ, IT, BIT để xử lý

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> n;

for(int i = 1; i <= n; i++)

{

cin >> a[i];

maxx = max(maxx, a[i]);

minx = min(minx, a[i]);

sum += a[i];

}

char c;

cin >> c;

string s;

while(cin >> s)

{

if(s == "\*\*\*") return 0;

if(s == "find-max") cout << maxx;

else

if(s == "find-min") cout << minx;

else

if(s == "sum") cout << sum;

else

{

int u, v;

cin >> u >> v;

int max1 = -1e9;

for(int i = u; i <= v; i++)

max1 = max(max1, a[i]);

cout << max1;

}

cout <<"\n";

}

return 0;

}

# **Problem: Week 1 - List sequence of integer having 3 digits divisible by n**

A screenshot of a computer

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> n;

int h = 100/n;

for(int i = h; i <= 100000; i++)

{

if(n\*i >= 100 && n\*i <= 999) cout << n\*i <<" ";

}

return 0;

}

# **Problem: Week 1 - Sum Array**

A screenshot of a computer

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> n;

for(int i = 1; i <= n;i++)

{

cin >> a[i];

sum += a[i];

}

cout << sum;

}

# **Problem: Week 1 - Convert a TEXT to Upper-Case**

A screenshot of a computer

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

string s;

while(getline(cin, s))

{

for(int i = 0; i < s.length(); i++)

{

if(s[i] >= 'a' && s[i] <= 'z') s[i] -= ('a' - 'A');

}

cout << s <<"\n";

}

}

# **Problem: Week 1 - k-Subsequence even**

A screenshot of a computer

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

int k;

cin >> n >> k;

for(int i = 1; i <= n; i++)

{

cin >> a[i];

a[i] += a[i - 1];

}

int dem = 0;

for(int i = k; i <=n; i++)

{

//cout << i << " " <<k<<" ";

//cout << (a[i] - a[i-k]) <<" ";

if ((a[i] - a[i-k]) % 2 == 0) dem++;

}

cout << dem;

}

# **Problem: Week 1 - Count words**

A screenshot of a phone

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

string s;

int dem = 0;

while(getline(cin, s))

{

s = " " + s;

for(int i = 1; i < s.length(); i++)

if (s[i-1] == ' ' && s[i] != ' ')

{

//cout << dem <<" ";

dem++;

}

}

cout << dem;

}

# **Problem: Week 1 - Text Replacement**

A screenshot of a computer

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

string T, s1, s2;

getline(cin, T);

getline(cin, s1);

getline(cin, s2);

int k = T.length();

for(int i = 0; i < s2.length(); i++)

{

string s3 = s2.substr(i, k);

if(s3 == T)

{

cout << s1 <<" ";

i += k;

}

else cout << s2[i];

}

}

# **Problem: Week 1 - Solve degree-2 polynomial equation**

A screenshot of a computer

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

double a, b, c;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> a >> b >> c;

double delta = b\*b - 4\*a\*c;

if(a == 0)

{

if(b == 0) cout << "NO SOLUTION";

else cout << fixed << setprecision(2) << -c/b;

}

if(delta < 0)

{

cout << "NO SOLUTION";

}

else

{

if(delta == 0)

{

cout << fixed << setprecision(2) << -b/(2\*a);

}

else

{

double x1 = (-b +sqrt(delta))/(2\*a);

double x2 = (-b -sqrt(delta))/(2\*a);

if(x2 < x1) swap(x1, x2);

cout << fixed << setprecision(2) << x1 <<" "<<x2;

}

}

}

# **Problem: Week 1 - Extract Year, Month, Date from a String YYYY-MM-DD**

A screenshot of a phone

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int doi(char x)

{

return (x - '0');

}

double a, b, c;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

//freopen(Task".inp", "r", stdin);

//freopen(Task".out", "w", stdout);

}

string s;

cin >> s;

//2024/24/06

if(s.length() != 10 || s[4] != '-' || s[7] != '-')

{

cout <<"INCORRECT";

return 0;

}

int nam = doi(s[0]) \* 1000 + doi(s[1])\*100 + doi(s[2])\*10 + doi(s[3]);

int thang = doi(s[5])\*10 + doi(s[6]);

int ngay = doi(s[8])\*10 + doi(s[9]);

if(1<= ngay && ngay <= 31)

{

if(1<= thang && thang <= 12)

{

if(thang == 2 && ngay >= 29)

{

if(nam % 4 == 0 && ngay == 29) cout <<"CORRECT";

else cout <<"INCORRECT";

return 0;

}

if(ngay > 30 && (thang == 2 || thang == 4 || thang == 6 || thang == 9 || thang == 11))

{

cout <<"INCORRECT";

return 0;

}

cout << nam <<" "<<thang <<" "<<ngay;

return 0;

}

else cout <<"INCORRECT";

}

else cout <<"INCORRECT";

}

# **Problem: Week 1 - List all numbers from 1 to n and its squares**

A screenshot of a computer

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

int n;

cin >> n;

for(int i = 1; i <= n; i++)

{

cout << i <<" "<<i\*i<<"\n";

}

}

# **Problem: Week 1 - Count odd and even number from a sequence**

A screenshot of a computer

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#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

int n;

cin >> n;

int dem = 0;

for(int i = 1; i <= n; i++)

{

cin >> a[i];

if(a[i] % 2 == 0) dem++;

}

cout << n - dem <<" "<<dem;

}

# **Problem: Week 1 - Convert hh:mm:ss to seconds**

A screenshot of a computer

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

int n, a[100005];

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

string s;

cin >> s;

int n = s.length();

if ( n != 8|| s[2]!=':' || s[5] != ':')

{

cout <<"INCORRECT";

return 0;

}

int gio = (s[0] - '0')\*10 + (s[1] - '0');

int phut = (s[3] - '0')\*10 + (s[4] - '0');

int giay = (s[6] - '0')\*10 + (s[7] - '0');

int ans = gio\*3600 + phut\*60 + giay;

if(gio < 0 || gio >= 24)

{

cout <<"INCORRECT";

return 0;

}

if(phut < 0 || phut >= 60)

{

cout <<"INCORRECT";

return 0;

}

if(giay < 0 || giay >= 60)

{

cout <<"INCORRECT";

return 0;

}

cout << ans;

}

# **Problem: Week 1 - So sánh chênh lệch giá điện theo đề xuất mới của EVN**

A screenshot of a computer

Description automatically generated

#include <bits/stdc++.h>

#define Task "bai1"

using namespace std;

double n, a[100005], ans = 0;

int maxx = -1e9, minx = 1e9, sum = 0;

int main()

{

ios\_base::sync\_with\_stdio(NULL);

cin.tie(NULL);cout.tie(NULL);

if(fopen(Task".inp", "r"))

{

freopen(Task".inp", "r", stdin);

freopen(Task".out", "w", stdout);

}

cin >> n;

if(n <= 50)

{

ans = 0;

}

if(n >= 51 && n <= 100)

{

ans = 50\*1728 + (n - 50)\*1786 - 1728\*n;

}

if(n >= 101 && n <= 200)

{

ans = 50\*1728 + 50\*1786 + (n - 100) \* 2074 - (1728\*100 + (n-100)\*2074) ;

}

if(n >= 201 && n <= 300)

{

ans = 50\*1728 + 50\*1786 + 100 \* 2074 + (n - 200)\*2612 - (1728\*100 + (100)\*2074 + (n - 200)\*2612);

}

if(n >= 301 && n <= 400)

{

ans = 50\*1728 + 50\*1786 + 100 \* 2074 + 100\*2612 + (n - 300)\*2919 - (1728\*100 + (100)\*2074 + (n - 200)\*2612);

}

if(n >= 401 && n <= 700)

{

ans = 50\*1728 + 50\*1786 + 100 \* 2074 + 100\*2612 + 100\*2919+(n - 400)\*3015 - (1728\*100 + (100)\*2074 + (200)\*2612+(n-400)\*3111);

}

if(n >= 701)

{

ans = 50\*1728 + 50\*1786 + 100 \* 2074 + 100\*2612 + 100\*2919+(n - 400)\*3015 - (1728\*100 + (100)\*2074 + (200)\*2612+300\*3111+(n-700)\*3457);

}

if(ans == 0) cout << fixed << setprecision(2) <<ans;

else

cout << fixed << setprecision(2) << -(ans + ans/10);

}