Freq AB

RECURSION

Problem Solving with Computers-I

https://ucsb-cs16-wi17.github.io/

C++

```
#include <iostream>
using namespace std;
int main(){
    cout<<"Hola Facebook\n";
    return 0;
}
```

GitHub

Announcements

- Please register your clickers on Gauchospace
- No lecture Thursday: 03-09 (I will be away that day). Please watch the video on C strings by my colleague Michelle Craig: https://c-programming.onlinelearning.utoronto.ca/Strings_and_Files.shtml
- HW 13 and 14 are due next week on Tuesday!
- Check your latest grades on Gauchospace!

Review: Iterating through sequences

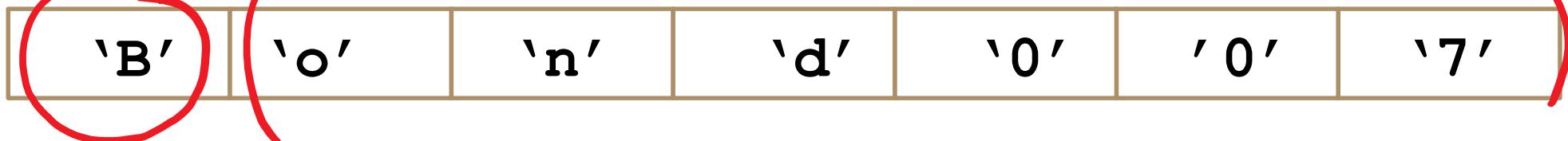| name	'B'	'o'	'n'	'd'	'0'	'0'	'7'

```cpp
void printElements(char *arr, int len){
    for(int i =0; i< len; i++)
        cout<<arr[i];
    cout<<endl;
}


int main(){
    char name[]={'B','o','n','d','0','0','7'};
    printElements(name, 7);
}
```

Recursion

0x8000

char *

name | 'B' | 'o' | 'n' | 'd' | '0' | '0' | '7'

```
void printElementsRecursive(char *arr, int len){
    if(len<=0){// Base case
        return;
    }
    cout<<arr[0];
    printElementsRecursive(arr+1, len-1);
    return;
}
int main(){
    char name[]={'B','o','n','d','0','0','7'};
    printElementsRecursive(name, 7);
}
```

Print Backwards

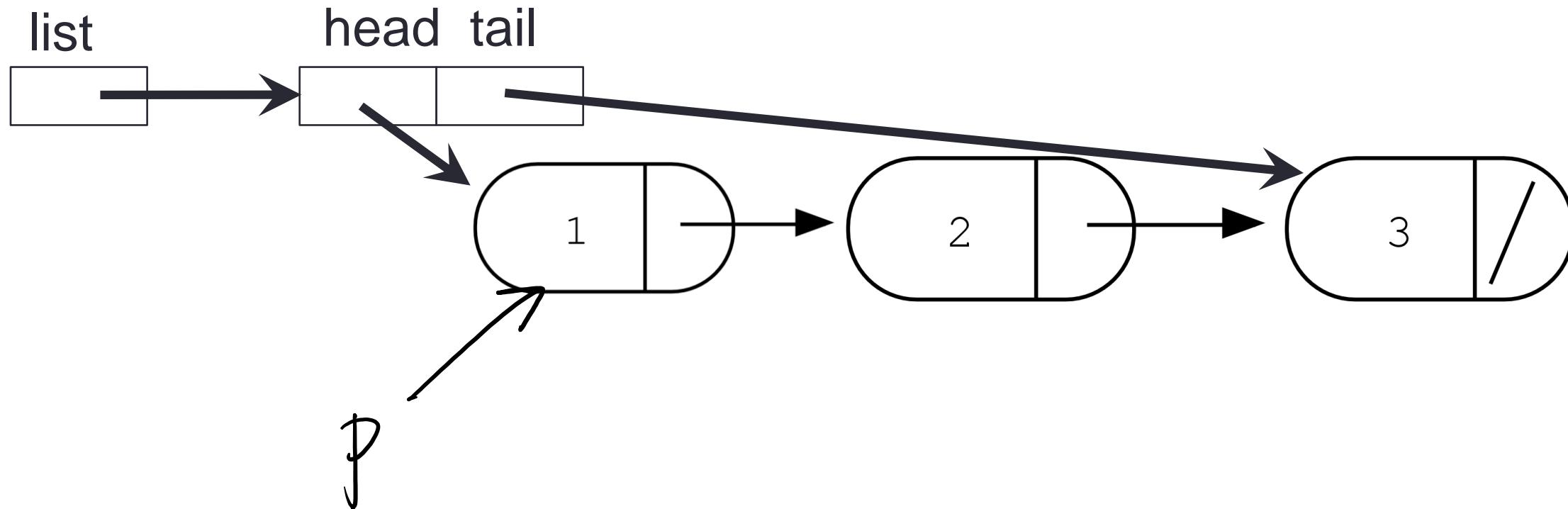| name	'B'	'o'	'n'	'd'	'0'	'0'	'7'

```
void printElementsBackwards(char *arr, int len){

    if(len<=0){
        ____(1)____

        return;
    }
    _____(2)_____

    _____(3)_____
}
```

Choose the correct order of statements

	(1)	(2)	(3)
A.	cout<<endl;	cout<<*arr;	Print*
B.	;	cout<<*arr;	Print*
C.	;	Print*	cout<<*arr;
D.	cout<<*arr;	Print*	cout<<endl;

Print=>printElementsBackwards(arr+1,len-1);

Printing elements of a list (iteratively, recursively, backwards)

list   head tail

1   2   3

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Under the hood of recursion

name	'B'	'o'	'n'	'd'	'0'	'0'	'7'

```
void printElementsBackwards(char *arr, int len){

    if(len<=0){ //Base case
        return;
    }
    printElementsBackwards(arr+1,len-1);

}
```

See code from lecture!

Next time

- Wrap up and review