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// C program to implement Shortest Remaining Time First
// Shortest Remaining Time First (SRTF)

#include <stdio.h>
#include <limits.h>

struct Process {
    int pid; // Process ID
    int bt; // Burst Time
    int art; // Arrival Time
};

// Function to find the waiting time for all
// processes
void findWaitingTime(struct Process proc[], int n, int wt[]) {
    int rt[n];

    // Copy the burst time into rt[]
    for (int i = 0; i < n; i++)
        rt[i] = proc[i].bt;

    int complete = 0, t = 0, minm = INT_MAX;
    int shortest = 0, finish_time;
    int check = 0; // changed boolean to integer

    // Process until all processes gets
    // completed
    while (complete != n) {

        // Find process with minimum
        // remaining time among the
        // processes that arrives till the
        // current time
        for (int j = 0; j < n; j++) {
            if ((proc[j].art <= t) &&
                (rt[j] < minm) && rt[j] > 0) {
                minm = rt[j];
                shortest = j;
                check = 1; // changed boolean to integer
            }
        }

        if (check == 0) {
            t++;
            continue;
        }

        // Reduce remaining time by one
        rt[shortest]--;

        // Update minimum
        minm = rt[shortest];
    }
}

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    if (minm == 0)
        minm = INT_MAX;

    // If a process gets completely
    // executed
    if (rt[shortest] == 0) {

        // Increment complete
        complete++;
        check = 0; // changed boolean to integer

        // Find finish time of current
        // process
        finish_time = t + 1;

        // Calculate waiting time
        wt[shortest] = finish_time -
            proc[shortest].bt -
            proc[shortest].art;

        if (wt[shortest] < 0)
            wt[shortest] = 0;
    }
    // Increment time
    t++;
}

// Function to calculate turn around time
void findTurnAroundTime(struct Process proc[], int n, int wt[], int tat[]) {
    // calculating turnaround time by adding
    // bt[i] + wt[i]
    for (int i = 0; i < n; i++)
        tat[i] = proc[i].bt + wt[i];
}

// Function to calculate average time
void findavgTime(struct Process proc[], int n) {
    int wt[n], tat[n], total_wt = 0,
        total_tat = 0;

    // Function to find waiting time of all
    // processes
    findWaitingTime(proc, n, wt);

    // Function to find turn around time for
    // all processes
    findTurnAroundTime(proc, n, wt, tat);

    // Display processes along with all
    // details
    printf(" P\t\t"

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"BT\t\t"
"WT\t\t"
"TAT\t\t\n");
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// Calculate total waiting time and
// total turnaround time
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for (int i = 0; i < n; i++) {
    total_wt = total_wt + wt[i];
    total_tat = total_tat + tat[i];
    printf(" %d\t\t"
           "%d\t\t %d"
           "\t\t %d\n", proc[i].pid,
           proc[i].bt, wt[i], tat[i]);
}
```

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printf("\nAverage waiting time = "
       "%f", (float)total_wt / (float)n);
printf("\nAverage turn around time = "
       "%f", (float)total_tat / (float)n);
}
```

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// Driver code
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int main() {
    struct Process proc[] = { { 1, 6, 2 }, { 2, 2, 5 },
                              { 3, 8, 1 }, { 4, 3, 0 }, { 5, 4, 4 } };
    int n = sizeof(proc) / sizeof(proc[0]);

    findavgTime(proc, n);
    return 0;
}
```