Homework 2

Write a C++ program to simulate the service of a bank counter. The counter can service **one** client at a time. Therefore, a waiting **queue** can be formed in front of the counter. Each client is associated with three timing entries: ***arrival time***, ***service time***, and ***allowable waiting time***. Arrival time is the time the client arrives. Service time is the time it takes the counter to service the client. **Waiting time** is simply the time from a client arrives to when she/he can be served (**not** including the service time). **Allowable waiting time** is the maximum amount of time the client is willing to wait in the queue.

If a client arrives to find that she/he has to wait longer than his **allowable waiting time**, he will ask the client waiting at the **end** of the **queue** to see if he can cut in the waiting queue in front of the client. If the client at the end of the queue won't miss his own allowable waiting time, he **always** allows the newcomer to do it. Of course, the newcomer will do that only if he can meet his allowable waiting time. Otherwise, the arriving client will **leave immediately** without receiving any service.

Your program will prompt the user for inputting a sequence of entries for up to ten clients (each client has three timing entries (in terms of integer): *arrival time*, *service time*, and *allowable waiting time*). After that, your program will print out, for each client, (1) whether the client receive service or not (**yes** or **no**), and (2) if he does, the time the client departs.

Example:

Input:

	Arrival time	**Service time**	**Allowable waiting time**
Client 1:	3	5	7
Client 2:	5	7	8
Client 3:	9	9	5
Client 4:	12	3	10
Client 5:	13	2	4
Client 6:	16	6	3

Output:

	Served or not?	Departure time
Client 1:	Yes	8
Client 2:	Yes	15
Client 3:	No	
Client 4:	Yes	20
Client 5:	Yes	17
Client 6:	No	

Due date: Nov. 8, 2018.