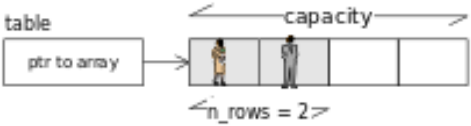
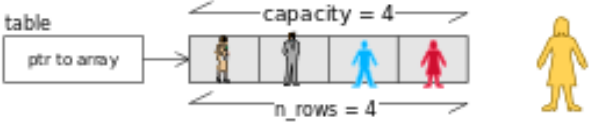
Algorithm for Growable Array

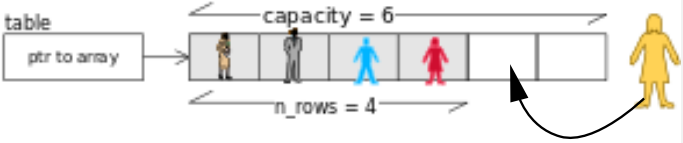
Add entries to array



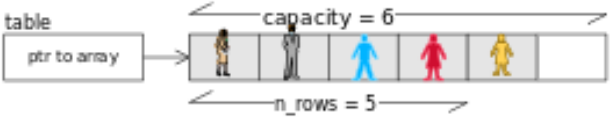
When occupied == capacity:



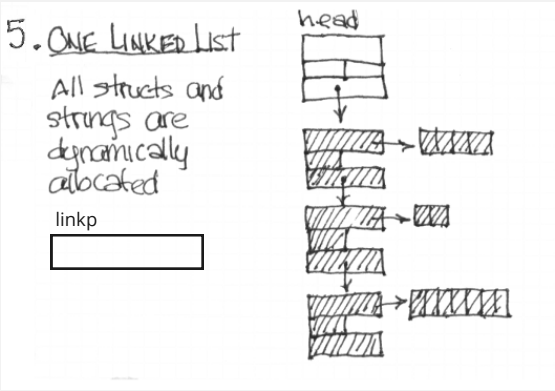
Then realloc memory and update capacity



Then continue adding to expanded array.



5 . A Linked List



Problem: realloc() may have to move the array
Solution: Create each entry as needed, insert in list

1 . use malloc to create each entry
2 . move pointers to insert entry in list

Defining the data structures:
struct link { char *word; int value; struct link *next; };
struct link head;
struct link *current_link;

Examine Code: Discuss Algorithms for functions

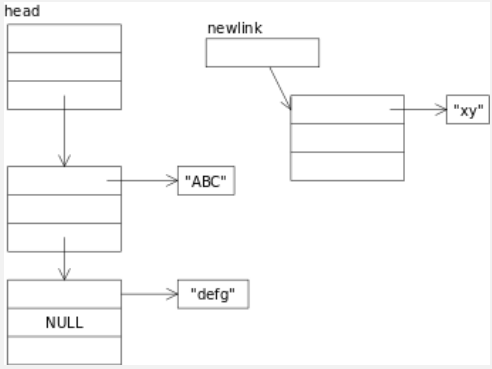
Pros and Cons of this solution

Inserting a link at front of a linked list

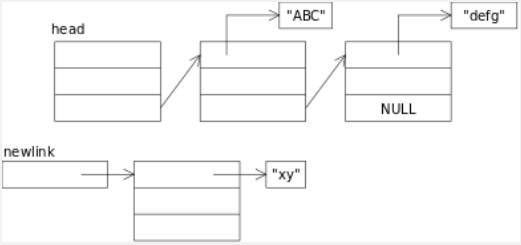
To add a link to the front of a iinked list"

1 . make new link point to current first link

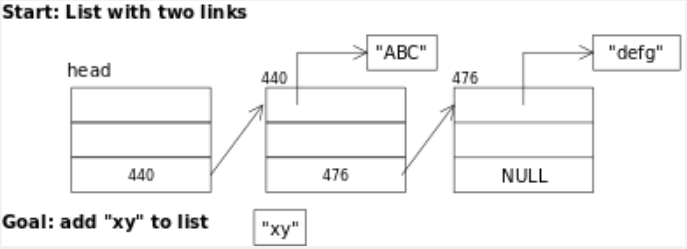
2 . make head link point to the new link



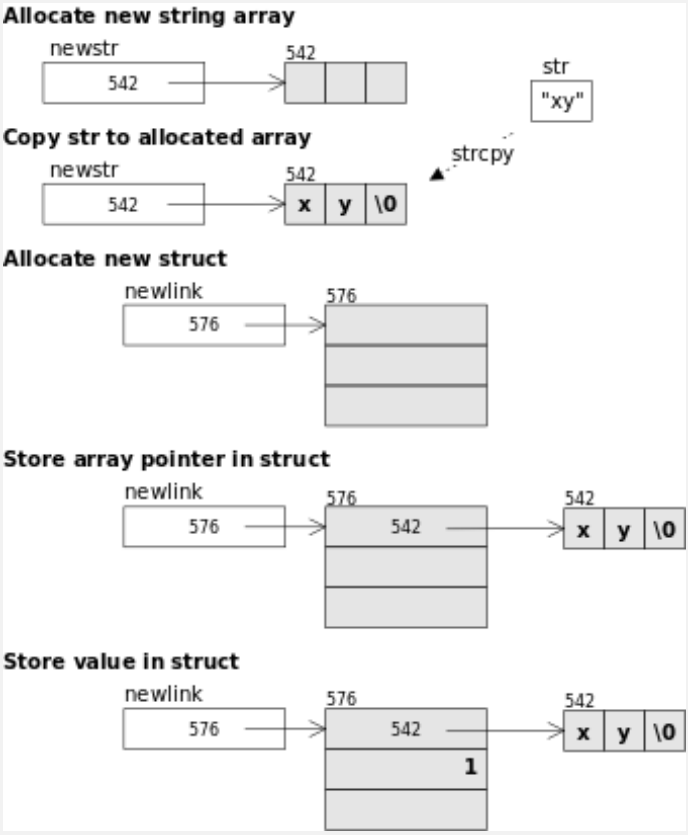
Linked lists are often drawn horizontally:



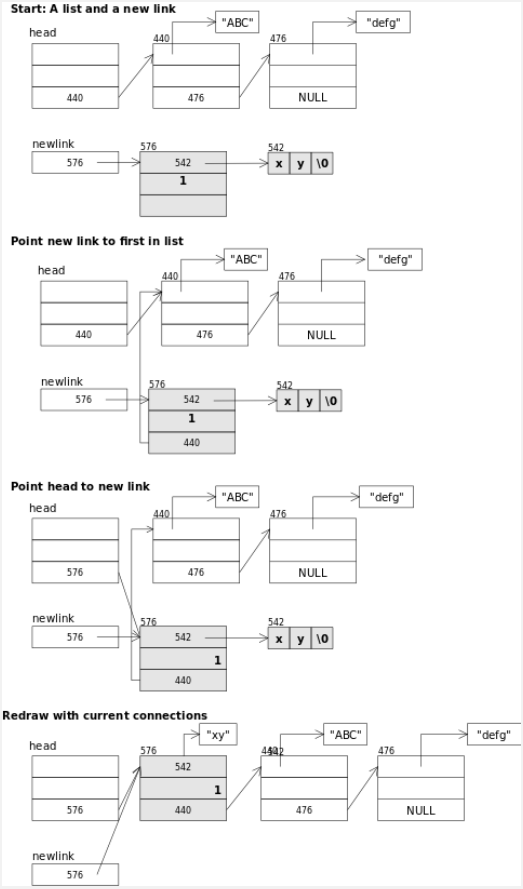
Procedure for Inserting a New Item



Make and populate new Link

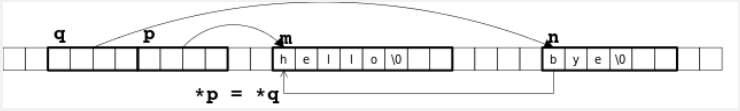


Insert new Link at Front



Common Use of Pointers: Processing Strings

```
char m[8] = "hello";
char n[6]  = "bye";
strcpy(m, n);
```



You have to copy the string, char by char.
Use a loop with indexing m[i] = n[i] until n[i] == \0
or
Use a loop with pointers *p = *q until *q == \0