

# Data Structures

David Morgan

## A list

C

I

M

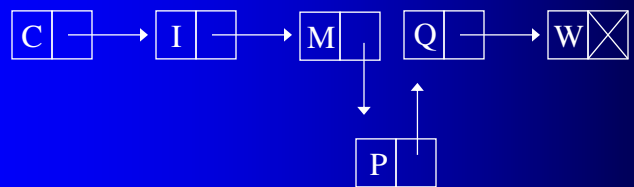
Q

W

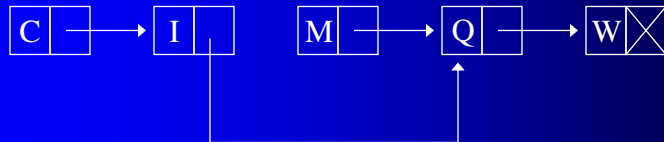
## A linked list



## Linked list node insertion

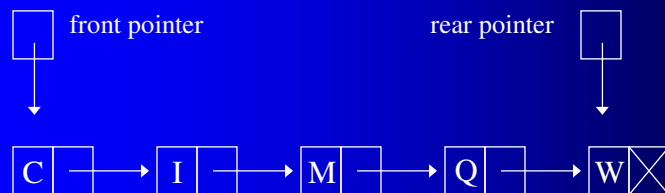


## Linked list node deletion



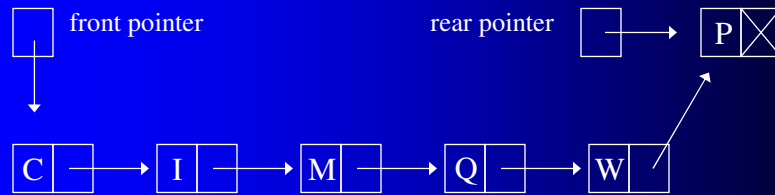
M is not in the list.

## Special linked list: a queue



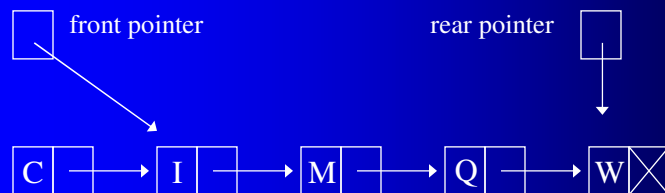
All insertions occur an one end (the “rear”)  
all deletions at the other end (the “front”)

## Queue node insertion



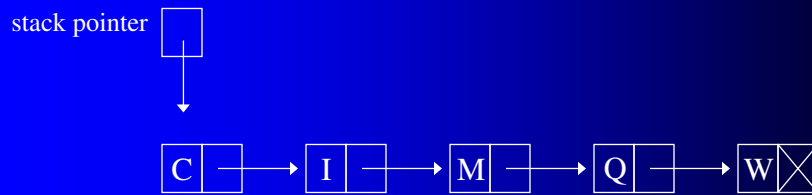
P is at the “rear” of the queue behind W.  
The queue has been lengthened.

## Queue node deletion



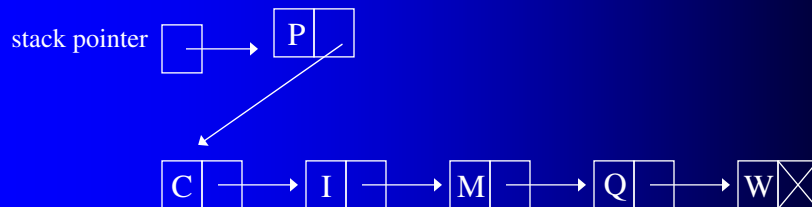
I is at the “front” of the queue, C is not in  
it. The queue has been shortened.

## Special linked list: a stack



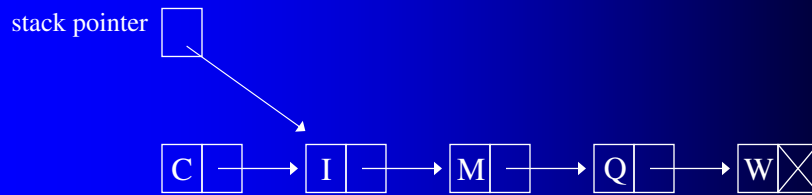
All insertions and deletions occur at one end, the “top.

## Stack node insertion



P is top node, C is now second.

## Stack node deletion

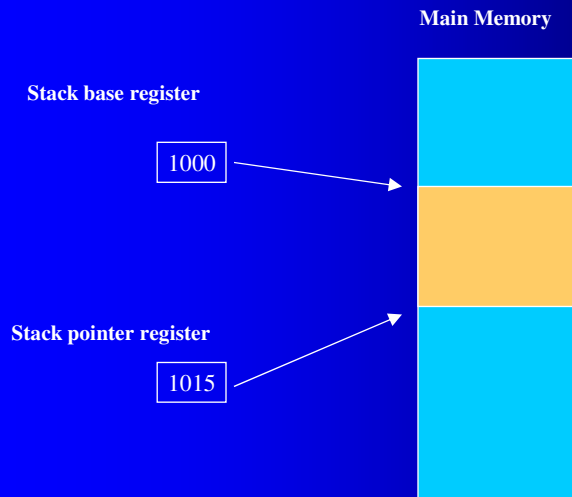


I is top node. C is not in stack.

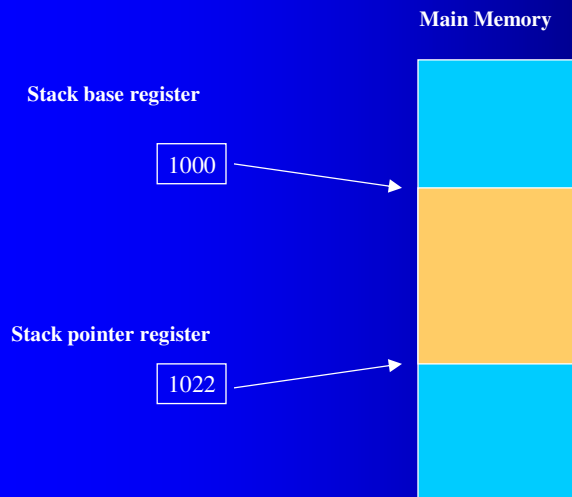
## Intra-program Flow of control



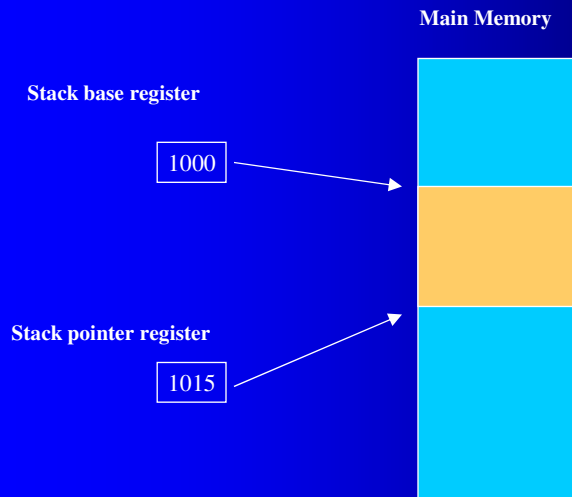
# Uses a stack



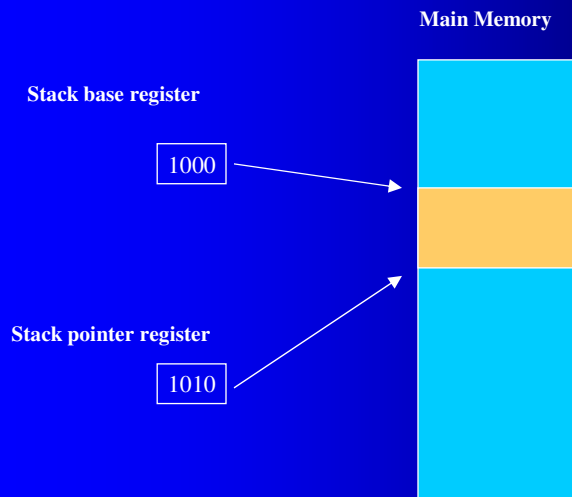
# Uses a stack



# Uses a stack

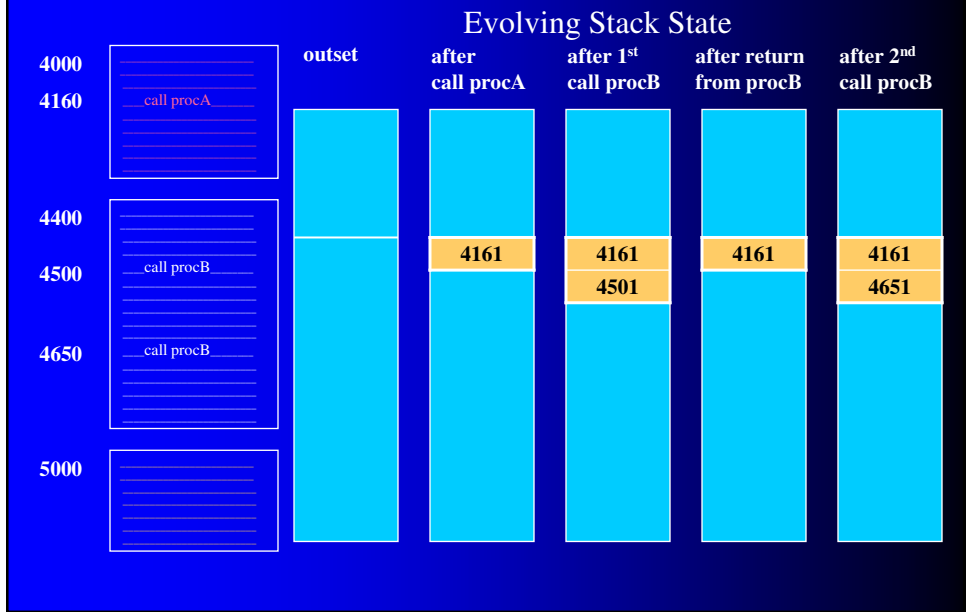


# Uses a stack





# Intra-program Flow of control



# Intra-program Flow of control

