Ticket

To use a take-home service from one restaurant, customer have to receive ticket queue(new). When staff (there is only 1 staff) is ready, he will call for the next queue (next). Then, customer with the queue will be allowed to order. The manager wants to analyze time which customer wait to order, so he implemented the program to manage the problem.

Input

- The first line is n that is a positive integer describe the number of the command lines follow this line
- Next n line are commands of ticket queue system. Each line has 1 command which has pattern like the table below.

Commands	Meanings	Display Output
resetn	setting the starting number of the next queue to n (only call once when start the queue)	Nothing to display
new t	customer receives ticket queue on time t	ticket n, n is the latest queue number on the ticket queue. (n will be increased by 1, whenever **new** command is called)
next	staff is ready to receive the next order from customer	call n, is the next queue ticket number waiting to order
order t	staff receive an order from a customer(who was the latest called from next) at time t	qtime n dt, where n is the queue number just called by "next". dt is the waiting time the customer holding this packet spent since "new" to order.
avg_qtime	display average waiting time of all customers who have come since the program started.(Only call when service was served)	avg_qtime x, where x is the average waiting time customer spent from the beginning of the program to the latest order time. (Round the number before displaying with **round(avg,4),** where avg is the average time)

Note 1: Time t is not in hour or minute but is an integer (See in example)

Note 2: All commands will always be correct and in correct order.

Output

The output will be displayed like in the table below.

Examples

Input (from keyboard)	Output(on screen)
4 reset 301 new 1100 new 1110 next	ticket 301 ticket 302 Call 301
6 reset 301 new 1100 new 1110 next order 1120 avg qtime	ticket 301 ticket 302 Call 301 qtime 301 20 <- 20 is from 1120 – 1100 avg_qtime 20.0 <- 20.0 is from 20/1
8 reset 301 new 1100 new 1110 next order 1120 next order 1150 avg qtime	ticket 301 ticket 302 Call 301 qtime 301 20 call 302 qtime 302 40 <- 40 is from 1150 – 1100 avg_qtime 30.0 <- 30.0 is from (20+40)/2
14 reset 301 new 1100 new 1110 next order 1120 new 1130 next next order 1160 avg qtime order 1170 next order 1180 avg qtime	ticket 301 ticket 302 Call 301 qtime 301 20 ticket 303 call 302 <- queue 302 is absent call 303 <- queue 303 is called qtime 303 30 <- 30 is from 1160 - 1130 avg_qtime 25.0 <- 25.0 is from (20+30)/2 ticket 304 call 304 qtime 304 10 avg_qtime 20.0 <- 30.0 is from (20+30+10)/3

Program structure

```
Assign value to the variables
q = list()                          # List q collects proper ticket queues
n = int(input())                    # Number of commands
for k in range():
    c = input().split()             # Read commands
    if c[0] == 'reset':
        ???
    elif c[0] == 'new':
        ???
    elif c[0] == 'next':
        ???
    elif c[0] == 'order':
        ???
    elif c[0] == 'avg_qtime':
        ???
        print( ??? , round(???,4)  )
```