## ADA LAB TEST-2

```
#include < stdio. h >
#include (stdlib.h)
# include (time. h)
 :[000000] rus bri
 void maxheap(int avr[], Int size, inti)
  int i, h;
 For ( h = 0; h < 180; h++)
  For (j=0; j < 40; j++)
  2
 3
  int largest = i;
  int left= 2 * i+1;
  int right = 2 * i+2;
  if (left < size of arr [left] > arr [largest]
     largest = left;
  if (right (size +4 arr[right]) arr[largest]
     largest = right;
   if [largest!=i)
                               (1)
```

(1)

```
1 1 1 1 1 1 1 1
   temp= ove [i];
   aur[i]= aur[largest];
                          PART ARE CHI
   are[largest] = temp;
   marheap (aur, size, largest);
 3
}
 void heapsost (ind aux [], ind size)
5
 int ;;
                                                  11-71 +1
  for (i= 12e/2-1; i>=0; i--)
      maxheap (ave, size, i);
   for (i= size-1; i>= 0; i--)
  1
    temp: au [0];
    are [0] = are[i];
                                   Corp (arail a ilas
    aur[i]: temp;
    marheap (arr, i, 0);
 3
  void print Array ( int ave [], int n)
                                            it strigged by
   int i;
                                          Sai " in a Tangan And
   for (i=0; i <n; i++)
    printf ("1.d", auclij);
     printf ("In");
 3
                            we of English you go a site to give if
```

part promise to the Q

```
int main()
                                              and the state of
time-t start, end;
 int n;
 Sound (time (0));
 Points ("Enter the no. of elements In");
  scant (4.1.44, fn);
  for (int i= 0; i<n; i++)
                                     14 14 14 14 1 1 1
   auc[i] = rand ();
                                  (-1:2 21:21:1:1
   Hart= time(NULL);
  heapsost (ave, n);
   end = time (NULL);
 printf (" The away is sorted In");
  printf (" The time taken is 1.. 10 F/n",
  difftime (end, start)/
  CLOCKS-PER-SEC);
   setum 0;
  3
```

```
Modification
#include (sedio.n)
# melude (time. h)
# include (stalib. h)
the state
11 1) minimum heap
  void heap (int a (), int n) {
  int i, j, h, temp;
  for (i=2; i <= n; i++) {
 j=i;
                                     epople of a straight
  k= j/2;
  temp = a[j];
  While (h) offa[h] >temp) {
  a[j]=a[h];
                    i= h;
                                Transfer of a Alle
   h= 4/2;
 3
                                    11.11 211 2 10010
  a [j] = temp;
 3
}
112) heapity function
   void heap 1 (int a (], int n) {
 int i, j, k, temp;
 for(i= n/2; i>0; i --){
 h=i;
 temp = a[h];
 j = 2 h;
 while (j <=n)
                         9
```

9

```
if(jcnffa[j]<a[j+]]){
1=1+1;
it (temp (a [j]) {
 achi =acj);
 h=j;
 j= 2+ h;
 else {
 break;
                                           1 () 11 mm & 21
a[h] = temp;
                                 gar I at a Consult o Lat
                               : But had mate I black
                       if the to be made the rate of " ) this
113) Avoay adjustment
  I (n tri,[] a tri) truits
                           in a thought the other 1 that I
   for (int i = 0; i < 100; i++)
                                  Iruit : wood it follow
  2
  for (int i= 0; i < 10; i++)
                                    : ( I i Jo f , b f " ) ton o
  5
                                        int i=2, temp = a(1);
  while (i(=n) {
  if (icnffaci)> aci+1])
  2
  i=i+1;
```

```
0
if (a[i](temp)
a[i[2] = a[i];
i= i * 2;
}
 else
 break;
 a [i/2] = temp;
114) maind driver code
   void main () {
  int a [10000], n,i, temp;
  double StartTime, end Time;
  private ("In Enter the value of n:");
  Scanf ("1.d", fn);
   pointf ("enter the elements to be costed/n");
  for (i=1; i <= n; i++) {
   seant ("1.d", fa[i]);
  3
  Start Time = clock ();
 heap (a, n);
  for (i= ni; >= 2; i--) {
  temp=a[1];
  a(1)=a(i);
   asi] = temp;
   adjust (a,i-1);
   end Time = clock ();
 printf ("In After sorting: In");
 for (i=1; i<=n; i++)
 Paints ("1.d/t", a(i));
 points["InTime taken is 1. Fln",
( [ ( double ) ( end Time - start Time )) |
 CLOCKS- PER-SEC));
```