CS263 LAB9

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Task: Shortest Job First Algorithm implementation

Solution Code:

```
import java.util.*;

public class SJFGA {
    public static void main(String[] args) {
        int[] A = {1,2,3,4,5};
        int[] ArT = {0,1,1,2,4};
        int[] BrT = {2,4,3,1,2};
        int n = ArT.length;
        int[] CT = new int[n];
        int[] TAT = new int[n];
        int[] WT = new int[n];
        int i = 0;
        int k = 0;
        while(i<n){
            int min = 1000000;
            int MnIDX = i;
            int l = i;
            while(l<n && ArT[l]<=k){
                if(BrT[l]<min){
                    min = BrT[l];
                    MnIDX = l;
                }
                l++;
            }
            int t1 = BrT[i],t2 =ArT[i], t3 = A[i];
            BrT[i] = BrT[MnIDX];
            BrT[MnIDX] = t1;
            ArT[i] = ArT[MnIDX];
            ArT[MnIDX] = t2;
            A[i] = A[MnIDX];
```

```
            A[MnIDX] = t3;
            i++;
            if(i<n)
                k = BrT[i];
        }
        for ( int z=0; z<n; z++){
            int l = A[z]-1;
            while ( l>=0){
                CT[A[z]-1]+=BrT[l];
                l--;
            }
        }
        int C = 0;
        while ( C<n){
            if(A[C]==C+1)
                C++;
            else {
                int t = A[A[C]-1] , t1 =
                        CT[A[C]-1], t2 = ArT[A[C]-1], t3 = BrT[A[C]-1];
                A[A[C]-1] = A[C];
                CT[A[C]-1] = CT[C];
                ArT[A[C]-1] = ArT[C];
                BrT[A[C]-1] = BrT[C];
                A[C] = t;
                CT[C] = t1;
                ArT[C] = t2;
                BrT[C] = t3;
            }
        }
        for ( int p=0; p<n; p++)
            TAT[p] = CT[p]-ArT[p];
        for ( int p=0; p<n; p++)
            WT[p] = TAT[p]-BrT[p];
        System.out.println("CT : "+Arrays.toString(CT));
        System.out.println("TAT :"+Arrays.toString(TAT));
        System.out.println("WT :"+Arrays.toString(WT));
    }

}
```

Output:

```
PS D:\Java\ALCS263> cd "d:\Java\ALCS263\" ; if ($?) { javac SJFGA.java } ; if ($?) { java SJFGA }
CT : [2, 12, 6, 3, 8]
TAT :[2, 11, 5, 1, 4]
WT :[0, 7, 2, 0, 2]
```