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EXPERIMENT NO: 13
QUICK SORT

Aim

Write a java program that implements Quicksort algoritam for sorting a list of names in ascending order.

Input

A random list of names

Expected output

List in sorted order.

Algorithm.

Algorithm partition (arr, p, r)

```
1. i = p-1
2 for j = p till r
3 If (arr[j] <= arr[i])
4 If (i++ != j)
5 swap(arr[i], arr[j])
6 EndIf
7. EndIf
8 Endfor
9 If(r != (i+1)
10 swap ( arr[i+1], arr[r])
11 EndIf
```

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12. return i+1

Algorithm quicksort (arr, p, r)

1. If (p<r)
2. q = partition (arr, p, r)
3. quicksort (arr, p, q-1)
4. quicksort (arr, q+1, r)
5. EndIf

Result

Output is obtained

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Output—

Enter range : 3

Enter names

Devika
Ajay
Amal

---x After Quick Sort x---

Ajay
Amal
Devika.

```
//321
//Devika B
//Section F : Qn 2
//Quick Sort

import java.util.Scannor;
class quick{
      public static void quickSort(String A[],int p,int r){
            if(p<r){
            int q = partition(A,p,r);
            quickSort(A,p,q-1);
            quickSort(A,q+1,r);
            }
      }

   public static int partition(String A[],int p,int r){
         String x = A[r];
         int i = p-1;
         for(int j=p;j<=r-1;j++){
               if(A[j].comparoTo(x) <=0){
                     i = i + 1;
                     String temp = A[i];
                     A[i] = A[j];
                     A[j] = temp;
                     }
               }
         String temp = A[i+1];
         A[i+1] = A[r];
         A[r] = temp;
         return i +1 ;
   }

   public static void main(String args[]){
         Scannor sc = new Scannor(System.in);
         System.out.print("Enter the Rsnge :");
         int n = sc.nextInt();
         sc.nextLine();

         String A[] = new String[n];
         System.out.println("Enter the names");

         for(int i =0;i<n ;i++){
               A[i] = sc.nextLine();
         }

         quickSort(A,0,n-1);
         System.out.println("\n---X After Quick Sort X---\n");

         for(int i =0;i<n;i++)
               System.out.println(A[i]);
}}
```