Design and Practice of Software

Name:Yang Yi

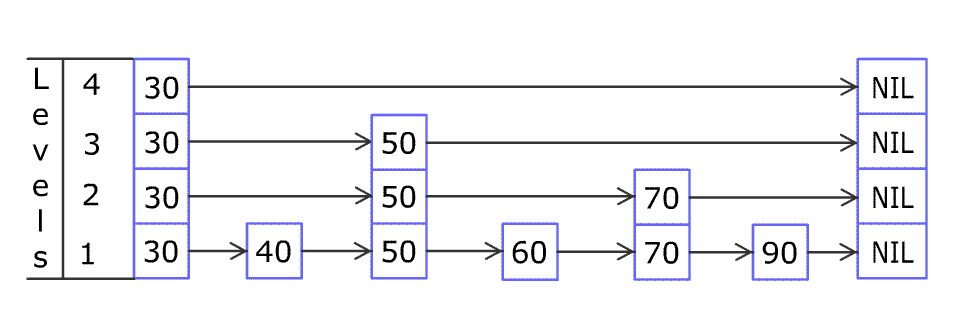
Student Number:1130320118

1. Linear Structure

1. Skip List and Priority Queue

I use skip list in priority queue

down here is the implement to insert 80 to the skip list



2. KMP algorithm

The KMP means *Knuth–Morris–Pratt* , because the algorithm was conceived in 1970 by Donald Knuth and Vaughan Pratt, and independently by James H. Morris. The three published it jointly in 1977.

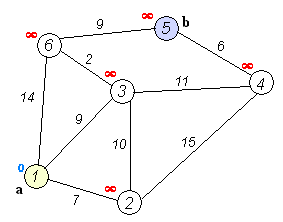
2. Tree Structure

3. Graph Structure and Hashing

1. Prim's algorithm

2. Kruskal's algorithm

3.Dijkstra's algorithm



4.Floyd–Warshall algorithm

4.Internal sort

1.Quicksort

Quicksort is a divide and conquer algorithm. In my program , I use a doubly linked list like this:



My key recursive function called :

“qs(node \*p, int num)” //*define at line 41 in the quicksort.c*

// *p* points to the first one of the section it should sort

// num means the number of elements it should sort

The steps are:

1. Choose the first one as a pivot

2.check others , if it is smaller than pivot , then move it to pivot’s left

3.recursively sort the elements at pivot’s left and right

It is not a stable sort.

The animation down here is perform a quicksort.

