Lab 10

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| Function | Big O |
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| void swap(int\* a, int i, int j)  {  c++;  int t = a[i];  a[i] = a[j];  a[j] = t;  } | **O(1)** |
| void min\_heapify(int\* a,int n,int i)  {  int s=i;  int l = 2\*i+1;  int r = 2\*i+2;  if(l<n && a[l]<a[s])  {  s = l;  }  if((r)<n && a[r]<a[s])  s = r;  if(s!=i)  {  swap(a,i,s);  min\_heapify(a,n,s);  }  } | **O(logn)** |
| void build\_heap(int\* a,int n)  {  for(int i=n/2-1;i>=0;i--)  {  min\_heapify(a,n,i);  }  } | **O(n\*logn)** |
| void sort(int\* a,int n)  {  for(int i=1;i<n;i++)  {  swap(a,0,n-i);  min\_heapify(a,n-i,0);  }  } | **O(n\*logn)** |
| void printFirst(int\* a,int n,int k)  {  for(int i=1;i<=k;i++)  {  printf("%d ",a[0]);  swap(a,0,n-i);  min\_heapify(a,n-i,0);  }  } | k = n%100+r  O(k)  O(k\*logn)  **O(k\*logn)** |





