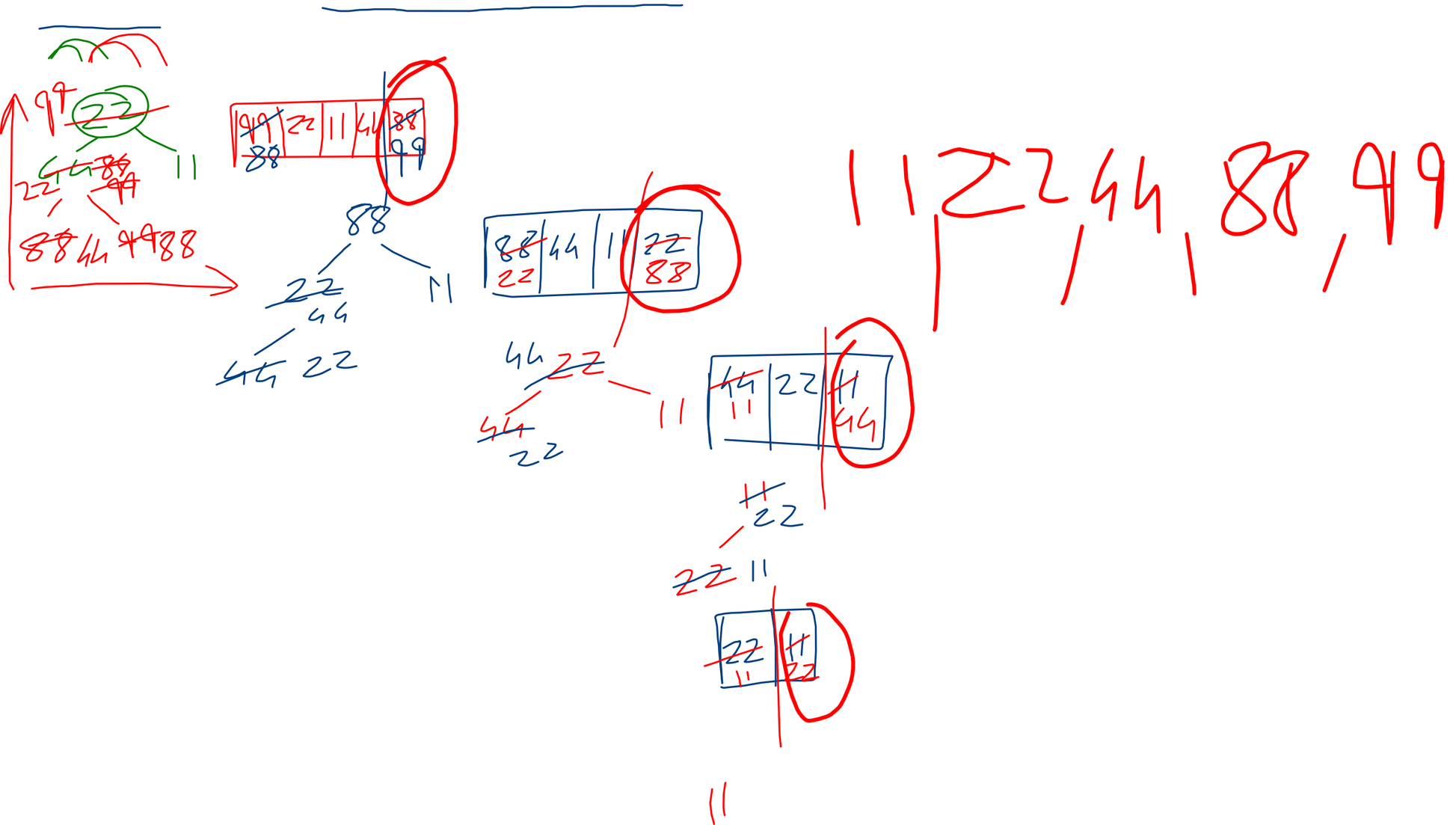
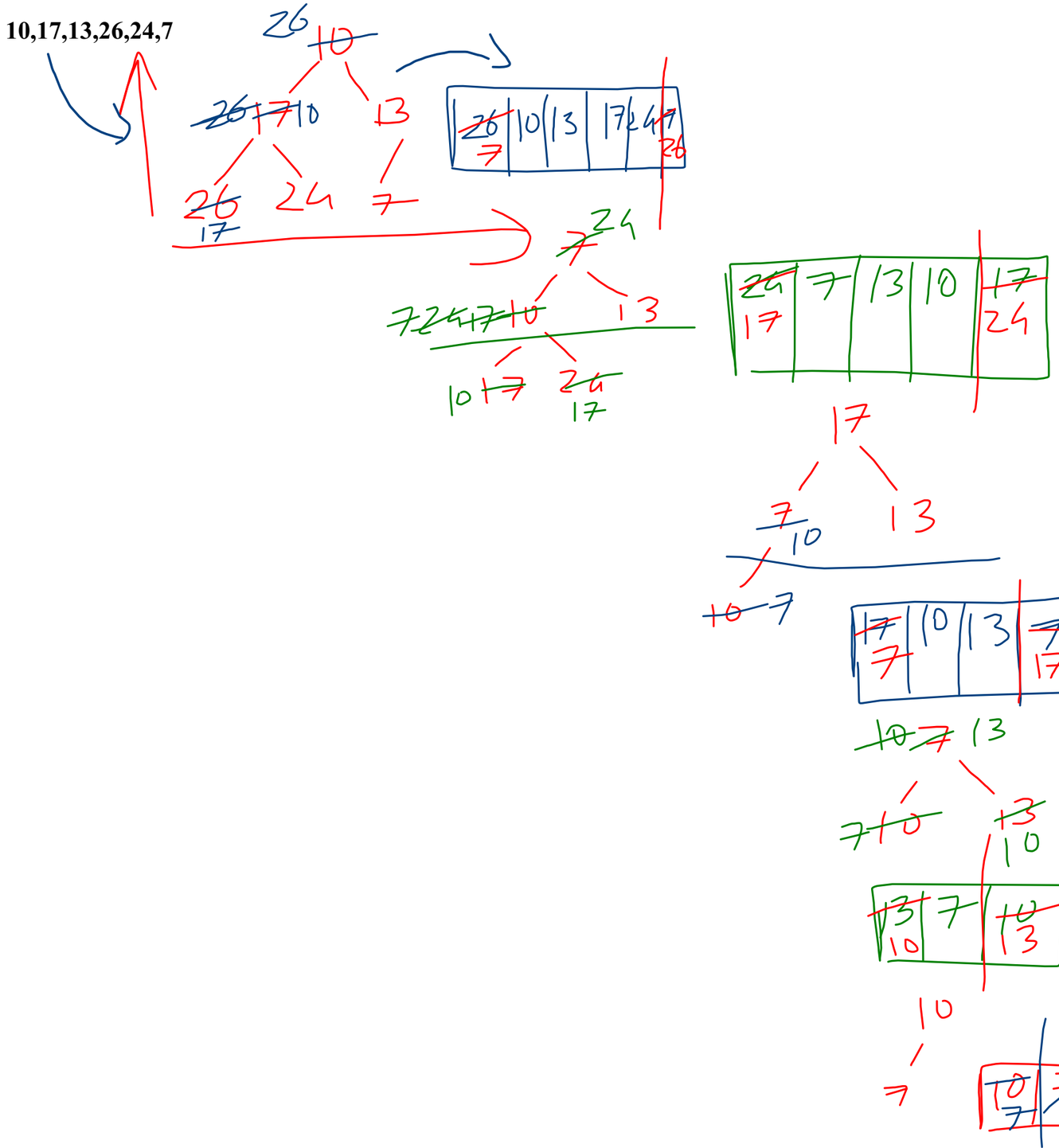
HEAP:
memory used to create and destroy local variables.
the way it operates for fast access.
it uses MaxHeap/MinHeap
MaxHeap:parent>child :Tree
MinHeap:parent<child :Tree

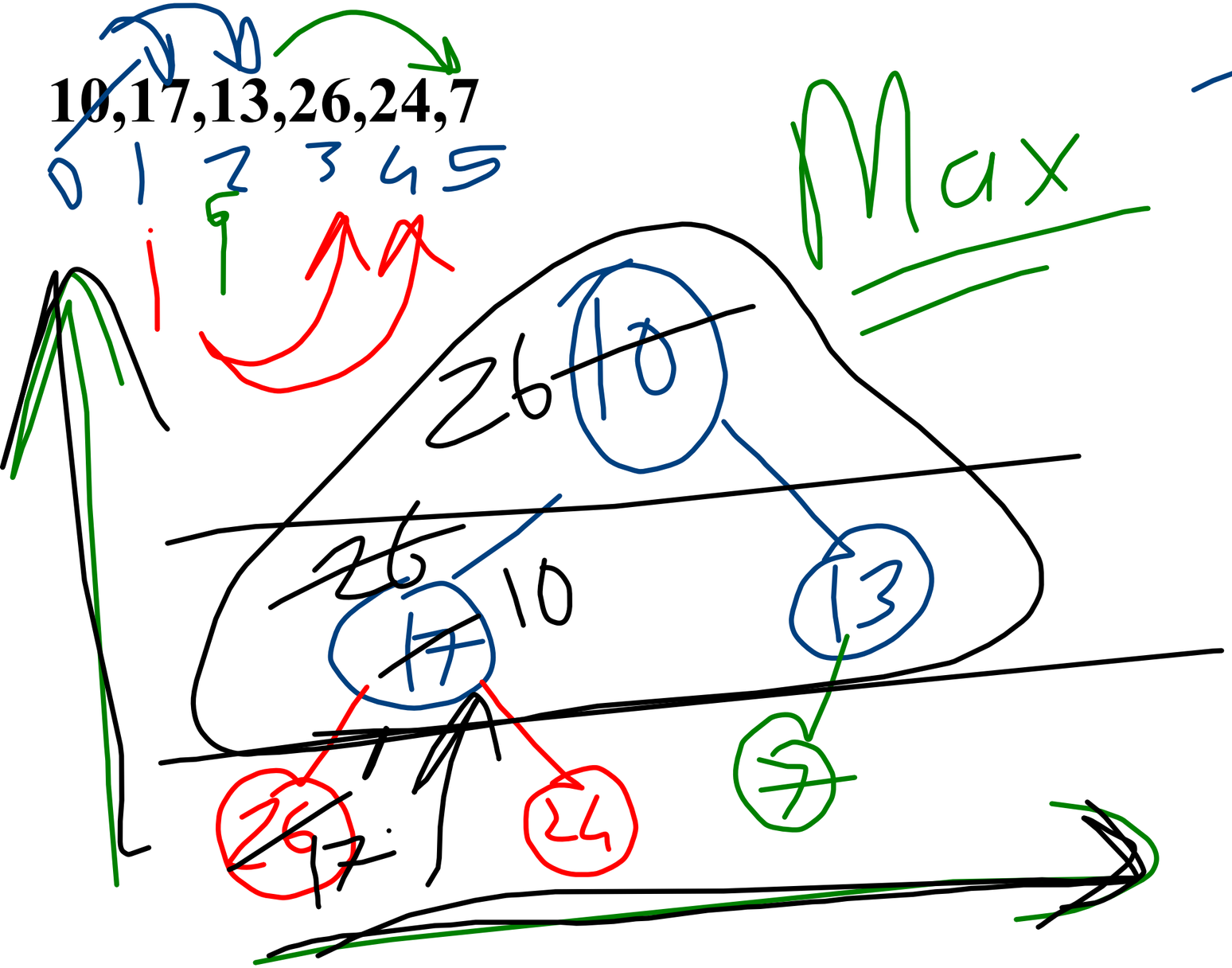


10,17,13,26,24,7



10,17,13,26,24,7

0 1 2 3 4 5

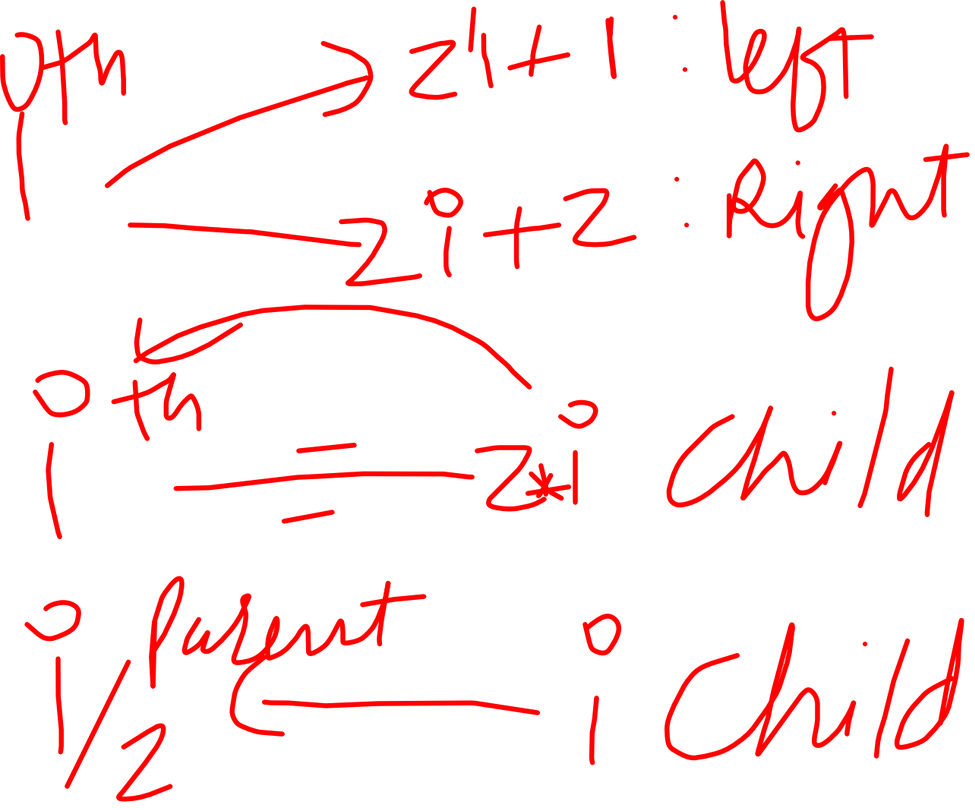


Max Tree Aoray

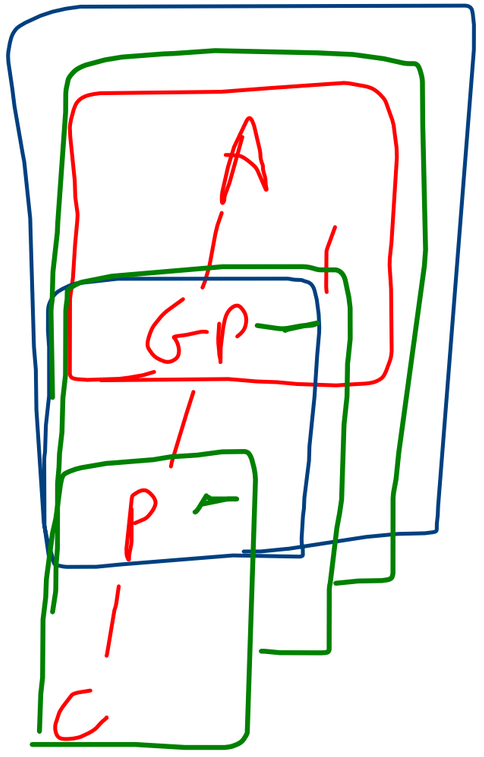
0^{th} Root

$2i+1$

$2i+2$



Heap sort:
losely based on heapify process
i(parent)-----2i+1/2i+2:child nodes
i(parent)-----2i child node
i/2(parent)-----i child node(sorting)



```
void heap_sort(int a[])
    {
        int temp,i,j,pc;//pc:parent-child
        for(i=a.length-1;i>0;i--)//last to first
            {
              for(j=0;j<=i;j++)
                 {
                    boolean done=true;
                    pc=j;
                    while(pc>0 && pc/2>=0 && done!=false)
                      {
                    if(a[pc]>a[pc/2])
                       //child   parent
                       {
                           temp=a[pc];a[pc]=a[pc/2];a[pc/2]=temp;
                           pc=pc/2;//go to parent to check
                           done=false;
                       }
                  }
                }//j closed
           temp=a[0];a[0]=a[i];a[i]=temp;//swap largest to last
    }
}
```