IT DS 201 LAB

SUBMITTED BY ADITYA SINGH 2K19/EP/005

Program 5: Write a program to count set bits in an Integer.

CODE

```
void solve(int n) {
    int count = 0;
    while (n) {
        n = n & (n - 1);
        count++;
    }
    cout<<count;
}

int main() {
    a_d_i();
    int n;
    cin>>n;
    solve(n);
}
```

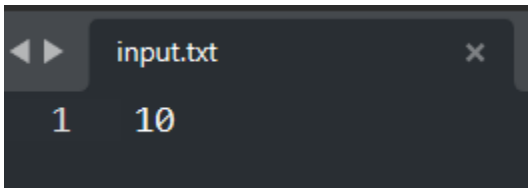
ALGORITHM

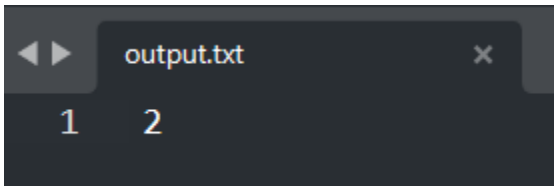
Using Brian Kernighan's Algorithm:

1. Initialize count: = 0
2. If integer n is not zero
   (a) Do bitwise & with (n-1) and assign the value back to n
   n: = n&(n-1)
   (b) Increment count by 1
   (c) go to step 2
3. Else return count

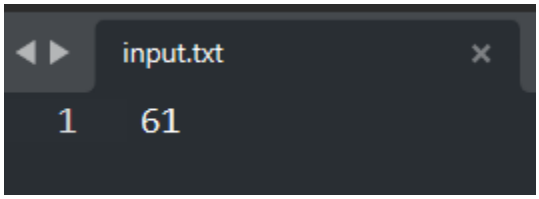
INPUT/OUTPUT

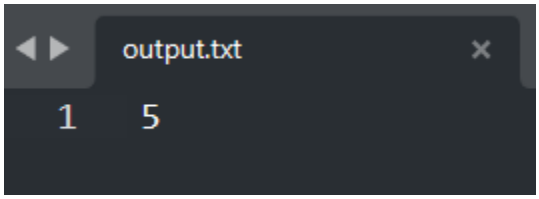
1.





2.





3.