1)Merge Sort for Efficient Employee Salary Sorting:

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#include <iostream>
using namespace std;
struct Employee {
   int id;
   string name;
   double salary;
};
void merge(Employee arr[], int low, int mid, int high) {
   int n1 = mid - low + 1;
   int n2 = high - mid;
   Employee L[n1], R[n2];
   for (int i = 0; i < n1; i++)
      L[i] = arr[low + i];
   for (int j = 0; j < n2; j++)
      R[j] = arr[mid + 1 + j];
   int i = 0, j = 0, k = low;
   while (i < n1 && j < n2) {
      if (L[i].salary <= R[j].salary)
         arr[k++] = L[i++];
      else
         arr[k++] = R[j++];
   }
   while (i < n1)
      arr[k++] = L[i++];
   while (j < n2)
      arr[k++] = R[j++];
}

void mergeSort(Employee arr[], int low, int high) {
   if (low < high) {
      int mid = (low + high) / 2;
      mergeSort(arr, low, mid);
      mergeSort(arr, mid + 1, high);
      merge(arr, low, mid, high);
   }
}
int main() {
   int n;
   cout<<"Enter the Total Number of Employee:";
   cin>>n;
   Employee emp[n];
   for(int i = 0; i <n; i++){
            cout<<"\nEnter the ID of the Employee: ";
            cin>>emp[i].id;
                     cout<<"Enter the Name of the Employee: ";
            cin>>emp[i].name;
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        cout<<"Enter the Salary of the Employee: ";
        cin>>emp[i].salary;
        }
  mergeSort(emp, 0, n - 1);
  cout << "Employees sorted by Salary:\n";
  for (int i = 0; i < n; i++) {
    cout << "\nName:"<<emp[i].name<<"    ID: " << emp[i].id  << "        Salary: " << emp[i].salary
<< endl;
  }
  return 0;
}
```

```
Enter the Total Number of Employee:4

Enter the Data of the 1 Employee:
Enter the ID of the Employee: 24
Enter the Name of the Employee: Siddhant
Enter the Salary of the Employee: 25000

Enter the Data of the 2 Employee:
Enter the ID of the Employee: 21
Enter the Name of the Employee: Ravindra
Enter the Salary of the Employee: 50000

Enter the Data of the 3 Employee:
Enter the ID of the Employee: 54
Enter the Name of the Employee: Ashwin
Enter the Salary of the Employee: 56000

Enter the Data of the 4 Employee:
Enter the ID of the Employee: 23
Enter the Name of the Employee: Prathmesh
Enter the Salary of the Employee: 75000
Employees sorted by Salary:

Name:Siddhant   ID: 24  Salary: 25000

Name:Ravindra   ID: 21  Salary: 50000

Name:Ashwin     ID: 54  Salary: 56000

Name:Prathmesh  ID: 23  Salary: 75000
```