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8.1

Heap Sont without heapity

```
# include Riostneam)
using namespace staj
word build Max Heap (int arcret j int n) of
    for (intial ; ikn; it+)d
         if (ann[i] , ann[cf-1)/2]) 2
                                        INT WAR () +
             int j=1
             while (anr. [j] >anr. [(j-1)/2])d
                  Swap (ann [i], ann [li-1/2]);
                 å=(2-1)/2;
                          Think ( Souther author ?
                     void heap sont (int arrell, int n) d
     build Man Heap (anr.[], in);
                                    " MIN HADA
     for (9nt i=n+; 970; j--) of
                                        Hetman D:
         swap (ann [o], ann [i]);
         9nt j=0, 9ndex;
         don
             andex = (2"j+1);
    it (ann Endex] Kannlinder + it bk index (i-1)){
                     andex++;
```

```
it Canre [j] x ann [index] & Index x?) 1
          swap (anrigg, anri [index]);
                             the fire temperature of the second
   g=index;
Zwhile (Index (i);
                     tole I specific good not been been
9nt main() 1
     "int ann [] = 2 10, 20, 15, 17, 9, 213;
     9nt n = steof (ann) / size of (ann [o]);
    heapsont (ann, vi);
    printf ("Sonted array: ");
    for (m+ 920; 1 xn; 1++)d
          potntf("7.d.", ance[:]);
    printt ("In");
    Hetunn 0;
    Console Output
> Sonted array! 9 10 15 17 20 21.
```

Heap Sort with Reapity

#include liestneam) tor (24+ 3=4-1; 3+0; using namespace std; Broup (country) out it void teapify (9nt arrely; int n, 9nt i)d int largest = 13 int L= 2 1 + 13 int 11 = 2 " i+ 2; if (like the annell) & annellaurgest)d langest = lig heapsont (ann, n); if (n <n L& anni[n] & anni[langest])d langest=1; [[II]man, "but"] Houng it (largest != î)d swap(annti], ann[laggest]); heapity (ann, n, laggest);

+ Sonted array: 5 4 ture 13

Console Putode

1

void theapSont ("int arrats, "int in) of for (3nt i= 1/2 -1; 1/20; i-)e theapity (and, n, i); toa (9n+ 9=n-1; 170; 1-)d swap (ann [o], ann [i]); Reapity Cource, i, 0); 9nt main()d 9nt arre[] = d12, 11, 13, 5, 6, 73; ind n = size of (ann) /size of (anr [0]); heapsont (ann, n); print ("sonted annay: "); for (int i=0 ; ixn; i++)d = 100000 printf ("7.d", anntis); point ("In"); return 0; Console Output

>> Sonted array: 5 6 7 11 12 13

Six actual