Worksheet 4

Domain Winter Winning Camp

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Section: DWWC - 43   **Date of Performance:** 6th Jan, 2023
Subject Name: IT Skills

1. That is my Score!

Code:

```
{
    int t;
    cin >> t;

    while (t--)
    {
        int n;
        cin >> n;
        int arr[12] = {0};

        for (int i = 0; i < n; i++)
        {
            int pi, si;
            cin >> pi >> si;

            if (arr[pi] < si)
            {
                arr[pi] = si;
            }

            if (pi == 1 && pi == 8)
            {
                if (arr[pi] < si)
                {
```

```cpp
                arr[pi] = si;
            }
        }
    }

    int ans = 0;

    for (int i = 0; i < 9; i++)
    {
        ans = ans + arr[i];
    }

    cout << ans;
    cout << endl;
    }

    return 0;
}
```

Output:

2. Temple Land

Code:

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

int main()
{
    int t;
    cin >> t;
    while (t--)
    {
        int n;
        cin >> n;
        int arr[n];
```

```cpp
    for (int i = 0; i < n; i++)
    {
        cin >> arr[i];
    }

    if (n % 2 == 0 || arr[0] != 1 || arr[n - 1] != 1) cout << "no" << endl;
    else
    {
        int flag = 0;
        int mid = n / 2;
        for (int i = 0; i < mid; i++)
        {
            if (arr[i] + 1 != arr[i + 1]) flag++;
        }
        for (int i = mid; i < n - 1; i++)
        {
            if (arr[i] - 1 != arr[i + 1]) flag++;
        }
        if (flag == 0)
        {
            cout << "yes" << endl;
        }
        else
        {
            cout << "no" << endl;
        }
    }
    return 0;
}
```

Output:

3. Pairwise and Sum

Code:

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

int main() {
    long sum[30] = {};
    int N,a;
    long ans = 0;
    cin>>N;
    for(int i=0; i<N; i++){
        cin>>a;
        ans-=a;
        for(int j=0; a; a=a>>1, j++){
            if(a&1) sum[j]++;
        }
    }
    for(int j=0; j<30; j++){
        ans+=(sum[j]*sum[j])<<j;
    }
    cout<<ans/2<<endl;
        return 0;
}
```

Output:

Status: ✔ Correct Answer		**Submission ID:** 84901095

Score:	Time:	Memory:
100	0.03s	5.3M

Sub-Task	Task #	Result (time)
1	0	AC (0.003796)
1	1	AC (0.003797)
Subtask Score: 13.00%		**Result - AC**
2	2	AC (0.004093)
2	3	AC (0.004020)
Subtask Score: 39.00%		**Result - AC**
3	4	AC (0.013698)
Subtask Score: 21.00%		**Result - AC**
4	5	AC (0.030682)
4	6	AC

4. Roads in Chef land
Code:

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

int main()
{
    long long t, n, cost, v;
    cin >> t;
    while (t--)
    {
        cin >> n;
        cost = 0;
        if (!(n & (n - 1)))
        {
            cout << "-1\n";
            continue;
        }
        for (int i = 1; i <= n; i <<= 1)
        {
            v = (n - i) / (i << 1);
            cost += v * i + i;
        }
        cost--;
        cout << cost << "\n";
    }
    return 0;
}
```

Output:

5. Long Long Sum
Code:

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

int main() {
    int n;
    cin>>n;
    long long int a[n],sum=0;
    for(int i=0;i<n;i++){
        cin>>a[i];
    }

    for(int i=0;i<n;i++){
        sum+=a[i];
    }
    cout<<sum<<endl;
    return 0;
}
```

Output:

6. Gold Collection

Code:

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

int main() {
    int t;
    scanf("%d",&t);
    while(t--)
    {
        int n;
    scanf("%d",&n);

            int arr[n];
```

```c
for(int i=0;i<n;i++)
{
    scanf("%d",&arr[i]);
}
for(int i=1;i<n;i++)
{
    arr[i]+=arr[i-1];
}
int q;
scanf("%d",&q);
for(int i=0;i<q;i++)
{
    int q1,q2;
    scanf("%d%d",&q1,&q2);
    if(q1==1)
    {
        printf ("%d\n" ,arr[q2-1]);
    }
    else
    {
        printf("%d\n" ,  arr[q2-1]-arr[q1-2]);
    }
}
}
    return 0;
}
```

Output:

7. Cyclothon

Code:

```cpp
#include <bits/stdc++.h>
using namespace std;

int main() {
    // your code goes here
    int t;
    cin >> t;
    while(t--)
    {
        int a,b;
        cin >> a >> b;
        int n = b - a + 1;
        int numbers[n];
        for(int i=0; i<n; ++i)
            cin >> numbers[i];
        bool arr[n] = {};
        for(int i=0; i<n; ++i)
        {
            arr[numbers[i] - a] = true;
        }
        for(int i=0; i<n; ++i)
        {
            if(arr[i] == false)
            {
                cout << a + i << endl;
                break;
            }
        }
    }
    return 0;
}
```

Output:

8. The Unchanging OR

Code:

```cpp
#include <iostream>
using namespace std;
long long position(int n){
    int j=0; int ans=0;
    while(n>0){
        j++;
        if(n&1){
            ans=j;
        }
        n=n>>1;
    }
    return ans;
}
int main() {
    // your code goes here
    int n;
    cin>>n;
    while(n--){
        long long a;
        cin>>a;
        cout<<a-position(a)<<endl;
    }
}
```

```
        return 0;
}
```

Output:

Status: ✔ Correct Answer   Submission ID: 84934448

Score:	Time:	Memory:
100	0.18s	5.3M

Sub-Task	Task #	Result (time)
1	1	AC (0.003704)
1	2	AC (0.170030)
1	3	AC (0.175890)
Subtask Score: 100.00%		Result - AC

Total Score = 100.00%

9. Grid Game
Code:
```
#include <iostream>
using namespace std;
int main()
{
    ios_base::sync_with_stdio(false);
```

```cpp
cin.tie(0);
cout.tie(0);
int t;
cin>>t;
while(t--)
{
    int n,m;
    cin>>n>>m;
    long long int arr[n+1][m+1],i,j;
    for(i = 0;i<=n;i++)
    arr[i][0] = 0;
    for(j = 0;j<=m;j++)
    arr[0][j] = 0;
    for(i = 1;i <= n;i++)
    {
        for(j = 1;j <= m;j++)
        {
            cin>>arr[i][j];
            arr[i][j] = arr[i][j] + arr[i-1][j] + arr[i][j-1] - arr[i-1][j-1];
        }
    }
    int q;
    cin>>q;
    while(q--)
    {
        int a,b,x,y;
        long long int sum=0;
        cin>>a>>b>>x>>y;
        sum = arr[x][y]+arr[a-1][b-1]-arr[a-1][y]-arr[x][b-1];
        cout<<sum<<endl;
    }
}
}
```

Output:

10. Chef and 2D Array

Code:

```cpp
#include <bits/stdc++.h>
using namespace std;
int main()

//Gurvinder Singh 20bcs7173
{
    long long n,i,j,k;
    cin>>n;
    static long long a[1000][1000],b[1000][1000];
    for(i=0;i<n;i++)
        for(j=0;j<n;j++)
            cin>>a[i][j];
    b[0][0]=a[0][0];
    for(i=0,j=1;j<n;j++)
        b[i][j]=b[i][j-1]+a[i][j];
    for(j=0,i=1;i<n;i++)
        b[i][j]=b[i-1][j]+a[i][j];
    for(i=1;i<n;i++)
    {
        for(j=1;j<n;j++)
            b[i][j]=min(b[i-1][j],b[i][j-1])+a[i][j];
    }
    cout<<b[n-1][n-1]<<"\n";
}
```

Output:

Status: ✔ Correct Answer		Submission ID: 84827882

Score:	Time:	Memory:
100	0.19s	18.7M

Sub-Task	Task #	Result (time)
1	0	AC (0.004123)
1	1	AC (0.004121)
Subtask Score: 30.00%		Result - AC
2	2	AC (0.004275)
2	3	AC (0.012464)
2	4	AC (0.052475)
2	5	AC (0.190402)
Subtask Score: 70.00%		Result - AC
		Total Score = 100.00%