#include<stdio.h>

typedef struct schedule

{

int pid,arr,wait,burst,tat,tid;

}schedule;

schedule s[10],p[10];

int n;

void main()

{

int i,j,wt=0;

float x=0,y=0,avgwait,avgtat;

printf("\nenter no of process:");

scanf("%d",&n);

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

{

s[i].pid=i;

s[i].tid=i;

s[i].arr=0;

printf("\nenter the bursting for process P[%d]:",i);

scanf("%d",&s[i].burst);

}

for(i=0;i<n-1;i++)

{

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

{

if(s[i].burst>s[j].burst)

{

p[i]=s[i];

s[i]=s[j];

s[j]=p[i];

}

}

}

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

{

if(i!=0)

{

wt=wt+s[i-1].burst;

s[i].wait=wt;

}

else

s[i].wait=0;

}

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

{

s[i].tat=s[i].burst+s[i].wait;

}

printf("\n------------------------------------------------------\n");

printf("\nthe GANTT chart is\n");

printf(" 0 ");

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

{

printf("\tp%d",s[i].pid);

printf("\t%d",s[i].tat);

}

for(i=0;i<n-1;i++)

{

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

{

if(s[i].pid>s[j].pid)

{

p[i]=s[i];

s[i]=s[j];

s[j]=p[i];

}

}

}

printf("\n\n----------------------------------------------------\n");

printf("\nthe table is:\n");

printf("\nprocess B.T W.T TAT \n");

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

{

printf("\n%d",s[i].pid);

printf("\t %d",s[i].burst);

printf("\t%d",s[i].wait);

printf("\t%d",s[i].tat);

x=x+s[i].tat;

y=y+s[i].wait;

}

avgwait=y/n;

avgtat=x/n;

printf("\naverage waiting time=%f\n",avgwait);

printf("\naverage tat=%f\n",avgtat);

}