```c
/*##############################################################################*/
/*HW07_part2.c                                                                  */
/*_____________________________                                                 */
/*Written by Mustafa Akilli on April 12, 2015                                   */
/*                                                                              */
/*Description                                                                   */
/*___________                                                                   */
/*  How many distinct ways you can climb to the top.                            */
/*Inputs:                                                                       */
/*  -Number of stairs                                                           */
/*Outputs:                                                                      */
/*  -How many distinct ways you can climb to the top.                           */
/*##############################################################################*/
/*                                                                              */
/*------------------------------------------------------------------------------*/
/*                           Includes                                           */
#include <stdio.h>
/*------------------------------------------------------------------------------*/

int combination (int n , int k);
int ways_rec(int n,int k);
int ways(int n);


int
main(void){

    int t;

    t=ways(5);

    return 0;
}

/* A recursive function to calculate combination                                */
int combination (int n , int k)
{

    int result;

    if(n==k || k==0)
    {
        result=1;
    }

    else
    {
        result=combination(n-1,k-1)+combination(n-1,k);
    }

    return result;
}

/* A recursive function to calculate and return total number of ways.           */
int ways_rec(int n, int k)
{
    int total_number_of_ways=0;

    total_number_of_ways=combination(n,k);

    if(n-1>=k+1)
    {
        total_number_of_ways+=ways_rec(n-1,k+1);
    }

    return total_number_of_ways;
}

/* A function to call ways_rec(int n, int k) function                           */
int ways(int n)
{
    int number_ways;
```

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    number_ways=ways_rec(n,0);

    printf("%d\n",number_ways);

    return number_ways;
}

/*##########################################################################*/
/*                            End of HW07_part2.c                           */
/*##########################################################################*/
```