

CPSC 1160: ASSIGNMENT 2[25 MARKS]

Exercise 1 [22 marks]

- Write a program that will ask the user for a number.
- This number is how many coins should be used.
- You need to write a function that will generate all the possible permutation of head and tails that can happen
- Your program should than print of how many permutations result to x numbers of Heads and y number of Tails
- **YOU ARE NOT ALLOWED TO USE ANY LOOPS IN YOUR PROGRAM**

You must write at least three functions

- `int main()`
 - Which is the main function. Keep it brief
- A recursive function that generates all possible permations and store the counts in a vector
- A recursive function that will print out the result
- You can write more functions if you wish

SAMPLE OUT

How many coins do you wish to flip 4

0H 4 T : 1

1H 3 T : 4

2H 2 T : 6

3H 1 T : 4

4H 0 T : 1

How many coins do you wish to flip 33

0H 33 T : 1

1H 32 T : 33

2H 31 T : 528

3H 30 T : 5456

4H 29 T : 40920

5H 28 T : 237336

6H 27 T : 1107568

7H 26 T : 4272048

8H 25 T : 13884156

9H 24 T : 38567100

10H 23 T : 92561040

11H 22 T : 193536720

12H 21 T : 354817320
13H 20 T : 573166440
14H 19 T : 818809200
15H 18 T : 1037158320
16H 17 T : 1166803110
17H 16 T : 1166803110
18H 15 T : 1037158320
19H 14 T : 818809200
20H 13 T : 573166440
21H 12 T : 354817320
22H 11 T : 193536720
23H 10 T : 92561040
24H 9 T : 38567100
25H 8 T : 13884156
26H 7 T : 4272048
27H 6 T : 1107568
28H 5 T : 237336
29H 4 T : 40920
30H 3 T : 5456
31H 2 T : 528
32H 1 T : 33
33H 0 T : 1

Submissions

Make sure that your code is neat and is well commented [3 marks]

Check that all of your programs work the way they are intended to work by running them with different inputs

Submit to D2L a zip/archive file containing only the .cpp you have written