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#include<stdio.h>

void main()

{  int p[20],wt[20],bt[20],tt[20],n,temp;

    float wtavg = 0;

    float ttavg = 0;


    printf("Enter the number of processes: ");

    scanf("%d",&n);

    printf("Enter the burst time of each process: \n");

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

    {  p[i] = i+1;

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

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


    for(int i=1;i<n;i++)

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

        {  if(bt[j]>bt[j+1])

            {  temp = p[j];

                p[j] = p[j+1];

                p[j+1] = temp;

                temp = bt[j];

                bt[j] = bt[j+1];

                bt[j+1]=temp;  }  }  }


    wt[0]=0;

    for(int i=1;i<n;i++)

    {  wt[i] = bt[i-1]+wt[i-1];

        wtavg+=wt[i];    }

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wtavg/=n;

for(int i=0;i<n;i++)
{   tt[i] = wt[i]+bt[i];
    ttavg+=tt[i];    }

ttavg/=n;


printf("\nProcess\t\tBurst time\t\tWaiting time\t\tTurnaround Time\n");
for(int i=0;i<n;i++)
{   printf("P%d\t\t%d\t\t%d\t\t%d\n",p[i],bt[i],wt[i],tt[i]);}

    printf("\nAverage Waiting time: %f",wtavg);

    printf("\nAverage Turn around time: %f\n",ttavg);

    printf("\nGantt chart\n\n");

    printf("\n.....\n");

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

    {   printf("|tP%d\t|",p[i]);  }

    printf("\n.....\n");

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

    {   printf("%d\t\t",wt[i]);    }

    printf("%d",tt[n-1]);

    printf("\n.....\n");  }

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