Data Structures and Algorithms

Fibonacci Decrease Key

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The *decreaseKey* function:

```
function decreaseKey(h,n,v)  //h is the heap, n is the node, v is the new value
    {
    var p;
    //set the value of the node to the new value
    n.value = v;
    //now check the parent's value
    p = n.parent;
    if (p.value > v)
        {
        //the heap is out of order, so cut out n and place it in the root list
        pruneAndInsert(h,n);
        //cascading cut - cut ancestors as long as they are marked
        while (p.marked)
            {
            var temp = p.parent;
            pruneAndInsert(h,p);
            p = temp;
            }
        //mark the unmarked node that stops the cascade (unless it is a root)
        if (p.parent != p) p.marked = TRUE;
        }
    }
```