**OPERATING SYSTEM - CS23431**

**EXP 6(B)**

**SHORTEST JOB FIRST**

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**PROGRAM:**

#include <stdio.h>  
  
int main() {  
 int n, totalwt = 0, totaltat = 0;  
  
 printf("Enter number of processes: \n");  
 scanf("%d", &n);  
  
 int p[n], at[n], bt[n], ct[n], tat[n], wt[n];  
  
 printf("Enter process numbers: \n");  
 for (int i = 0; i < n; i++) {  
 scanf("%d", &p[i]);  
 }  
  
 printf("Enter arrival times: \n");  
 for (int i = 0; i < n; i++) {  
 scanf("%d", &at[i]);  
 }  
  
 printf("Enter burst times: \n");  
 for (int i = 0; i < n; i++) {  
 scanf("%d", &bt[i]);  
 }  
  
 int temp;  
 for (int i = 0; i < n - 1; i++) {  
 for (int j = i + 1; j < n; j++) {  
 if ((bt[j] < bt[i]) || (bt[j] == bt[i] && at[j] < at[i])) {  
 temp = at[i];  
 at[i] = at[j];  
 at[j] = temp;  
  
 temp = bt[i];  
 bt[i] = bt[j];  
 bt[j] = temp;  
  
 temp = p[i];  
 p[i] = p[j];  
 p[j] = temp;  
 }  
 }  
 }  
  
 ct[0] = at[0] + bt[0];   
 for (int i = 1; i < n; i++) {  
 if (at[i] > ct[i - 1]) {  
 ct[i] = at[i] + bt[i];   
 } else {  
 ct[i] = ct[i - 1] + bt[i];   
 }  
 }  
  
 for (int i = 0; i < n; i++) {  
 tat[i] = ct[i] - at[i];   
 totaltat += tat[i];  
  
 wt[i] = tat[i] - bt[i];   
 totalwt += wt[i];  
 }  
  
 printf("P\tAT\tBT\tCT\tTAT\tWT\n");  
 for (int i = 0; i < n; i++) {  
 printf("%d\t%d\t%d\t%d\t%d\t%d\n", p[i], at[i], bt[i], ct[i], tat[i], wt[i]);  
 }  
  
 printf("Average waiting time: %.1f\n", (float)(totalwt) / n);  
 printf("Average turnaround time: %.1f\n", (float)(totaltat) / n);  
  
 return 0;  
}

**OUTPUT:**

