FCJS SCHEDULING

```java
import java.util.Scanner;

public class FCFSScheduling {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the number of processes: ");
        int n = sc.nextInt();

        int[] id = new int[20];
        int[] at = new int[20];
        int[] bt = new int[20];
        int[] ct = new int[20];
        int[] tat = new int[20];
        int[] wt = new int[20];

        double avg_tat = 0, avg_wt = 0;

        System.out.println("Enter Arrival Time for " + n + " processes:");
        for (int i = 0; i < n; i++) {
            System.out.print("P" + (i + 1) + ": ");
            at[i] = sc.nextInt();
            id[i] = i + 1;
        }

        System.out.println("Enter Burst Time for " + n + " processes:");
        for (int i = 0; i < n; i++) {
            System.out.print("P" + (i + 1) + ": ");
            bt[i] = sc.nextInt();
        }
```

```
// FCFS: sort by Arrival Time (keeping IDs and BT together)
for (int i = 0; i < n - 1; i++) {
    for (int j = i + 1; j < n; j++) {
        if (at[i] > at[j]) {
            // swap AT
            int temp = at[i];
            at[i] = at[j];
            at[j] = temp;

            // swap BT
            temp = bt[i];
            bt[i] = bt[j];
            bt[j] = temp;

            // swap ID
            temp = id[i];
            id[i] = id[j];
            id[j] = temp;
        }
    }
}


// Completion Times
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];
}
```

```java
        // Calculate TAT, WT, and averages
        for (int i = 0; i < n; i++) {
            tat[i] = ct[i] - at[i];
            wt[i] = tat[i] - bt[i];
            avg_tat += tat[i];
            avg_wt += wt[i];
        }

        // Display results
        System.out.println("\n=========================================");
        System.out.println("Process\tAT\tBT\tCT\tTAT\tWT");
        System.out.println("=========================================");

        for (int i = 0; i < n; i++) {
            System.out.println("P" + id[i] + "\t" + at[i] + "\t" + bt[i] + "\t" + ct[i] + "\t" + tat[i] + "\t" + wt[i]);
        }

        System.out.println("=========================================");
        System.out.printf("Average Turnaround Time: %.2f\n", (avg_tat / n));
        System.out.printf("Average Waiting Time:    %.2f\n", (avg_wt / n));

        sc.close();
    }
}
```