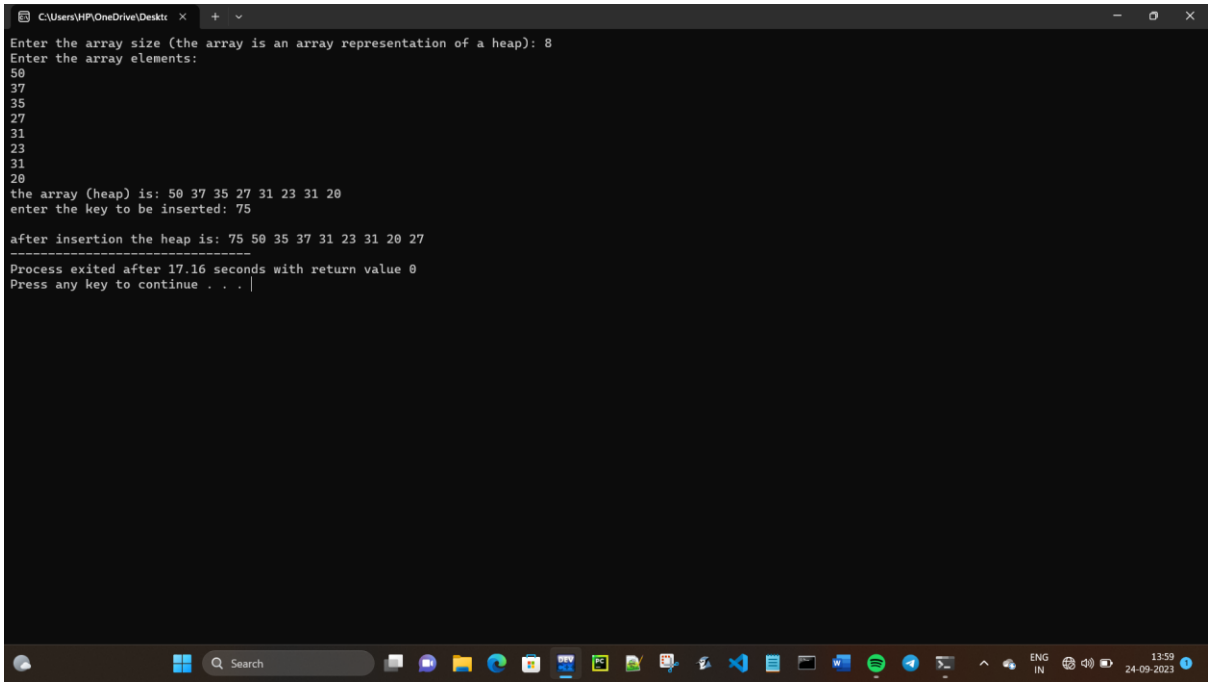
/*insert element in max heap*/

```
#include <stdio.h>

int n=0;


void insert_key(int arr[], int key);

void increase_key(int arr[], int id, int key);


int main() {

   int i,arr[20],key=0;

   printf("Enter the array size (the array is an array representation of a heap): "); //so, heap size = arr size

   scanf("%d", &n);

   //int arr[n];

   printf("Enter the array elements:\n");

   for (i = 0; i < n; i++) {

      scanf("%d", &arr[i]);

   }

   printf("the array (heap) is: ");

   for (i = 0; i < n; i++) {

      printf("%d ", arr[i]);

   }

   printf("\n");

   printf("enter the key to be inserted: ");

   scanf("%d", &key);

   printf("\n");

   insert_key(arr, key);

   printf("after insertion the heap is: ");

   for (i = 0; i < n; i++) {

      printf("%d ", arr[i]);

   }

   return 0;
```

```
}

void insert_key(int arr[], int key)
{
        n++;
        arr[n-1]=-99999;
        int id=n-1;
        increase_key(arr, id, key);
}

void increase_key(int arr[], int id, int key) {
   if (arr[id] > key) {
      printf("ERROR: node value already greater than key");
      return;
   }
   arr[id] = key;
   while (id > 0 && arr[(id - 1)/ 2] < arr[id]) {
      int temp = arr[(id - 1)/ 2];
      arr[(id - 1)/ 2] = arr[id];
      arr[id] = temp;
      id = (id - 1)/ 2;
   }
}
```


C:\Users\HP\OneDrive\Deskto
Enter the array size (the array is an array representation of a heap): 8
Enter the array elements:
50
37
35
27
31
23
31
20
the array (heap) is: 50 37 35 27 31 23 31 20
enter the key to be inserted: 75
after insertion the heap is: 75 50 35 37 31 23 31 20 27
Process exited after 17.16 seconds with return value 0
Press any key to continue . . .
Search
ENG
IN
13:59
24-09-2023