Write a C program to simulate the following CPU scheduling algorithm to find turnaround time and waiting time.

a) FCFS

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#include <stdio.h>
#include <stdlib.h>


int arr[5];
int bt[5];
int wt[5];
int ct[5];
int tat[5];
int pid[5];
int totalwt = 0;
int totaltat = 0;
int time = 0;
int i = 0;


void main() {
   printf("Enter the Arrival times for 5 processes:\n");
   for (i = 0; i < 5; i++) {
      pid[i] = i + 1;
      printf("Process %d Arrival Time: ", i + 1);
      scanf("%d", &arr[i]);
   }


   printf("Enter the Burst times for 5 processes:\n");
   for (i = 0; i < 5; i++) {
      printf("Process %d Burst Time: ", i + 1);
      scanf("%d", &bt[i]);
   }


   for (i = 0; i < 5; i++) {
      wt[i] = 0;
      tat[i] = 0;
   }


   for (i = 0; i < 5 - 1; i++) {
```

```
    for (int j = i + 1; j < 5; j++) {
        if (arr[i] > arr[j]) {

            int temp_arr = arr[i];
            arr[i] = arr[j];
            arr[j] = temp_arr;



            int temp_bt = bt[i];
            bt[i] = bt[j];
            bt[j] = temp_bt;



            int temp_pid = pid[i];
            pid[i] = pid[j];
            pid[j] = temp_pid;
        }
    }
}


for (i = 0; i < 5; i++) {
    if (i == 0) {
        time = arr[i] + bt[i];
        ct[i]=time;
        tat[i] = bt[i];
        wt[i] = 0;
    } else {
        if (arr[i] > time) {
            time = arr[i] + bt[i];
            ct[i]=time;
            tat[i] = bt[i];
            wt[i] = 0;
        } else {
            tat[i] = time - arr[i] + bt[i];
            wt[i] = time - arr[i];
            time = time + bt[i];
            ct[i]=time;
        }
    }
    totalwt += wt[i];
    totaltat += tat[i];
```

```
    }


    printf("\nProcess ID  |  Arrival Time  |  Burst Time  | Completion Time  |  Waiting Time  |
Turnaround Time\n");
    for (i = 0; i < 5; i++) {
        printf("    %d      |      %d       |      %d      |      %d       |      %d       |       %d\n",
                pid[i], arr[i], bt[i],ct[i], wt[i], tat[i]);
    }


    printf("\nTotal Waiting Time: %d\n", totalwt);
    printf("Total Turnaround Time: %d\n", totaltat);
    printf("Average Waiting Time: %.2f\n", (float)totalwt / 5);
    printf("Average Turnaround Time: %.2f\n", (float)totaltat / 5);
}
```

Output :