

ACTIV - Activities

[#dynamic-programming \(/problems/tag/dynamic-programming\)](/problems/tag/dynamic-programming/) [#binary-search \(/problems/tag/binary-search\)](/problems/tag/binary-search/)

Ana likes many activities. She likes acrobatics, alchemy, archery, art, Arabic dances, and many more. She joined a club that offers several classes. Each class has a time interval in every week. Ana wants to sign up for many classes, but since they overlap in time, she looks for a subset of non-overlapping classes to attend. A subset is non-overlapping if it does not contain two classes that overlap in time. If a class starts at the time another class ends, this is not considered overlapping.

Ana decided to list all the non-overlapping non-empty subsets of classes. Then she will choose the subset she likes best. In order to predict the amount of paper needed to write the list, she wants you to calculate how many of these subsets there are.

Input

Each test case is described using several lines. The first line contains an integer N indicating the number of classes the club offers ($1 \leq N \leq 10^5$). Each of the next N lines describes a class using two integers S and E that represent the starting and ending times of the class, respectively ($1 \leq S < E \leq 10^9$). The end of input is indicated with a line containing a single -1 .

Output

For each test case, output a single line with a single integer representing the number of non-overlapping non-empty subsets of classes. To make your life easier, output only the last 8 digits of the result. If the result has less than 8 digits, write it with leading zeros to complete 8 digits.


Example

Input:

```
5
1 3
3 5
5 7
2 4
4 6
3
500000000 1000000000
1 500000000
1 500000000
1
999999999 1000000000
-1
```

Output:

```
00000012
00000005
00000001
```

 [Submit solution! \(/submit/ACTIV/\)](/submit/ACTIV/)

hide comments

<	Previous	1	2 (/problems/ACTIV/cstart=10)
3 (/problems/ACTIV/cstart=20)	4 (/problems/ACTIV/cstart=30)		
Next (/problems/ACTIV/cstart=10)	> (/problems/ACTIV/cstart=40)		



joacru (/users/joacru): 2025-05-09 17:08:02

Take mod $1e8$. Even when output!!! I got some WAs because I was printing ans-1 instead of $(ans-1+MOD)\%MOD$.



parasnagpal (/users/parasnagpal): 2021-07-18 01:28:34

A hint for the problem: <https://youtu.be/8-mUDO9IcIY>



rushi2001 (/users/rushi2001): 2021-06-10 09:48:26

Thanks @vivek singh rana

For the testcase

test case-

6

1 2

2 3

3 4








1 8


4 5

5 6

-1

O/P - 00000032


-  anupam_akib (/users/anupam_akib): 2021-06-03 09:47:00
After 20 attempts, got AC! -_- facing problem with mod.
-  harshh3010 (/users/harshh3010): 2021-03-22 21:06:35
use setw(8) and setfill('0') for output in c++
-  lamda_cdm_10 (/users/lamda_cdm_10): 2020-09-20 05:22:38
remember to take mod of 10^8 ,costed me 3 WA for that
-  pacific_kafka (/users/pacific_kafka): 2020-08-23 15:57:56
Dynamic Programming makes me feels sad
-  vakulsingh (/users/vakulsingh): 2020-07-30 13:41:23
just take mod 10^8 at every dp step,somehow did'not see that for a long time
-  jopdhiwaala (/users/jopdhiwaala): 2020-05-16 11:45:04
You could do to_string in c++ and output the characters.
-  pallindromeguy (/users/pallindromeguy): 2020-03-29 10:00:27
Cost me 2 WA because I was taking mod 10^8+7 instead of just 10^8 :(

 [Submit solution! \(/submit/ACTIV/\)](/submit/ACTIV/)

Added by: Pablo Ariel Heiber
(/users/pabloh)
Date: 2010-09-24
Time limit: 2.365s
Source limit: 50000B
Memory limit: 1536MB
Cluster: Cube (Intel G860) (/clusters/)
Languages: All except: ASM64 NODEJS
OBJC VB.NET
Resource: FCEyN UBA ICPC Selection
2010

[About \(/info/\)](/info/) | [Tutorial \(/tutorials/\)](/tutorials/) | [Tools \(/tools/\)](/tools/) | [Clusters \(/clusters/\)](/clusters/) | [Credits \(/credits/\)](/credits/) | [API \(/api/\)](/api/)
[\(/sphereengine/\)](/sphereengine/) | [Widgets \(/sphereengine-widget/\)](/sphereengine-widget/)

Legal: [Terms of Service \(/legal-tos/\)](/legal-tos/) | [Privacy Policy \(/legal-pp/\)](/legal-pp/) | [GDPR Info \(/legal-gdpr/\)](/legal-gdpr/)

 [RSS \(/rss/\)](/rss/)