Module 3: Threads in Go
Topic 3.3: Buffered Channels

Channel Capacity

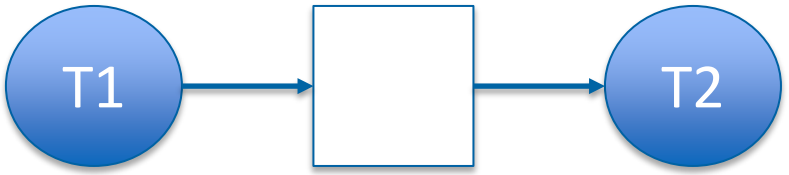
- Channels can contain a limited number of objects
  - Default size 0 (unbuffered)
- **Capacity** is the number of objects it can hold in transit
- Optional argument to `make()` defines channel capacity

```
c := make(chan int, 3)
```

- Sending only blocks if **buffer is full**
- Receiving only blocks if **buffer is empty**

Channel Blocking, Receive

- Channel with capacity 1




```
c <- 3
```

```
a := <- c
b := <- c
```

- First receive blocks until send occurs
- Second receive blocks forever

Channel Blocking, Send

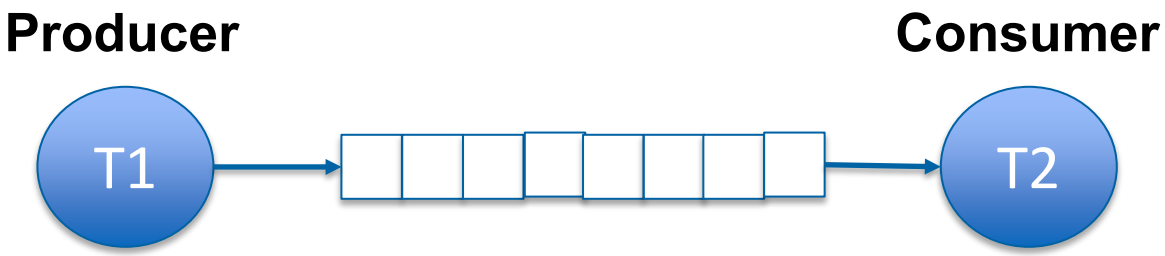

```
c <- 3
c <- 4
```

```
a := <- c
```

- Second send blocks until receive is done
- Receive can block until first send is done

Use of Buffering

- Sender and receiver do not need to operate at exactly the same speed



- Speed mismatch is acceptable
- Average speeds must still match