**DYNAMMIC PROGRAMMING:**PROBLEM 1:

PLAYING WITH NUMBERS:

AIM:

Ram and Sita are playing with numbers by giving puzzles to each other. Now it was Ram term, so he gave Sita a positive integer ‘n’ and two numbers 1 and 3. He asked her to find the possible ways by which the number n can be represented using 1 and 3.Write any efficient algorithm to find the possible ways.

CODE:  
#include <stdio.h>

long long countWays(int n) {

long long dp[n + 1];

dp[0] = 1;

if (n >= 1) dp[1] = 1;

if (n >= 2) dp[2] = 1;

if (n >= 3) dp[3] = 2;

for (int i = 4; i <= n; i++) {

dp[i] = dp[i - 1] + dp[i - 3];

}

return dp[n];

}

int main() {

int n;

scanf("%d", &n);

printf("%lld\n",countWays(n));

return 0;

}

INPUT AND OUTPUT:  
