Assignment 1 advance sorting

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Q.1Given an array of integers, sort it in descending order using merge sort algorithm.

Code;-

```
#include<iostream>
#include<vector>
using namespace std;
  void merg(vector<int>&a,vector<int>&b,vector<int>&v){
    int i=0;
    int j=0;
    int k=0;

    while(i<a.size() && j<b.size()){
       if(a[i]>b[j])
       v[k++]=a[i++];
       else
       v[k++]=b[j++];
    }
    if(i==a.size()){
        while(j<b.size())v[k++]=b[j++];

    }
 else if(j==b.size()) {
    while(i<a.size())v[k++]=a[i++];

}
  }
  void mergs(vector<int>&re){
   int n=re.size();
   if(n==1)return;
   int n1=n/2,n2=n-n/2;
   vector<int>a(n1),b(n2);
   for(int i=0;i<n1;i++){
      a[i]=re[i];
   }
   for(int i=0;i<n2;i++){
      b[i]=re[i+n1];
   }
   mergs(a);
   mergs(b);
   merg(a,b,re);
```

```
  }
int main(){
    int a[]={2,31,8,101,0,1,2,3,2,33,99,80,11,1001,566,888,9988,78};
   // int b[]={1,2};
 int n1=sizeof(a)/sizeof(a[0]);
//    int n2=sizeof(b)/sizeof(b[0]);

   vector<int>re(a,a+n1);

   // vector<int>d(b,b+n2);
   // vector<int>v(n1+n2);
   mergs(re);
   for(int i=0;i<re.size();i++){
       cout<<re[i]<<" ";
   }
}
```