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#include<stdio.h>

struct process

{   int no, at, bt, st, ct, tt, wt;}p[10];

int main()

{   int n, i, j, wt[10], tat[10], t1, t2;

    int avgwt=0, avgtt=0;


    printf("Enter no. of processes : ");

    scanf("%d", &n);

    printf("Enter Arrival Time and Burst Time for each process : \n");

    for(i=0; i<n; i++)

    {   p[i].no = i+1;

        printf("P%d: ", i+1);

        scanf("%d", &p[i].at);

        scanf("%d", &p[i].bt);  }


    for(i=0; i<=n-2; i++)

    {   for(j=i+1; j<=n-1; j++)

        {   if(p[i].at>p[j].at)

            {   struct process temp = p[i];

                p[i]=p[j];

                p[j]=temp; }          } }


    for(i=0; i<n; i++)

    {   if(i==0 || p[i].at>p[i-1].ct)

        {   p[i].ct = p[i].at + p[i].bt;

            p[i].st=p[i].at;   }

        else

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        { p[i].ct = p[i-1].ct + p[i].bt;
          p[i].st = p[i-1].ct;  }
        p[i].tt = p[i].ct - p[i].at;
        p[i].wt = p[i].tt - p[i].bt;

        avgwt+=p[i].wt;
        avgtt+=p[i].tt;      }

avgwt/=n;
avgtt/=n;

printf("\nProcess\tArrival Time\tBurst Time\tCompletion
Time\tTurnaround Time\tWaiting Time\n");

for(i=0; i<n; i++)

{ printf("%d\t%d\t%d\t%d\t%d\t%d\t%d\n",
p[i].no,p[i].at,p[i].bt,p[i].ct,p[i].tt,p[i].wt);  }

printf("\nAverage Waiting Time : %d\n", avgwt);
printf("\nAverage Turnaround Time : %d\n", avgtt);

printf("GANTT CHART");
printf("\n-----\n");
for(i=0; i<n; i++)
{ printf("| P%d\t", p[i].no);  }
printf("| \n");
printf("%d\t", p[0].at);
for(i=0;i<n;i++)
{ printf("%d\t", p[i].ct);  }
printf("\n-----\n");  }

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