Linked Lists ctd..

15-123

Systems Skills in C and Unix
Linked Lists wrapping

typedef struct node {
    void* data;
    struct node* next;
} node;

typedef struct list {
    node* head, *tail;
    int count;
} ;

![Diagram of linked list structure]
Checking the integrity of a LL

```c
int isSegment(node* start, node* finish){
    if (start==finish) return 1;
    while (start != finish) {
        if (start->next == NULL) return 0;
        start = start->next;
    }
    return 1;
}
```
Reversing a list in O(n)?

image source: Weiss Data Structures
Insert in order
An Array of Linked Lists
Sparse Matrices

Description: S ADMITTANCE MATRIX 1138 BUS POWER SYSTEM, D.J. TYLAVSKY, JULY 1985.
The matrix

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Storing Sparse Matrices
Structs used

typedef struct node {
    int row, column,
    double value;
    struct node* rowPtr;
    struct node* colPtr;
} node;
Structs used

typedef struct matrix {
    node** rowList;
    node** columnList;
    int rows, columns;
} matrix;
Coding Examples