Winter Domain Camp Day-1

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1) Sum of Natural Numbers up to N

```cpp
#include <iostream>
using namespace std;
int sum(int n)
{
    if(n==0) return 0;
    return n+sum(n-1);
}
int main()
{
    int n=10;
    int ans=sum(n);
    cout<<ans;
    return 0;
}
```

Output

```
PS A:\S2D\Coding\C++> cd "a:\S2D\
moffirstnnumber }
55
PS A:\S2D\Coding\C++\Recursion>
```

2) Check if a Number is Prime

```cpp
#include <iostream>
#include <math.h>

using namespace std;
bool prime(int n)
{
    int limit=sqrt(n);
    for(int i=1;i<=limit;i++) if(n%i==0) return false;


    return true;
}
int main()
{
    int n=79;
    if(prime(n)) cout<<"Prime";
    else cout<<"Not Prime";
    return 0;
}
```

Output:

```
PS A:\S2D\Coding\C++> cd "a:\S2D\C
Not Prime
PS A:\S2D\Coding\C++\wintercamp>
```

3) Print Odd Numbers up to N

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

int main()
{
    int n=45;
    for(int i=0;i<=n;i++)
    {
        if(i%2) cout<<i<<endl;
    }
    return 0;
}
```

Output:

```
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45
PS A:\S2D\Coding\C++\wintercamp>
```

4. Sum of Odd Numbers up to N

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

int main()
{
    int sum=0,n=20;
    for(int i=0;i<=20;i++)
    {
        if (i%2==0)
        {
            sum+=i;
        }

    }
    cout<<sum;
    return 0;
}
```

Output:

```
PS A:\S2D\Coding\C++> cd "a:\S2D\Cc
110
PS A:\S2D\Coding\C++\wintercamp>
```

5) Print Multiplication Table of a Number

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

int main()
{
    int n=5;
    for(int i=1;i<11;i++)
    {
        cout<<n<<"*"<<i<<"="<<n*i<<endl;
    }
    return 0;
}
```

Output:

```
5*1=5
5*2=10
5*3=15
5*4=20
5*5=25
5*6=30
5*7=35
5*8=40
5*9=45
5*10=50
PS A:\S2D\Coding\C++\wintercamp>
```