PREEMPTIVE PRIORITY SCHEDULING

```
#include <stdio.h>

void preemptivePriority(int n, int bt[], int pr[]) {
    int wt[n], tat[n], ct[n], rem_bt[n];
    int t = 0, completed = 0;

    for (int i = 0; i < n; i++)
        rem_bt[i] = bt[i];

    while (completed < n) {
        int min_pr = 9999, min_index = -1;

        for (int i = 0; i < n; i++) {
            if (rem_bt[i] > 0 && pr[i] < min_pr) {
                min_pr = pr[i];
                min_index = i;
            }
        }

        if (min_index == -1) break; // No available process

        rem_bt[min_index]--;
        t++;

        if (rem_bt[min_index] == 0) {
            completed++;
            ct[min_index] = t;
            tat[min_index] = ct[min_index];
            wt[min_index] = tat[min_index] - bt[min_index];
        }
    }

    int total_wt = 0, total_tat = 0;
    printf("\nPID\tBurst Time\tPriority\tCompletion Time\tWaiting Time\tTurnaround
Time\n");

    for (int i = 0; i < n; i++) {
```

```
        total_wt += wt[i];
        total_tat += tat[i];
        printf("%d\t%d\t\t%d\t\t%d\t\t%d\t\t%d\n",
               i + 1, bt[i], pr[i], ct[i], wt[i], tat[i]);
    }

    printf("\nAvg Waiting Time: %.2f\n", (float)total_wt / n);
    printf("Avg Turnaround Time: %.2f\n", (float)total_tat / n);
}

int main() {
    int n;
    printf("Enter number of processes: ");
    scanf("%d", &n);
    int bt[n], pr[n];
     for (int i = 0; i < n; i++) {
        printf("Enter burst time and priority for process %d: ", i + 1);
        scanf("%d %d", &bt[i], &pr[i]);
    }
    preemptivePriority(n, bt, pr);
    return 0;
}
```

Output:

```
Enter number of processes: 4
Enter burst time and priority for process 1: 1 3
Enter burst time and priority for process 2: 3 2
Enter burst time and priority for process 3: 7 1
Enter burst time and priority for process 4: 5 4
PID  Burst Time  Priority  Completion Time  Waiting Time  Turnaround Time
1       1             3             11            10            11
2       3             2             10            7             10
3       7             1             7             0             7
4       5             4             16            11            16

Avg Waiting Time: 7.00
Avg Turnaround Time: 11.00
```