Unique visitors

Submission deadline:	**2021-11-21 23:59:59**
Late submission with malus:	**2022-01-02 23:59:59** (Late submission malus: 100.0000 %)
Evaluation:	**5.0000**
Max. assessment:	**5.0000** (Without bonus points)
Submissions:	15 / 20 Free retries + 10 Penalized retries (-10 % penalty each retry)
Advices:	1 / 2 Advices for free + 2 Advices with a penalty (-10 % penalty each advice)

The task is to develop a program that processes log and analyzes unique visits.

Assume we register all visits to our WWW server. In particular, we register the users that access our server. Each user is given an unique id - an integer in the range [0 ; 99999]. The program is given the information on user access via the registration command, the command has the form + id, e.g.,

```
+ 123
+ 456
+ 123
+ 123
+ 789
```

Here, user 123 accessed our server in positions 0, 2 and 3, user 456 accessed the server in position 1 and user 789 accessed the server in position 4.

Next, we need to compute the unique users that accessed our server in a given range of time, For the sake of simplicity, we consider the position instead of time. The computation is requested by the analyze command. The command has the form ? from to where from and to are integer positions from where / to where compute the unique users. For the example above, a request ? 0 4 results in answer 3 / 5 (3 unique users in the range of length 5).

The input of the program is a list of commands to register mixed with commands to analyze the stored data. The program processes the input, stores the registrations and answers the analyze requests. The processing terminates when there is an error in the input or when all data are processed (EOF). There is at most 1000000 registration commands in the input.

The output of the program is:

- the information on the visit # for the registration command,
- the information on unique users / total range length for the analyze command.

The program must validate input data. If the input is invalid, the program must detect it, it shall output an error message (see below), and terminate. If displayed, the error message must be sent to the standard output (do not send it to the error output) and the error message must be terminated by a newline (\n). The registration command is considered invalid, if:

- user id is missing,
- id is not an integer,
- id is not in the range [0 ; 99999], or
- there is more than 1000000 visits registered with the registration command.

The analyze command is invalid, if:

- from or to is missing,
- from / to are not integers,
- from is smaller than 0,
- to is greater or equal to the number of visits registered so far, or
- from is greater than to.

Obviously, the input is also rejected if the command is neither registration nor analyze.

Sample program runs:

```
Requests:
+ 10
> first visit
+ 20
> first visit
+ 99999
> first visit
+ 5
> first visit
+ 20
> visit #2
+ 25
> first visit
+ 10
> visit #2
```

```
? 0 6
> 5 / 7
? 0 5
> 5 / 6
? 1 6
> 5 / 6
? 1 5
> 4 / 5
? 2 6
> 5 / 5
? 2 5
> 4 / 4
? 2 4
> 3 / 3
? 2 3
> 2 / 2
? 2 2
> 1 / 1
+ 5
> visit #2
+ 10
> visit #3
+ 5
> visit #3
+ 20
> visit #3
? 0 10
> 5 / 11
? 7 10
> 3 / 4
? 1 11
Invalid input.
```

```
Requests:
+ 10
> first visit
+ 20
> first visit
+ 30
> first visit
? 2 1
Invalid input.
```

```
Requests:
+ 12
> first visit
* 33
Invalid input.
```

Advice:

- The sample runs above list both the output of your program (boldface font) and user input (regular font). The bold/regular formatting is included here, in the problem statement page, to increase readability of the listing. Your program must output the text without any additional markup.
- Do not forget the newline (\n) after the last output line.
- The problem is somewhat simplified. There is only a limited number of ids (0 to 99999), moreover, there is a limited number of registration commands in the input (at most 1000000). If you need to save the list of all visits, use a statically allocated array of a fixed size.
- The program is tested with several tests. First, the program is tested for valid outputs. Next, the program is tested for correct memory usage (memory debugger is used). Finally, the efficiency of your program is tested.
- A basic solution does not have to be extremely fast, even naive (quadratic) algorithm may be used to establish the number of unique users. Such program passes the mandatory and some optional tests. The result will be at most 100 %.
- The first bonus test uses long inputs with many registration commands. Moreover, the unique users are to be searched in long ranges. The naive algorithm is not efficient enough to compute the result in given time; an improved algorithm must be used instead.
- Finally, there is second speed test. In addition to long inputs, there are many analyze commands in the test. The input data must be pre-processed to avoid repeated computation in the subsequent searches.
- A program that passes all mandatory and optional tests with 100 % result may be submitted to code review (i.e., you do not need to pass bonus tests for code review).

Sample data: **Download**

✅ **Reference**

- **Evaluator: computer**
  - Program compiled
```

- Test 'Základní test se vstupy podle ukázky': success
  - result: 100.00 %, required: 100.00 %
  - Max. run time: 0.014 s (limit: 1.000 s)
  - Total run time: 0.039 s
  - Mandatory test success, evaluation: 100.00 %
- Test 'Test mezních hodnot': success
  - result: 100.00 %, required: 50.00 %
  - Max. run time: 0.332 s (limit: 2.000 s)
  - Total run time: 0.699 s
  - Optional test success, evaluation: 100.00 %
- Test 'Test ošetření nesprávných vstupů': success
  - result: 100.00 %, required: 50.00 %
  - Max. run time: 0.010 s (limit: 1.000 s)
  - Total run time: 0.088 s
  - Optional test success, evaluation: 100.00 %
- Test 'Test náhodnými hodnotami': success
  - result: 100.00 %, required: 50.00 %
  - Max. run time: 0.009 s (limit: 2.000 s)
  - Total run time: 0.066 s
  - Optional test success, evaluation: 100.00 %
- Test 'Test náhodnými hodnotami + mem debugger': success
  - result: 100.00 %, required: 50.00 %
  - Max. run time: 0.031 s (limit: 2.000 s)
  - Total run time: 0.138 s
  - Optional test success, evaluation: 100.00 %
- Test 'Test rychlosti I (bonus)': success
  - result: 100.00 %, required: 100.00 %
  - Max. run time: 0.039 s (limit: 2.000 s)
  - Total run time: 0.074 s
  - Bonus test - success, evaluation: 110.00 %
- Test 'Test rychlosti II (bonus)': success
  - result: 100.00 %, required: 100.00 %
  - Max. run time: 0.160 s (limit: 1.000 s)
  - Total run time: 0.260 s
  - Bonus test - success, evaluation: 140.00 %
- Overall ratio: 154.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00 * 1.10 * 1.40)
- Total percent: 154.00 %
- Early submission bonus: 0.50
- Total points: 1.54 * ( 5.00 + 0.50 ) = 8.47

| SW metrics: | | Total | Average | Maximum | Function name |
|---|---|---|---|---|---|
| | Functions: | **5** | -- | -- | -- |
| | Lines of code: | **125** | **25.00 ± 9.01** | **41** | main |
| | Cyclomatic complexity: | **40** | **8.00 ± 4.60** | **15** | main |

| 15 | 2021-12-30 13:22:07 | **Download** |
|---|---|---|
| **Submission status:** | Evaluated | |
| **Evaluation:** | 0.0000 | |

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.019 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.338 s (limit: 2.000 s)
    - Total run time: 0.696 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Invalid input test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.072 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.012 s (limit: 2.000 s)
    - Total run time: 0.081 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test + mem debugger': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.045 s (limit: 2.000 s)
    - Total run time: 0.195 s
    - Optional test success, evaluation: 100.00 %

- Test 'Speed test I (bonus)': Abnormal program termination (Time limit exceeded)
  - Program was killed after: 2.005 s (limit: 2.000 s)
  - Bonus test - failed, evaluation: No bonus awarded
  - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
- Test 'Speed test II (bonus)': Not tested
  - Bonus test - failed, evaluation: No bonus awarded
- Overall ratio: 100.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00)
- Total percent: 100.00 %
- Late submission malus: 5.00
- Total points: 1.00 * ( 5.00 - 5.00 ) = 0.00

| | | Total | Average | Maximum | Function name |
|---|---|---|---|---|---|
| **SW metrics:** | Functions: | **1** | -- | -- | -- |
| | Lines of code: | **58** | **58.00 ± 0.00** | **58** | main |
| | Cyclomatic complexity: | **18** | **18.00 ± 0.00** | **18** | main |

| 14 | 2021-12-14 01:05:28 | Download |
|---|---|---|

| **Submission status:** | Evaluated |
|---|---|
| **Evaluation:** | 0.0000 |

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.019 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.343 s (limit: 2.000 s)
    - Total run time: 0.683 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Invalid input test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.070 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.009 s (limit: 2.000 s)
    - Total run time: 0.072 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test + mem debugger': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.035 s (limit: 2.000 s)
    - Total run time: 0.158 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Speed test I (bonus)': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Bonus test - failed, evaluation: No bonus awarded
    - ☑ Time limit exceeded
      - ☑ Input data **[2048 B / 374588 B]**

        ```
        + 10598
        + 5513
        + 16190
        + 3992
        + 14874
        + 14257
        + 5152
        + 5333
        + 13390
        + 11333
        + 14185
        + 17737
        + 17430
        + 15606
        + 4051
        + 18706
        + 19683
        + 12637
        + 1672
        + 16907
        + 13271
        + 20194
        ```

```
+ 8663
+ 6050
+ 10414
+ 15202
+ 5354
+ 5932
+ 9576
+ 4117
+ 2258
+ 18208
+ 1327
+ 9509
+ 13555
+ 239
+ 5000
+ 695
+ 7730
+ 937
+ 11793
+ 13688
+ 14456
+ 15510
+ 4681
+ 15335
+ 134
+ 394
+ 15063
+ 6488
+ 17003
+ 18696
+ 10063
+ 5132
+ 765
+ 19116
+ 14769
+ 15957
+ 11784
+ 11945
+ 19652
+ 15962
+ 308
+ 2853
+ 12812
+ 19390
+ 10227
+ 6851
+ 19644
+ 5509
+ 32
+ 10938
+ 8302
+ 2621
+ 14521
+ 20754
+ 6438
+ 3588
+ 169
+ 16451
+ 7096
+ 6281
+ 15416
+ 17089
+ 16747
+ 17246
+ 12380
+ 14074
+ 12748
+ 20347
+ 17484
+ 19809
+ 7916
+ 9639
+ 5732
+ 4233
+ 8338
+ 9904
+ 4863
+ 2478
+ 152
+ 636
```

```
      +  7009
      +  5366
      +  3971
      +  261
      +  17638
      +  18114
      +  1694
      +  17704
      +  15049
      +  6181
      +  4842
      +  16294
      +  7971
      +  7509
      +  5908
      +  16380
      +  13291
      +  16416
      +  18877
      +  8683
      +  6425
      +  1124
      +  10798
      +  13326
      +  12815
      +  6031
      +  14754
      +  1652
      +  5488
      +  2430
      +  1075
      +  11878
      +  18675
      +  15009
      +  16919
      +  1562


      <skipping 372540 B>

       3452
      +  1219
      +  5495
      +  17438
      +  4195
      +  14284
      +  12347
      +  8683
      +  16879
      +  20074
      +  10105
      +  15050
      +  12988
      +  13337
      +  1334
      +  14611
      +  4439
      +  13297
      +  2642
      +  1216
      +  8799
      +  1527
      +  5544
      +  19432
      +  9621
      +  11945
      +  1331
      +  19519
      +  17606
      ?  1982 41922
      ?  4182 20730
      ?  9972 46713
      ?  332 48105
      ?  13419 49995
      ?  27291 36946
      ?  354 49022
      ?  6609 47405
      ?  859 48875
      ?  35545 47649
      ?  9296 42386
```

```
                    ?  7570  47727
                    ?  5731  40400
                    ?  28206  47526
                    ?  8428  41324
                    ?  25254  36579
                    ?  6225  44446
                    ?  1642  44371
                    ?  5566  46362
                    ?  1132  42629
                    ?  9095  33449
                    ?  15085  18628
                    ?  15824  46046
                    ?  6016  28911
                    ?  3915  29981
                    ?  22668  29152
                    ?  12837  14794
                    ?  12325  19726
                    ?  24371  27982
                    ?  17276  28979
                    ?  22424  25405
                    ?  7650  18596
                    ?  15703  24714
                    ?  13233  13361
                    ?  2081  36296
                    ?  1062  43680
                    ?  33871  37956
                    ?  19368  25410
                    ?  3123  41251
                    ?  34319  40838
                    ?  7023  38007
                    ?  10045  30878
                    ?  3339  48828
                    ?  23580  47674
                    ?  21999  45326
                    ?  11653  15182
                    ?  6581  19513
                    ?  29151  30002
                    ?  21109  45318
                    ?  16489  33485
                    ?  585  6553
                    ?  5459  9309
                    ?  10271  15946
                    ?  15887  21495
                    ?  20158  23802
                    ?  25934  30634
                    ?  30440  33555
                    ?  35174  39348
                    ?  40253  45281
                    ?  45936  49999
```

- Test 'Speed test II (bonus)': Not tested
  - Bonus test - failed, evaluation: No bonus awarded
- Overall ratio: 100.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00)
- Total percent: 100.00 %
- Late submission malus: 5.00
- Total points: 1.00 * (5.00 - 5.00) = 0.00

SW metrics:		Total	Average	Maximum	Function name
	Functions:	1	--	--	--
	Lines of code:	61	61.00 ± 0.00	61	main
	Cyclomatic complexity:	19	19.00 ± 0.00	19	main

13	2021-11-18 16:31:15	Download
Submission status:	Evaluated	
Evaluation:	5.0000	

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.008 s (limit: 1.000 s)
    - Total run time: 0.018 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.340 s (limit: 2.000 s)

- Total run time: 0.697 s
- Optional test success, evaluation: 100.00 %
  - Test 'Invalid input test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.008 s (limit: 1.000 s)
    - Total run time: 0.068 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.009 s (limit: 2.000 s)
    - Total run time: 0.074 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test + mem debugger': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.056 s (limit: 2.000 s)
    - Total run time: 0.196 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Speed test I (bonus)': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.004 s (limit: 2.000 s)
    - Bonus test - failed, evaluation: No bonus awarded
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 100.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00)
- Total percent: 100.00 %
- Total points: 1.00 * 5.00 = 5.00

SW metrics:		Total	Average	Maximum	Function name
	Functions:	1	--	--	--
	Lines of code:	61	61.00 ± 0.00	61	main
	Cyclomatic complexity:	19	19.00 ± 0.00	19	main

12	2021-11-18 16:30:13	**Download**
Submission status:	Evaluated	
Evaluation:	5.0000	

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.331 s (limit: 2.000 s)
    - Total run time: 0.688 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Invalid input test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.063 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.008 s (limit: 2.000 s)
    - Total run time: 0.067 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test + mem debugger': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.051 s (limit: 2.000 s)
    - Total run time: 0.166 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Speed test I (bonus)': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.005 s (limit: 2.000 s)
    - Bonus test - failed, evaluation: No bonus awarded
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 100.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00)
- Total percent: 100.00 %
- Total points: 1.00 * 5.00 = 5.00

SW metrics:		Total	Average	Maximum	Function name
	Functions:	1	--	--	--

		Lines of code:	58	58.00 ± 0.00	58 main
		Cyclomatic complexity:	18	18.00 ± 0.00	18 main

11	2021-11-18 16:27:25	Download

Submission status:	Evaluated
Evaluation:	5.0000

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.335 s (limit: 2.000 s)
    - Total run time: 0.619 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Invalid input test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.069 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.012 s (limit: 2.000 s)
    - Total run time: 0.081 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Random test + mem debugger': success
    - result: 100.00 %, required: 50.00 %
    - Max. run time: 0.033 s (limit: 2.000 s)
    - Total run time: 0.157 s
    - Optional test success, evaluation: 100.00 %
  - Test 'Speed test I (bonus)': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Bonus test - failed, evaluation: No bonus awarded
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 100.00 % (= 1.00 * 1.00 * 1.00 * 1.00 * 1.00)
- Total percent: 100.00 %
- Total points: 1.00 * 5.00 = 5.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	1	--	--	--
	Lines of code:	58	58.00 ± 0.00	58	main
	Cyclomatic complexity:	18	18.00 ± 0.00	18	main

10	2021-11-18 16:06:02	Download

Submission status:	Evaluated
Evaluation:	0.0000

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': failed
    - result: 66.67 %, required: 100.00 %
    - Max. run time: 0.008 s (limit: 1.000 s)
    - Total run time: 0.019 s
    - Mandatory test failed, evaluation: 0.00 %
    - Failed (invalid output) **[Unlock advice (497 B)]**
  - Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	1	--	--	--
	Lines of code:	60	60.00 ± 0.00	60	main
	Cyclomatic complexity:	19	19.00 ± 0.00	19	main

9	2021-11-18 15:48:14		**Download**

Submission status:	Evaluated
Evaluation:	0.0000

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': failed
    - result: 66.67 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.018 s
    - Mandatory test failed, evaluation: 0.00 %
    - Failed (invalid output) **[Unlock advice (497 B)]**
  - Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	**1**	--	--	--
	Lines of code:	**57**	**57.00 ± 0.00**	**57**	main
	Cyclomatic complexity:	**18**	**18.00 ± 0.00**	**18**	main

8	2021-11-18 15:47:18		**Download**

Submission status:	Evaluated
Evaluation:	0.0000

- **Evaluator: computer**
  - Compile in 'pedantic' mode failed (10 % penalty). **[Unlock advice (288 B)]**
  - Test 'Basic test with example input data': failed
    - result: 66.67 %, required: 100.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test failed, evaluation: 0.00 %
    - Failed (invalid output) **[Unlock advice (497 B)]**
  - Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	**1**	--	--	--
	Lines of code:	**58**	**58.00 ± 0.00**	**58**	main
	Cyclomatic complexity:	**18**	**18.00 ± 0.00**	**18**	main

7	2021-11-18 12:55:50		**Download**

Submission status:	Evaluated
Evaluation:	0.3125

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.016 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Optional test failed, evaluation: 50.00 %
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Invalid input test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test + mem debugger': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Speed test I (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 6.25 % (= 1.00 * 0.50 * 0.50 * 0.50 * 0.50)
- Total percent: 6.25 %
- Total points: 0.06 * 5.00 = 0.31

6	2021-11-18 12:47:54	Download

Submission status:	Evaluated
Evaluation:	0.3125

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Optional test failed, evaluation: 50.00 %
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Invalid input test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test + mem debugger': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Speed test I (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 6.25 % (= 1.00 * 0.50 * 0.50 * 0.50 * 0.50)
- Total percent: 6.25 %
- Total points: 0.06 * 5.00 = 0.31

SW metrics:		Total	Average	Maximum	Function name
	Functions:	**1**	--	--	--
	Lines of code:	**66**	**66.00 ± 0.00**	**66**	main
	Cyclomatic complexity:	**21**	**21.00 ± 0.00**	**21**	main

5	2021-11-18 11:50:18	Download

Submission status:	Evaluated
Evaluation:	0.3125

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Optional test failed, evaluation: 50.00 %
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Invalid input test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test + mem debugger': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Speed test I (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Test 'Speed test II (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Overall ratio: 6.25 % (= 1.00 * 0.50 * 0.50 * 0.50 * 0.50)
- Total percent: 6.25 %
- Total points: 0.06 * 5.00 = 0.31

SW metrics:		Total	Average	Maximum	Function name
	Functions:	**1**	--	--	--

		Total	Average	Maximum	Function name
	Lines of code:	66	66.00 ± 0.00	66	main
	Cyclomatic complexity:	21	21.00 ± 0.00	21	main

4	**2021-11-18 11:49:30**		**Download**

Submission status:	Evaluated
Evaluation:	0.0000

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': failed
    - result: 66.67 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.017 s
    - Mandatory test failed, evaluation: 0.00 %
    - Failed (invalid output) **[Unlock advice (631 B)]**
  - Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	1	--	--	--
	Lines of code:	67	67.00 ± 0.00	67	main
	Cyclomatic complexity:	21	21.00 ± 0.00	21	main

3	**2021-11-18 11:44:50**		**Download**

Submission status:	Evaluated
Evaluation:	0.0000

- **Evaluator: computer**
  - Compile in 'pedantic' mode failed (10 % penalty). **[Unlock advice (390 B)]**
  - Test 'Basic test with example input data': Abnormal program termination (Segmentation fault/Bus error/Memory limit exceeded/Stack limit exceeded)
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.007 s
    - Mandatory test failed, evaluation: 0.00 %
    - Seggmentation fault **[Unlock advice (130 B)]**
  - Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

		Total	Average	Maximum	Function name
SW metrics:	Functions:	1	--	--	--
	Lines of code:	73	73.00 ± 0.00	73	main
	Cyclomatic complexity:	21	21.00 ± 0.00	21	main

2	**2021-11-15 18:23:03**		**Download**

Submission status:	Evaluated
Evaluation:	0.3125

- **Evaluator: computer**
  - Program compiled
  - Test 'Basic test with example input data': success
    - result: 100.00 %, required: 100.00 %
    - Max. run time: 0.006 s (limit: 1.000 s)
    - Total run time: 0.016 s
    - Mandatory test success, evaluation: 100.00 %
  - Test 'Borderline test': Abnormal program termination (Time limit exceeded)
    - Program was killed after: 2.006 s (limit: 2.000 s)
    - Optional test failed, evaluation: 50.00 %
    - Time limit exceeded **[Unlock advice (2.00 KiB, incomplete data)]**
  - Test 'Invalid input test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Random test + mem debugger': Not tested
    - Optional test failed, evaluation: 50.00 %
  - Test 'Speed test I (bonus)': Not tested
    - Bonus test - failed, evaluation: No bonus awarded
  - Test 'Speed test II (bonus)': Not tested

- - Bonus test - failed, evaluation: No bonus awarded
    - ○ Overall ratio: 6.25 % (= 1.00 * 0.50 * 0.50 * 0.50 * 0.50)
  - Total percent: 6.25 %
  - Total points: 0.06 * 5.00 = 0.31

SW metrics:		Total	Average	Maximum	Function name
	Functions:	1	--	--	--
	Lines of code:	66	66.00 ± 0.00	66	main
	Cyclomatic complexity:	21	21.00 ± 0.00	21	main

1	2021-11-15 18:16:05	Download
Submission status:	Evaluated	
Evaluation:	0.0000	

- **Evaluator: computer**
  - ○ Compile in 'pedantic' mode failed (10 % penalty). **[Unlock advice (195 B)]**
  - ○ Test 'Basic test with example input data': Abnormal program termination (Segmentation fault/Bus error/Memory limit exceeded/Stack limit exceeded)
    - Max. run time: 0.007 s (limit: 1.000 s)
    - Total run time: 0.007 s
    - Mandatory test failed, evaluation: 0.00 %
    - Seggmentation fault **[Unlock advice (130 B)]**
  - ○ Overall ratio: 0.00 %
- Total percent: 0.00 %
- Total points: 0.00 * 5.00 = 0.00

SW metrics:		Total	Average	Maximum	Function name
	Functions:	1	--	--	--
	Lines of code:	66	66.00 ± 0.00	66	main
	Cyclomatic complexity:	21	21.00 ± 0.00	21	main