

04. Queues

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Agenda

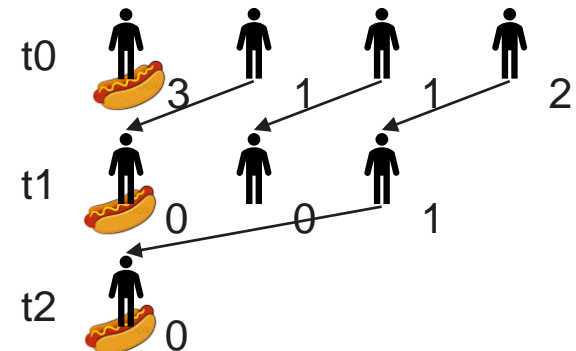
- Queue Problems
 - Queue ADT
 - Small Hotdog Stand
 - Big Hotdog Stand

Queue ADT

- Implement a Queue ADT
 - Use linked list as underlying container (do not use array).
- Functions:
 - createQueue: create a queue.
 - enqueue: insert data at the end of the queue.
 - dequeue: delete data at the front of the queue
 - queueFront: retrieve data at the front of the queue
 - queueCount: retrieve the number of element in the queue
 - destroyQueue: delete the queue
- You may implement additional functions for your convenience.

Small Hotdog Stand

- Using your Queue ADT, implement hotdog stand simulation.
- There is a small hotdog stand.
 - The hotdog stand makes one hotdog per time unit.
- Each customer has their own patience (1~9).
 - Each customer's patience is decreased by 1 per time unit.
 - If a customer's patience is 0, he left the queue before next time unit starts.
- **Input** : the number of customers, series of customer's patience.
- **Output**: the number of sold hotdogs.



Small Hotdog Stand (cont)

- 첫 핫도그는 기다리는 시간 없이 바로 나옵니다.
- 맨 앞에 도착했을 때 고객의 patience가 0이 되어도 핫도그를 받을 수 있습니다.
- Small Hotdog Stand 예제에 따르면 Input과 Output은 다음과 같습니다.
 - 4명의 고객
 - Patience는 각각 3, 1, 1, 2
 - 팔린 핫도그의 수는 3개

Big Hotdog Stand

- Using your Queue ADT, implement hotdog stand simulation.
- Now, the hotdog stand gets larger.
 - It makes two hotdogs per time unit.
- **Input** : the number of customers, series of customer's patience.
- **Output**: the number of sold hotdogs.

