East Delta University

Course: Operating System Lab

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Lab Performance 2 : SJF

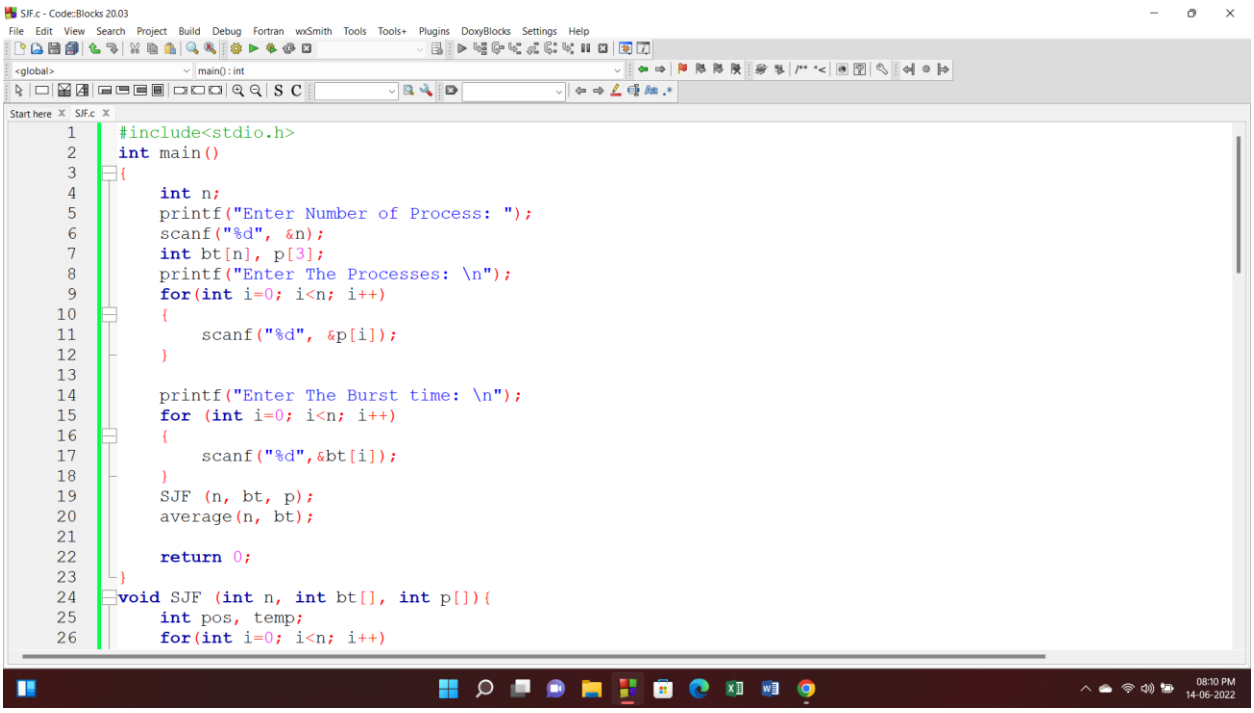
```
#include<stdio.h>
int main()
{
   int n;
   printf("Enter Number of Process: ");
   scanf("%d", &n);
   int bt[n], p[3];
   printf("Enter The Processes: \n");
   for(int i=0; i<n; i++)
   {
      scanf("%d", &p[i]);
   }
   printf("Enter The Burst time: \n");
   for (int i=0; i<n; i++)
   {
      scanf("%d",&bt[i]);
   }
   SJF (n, bt, p);
   average(n, bt);
   return 0;
```

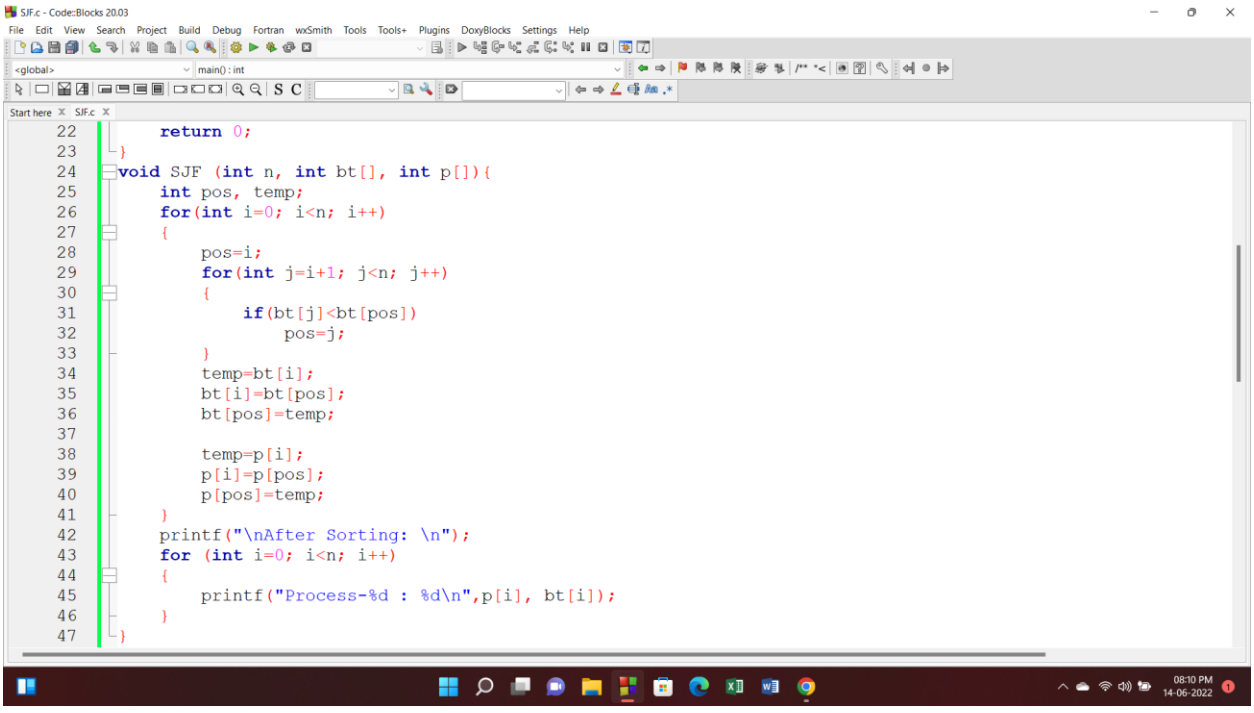
```
}
void SJF (int n, int bt[], int p[]){
   int pos, temp;
   for(int i=0; i<n; i++)
   {
      pos=i;
      for(int j=i+1; j<n; j++)
      {
         if(bt[j]<bt[pos])
            pos=j;
      }
      temp=bt[i];
      bt[i]=bt[pos];
      bt[pos]=temp;

      temp=p[i];
      p[i]=p[pos];
      p[pos]=temp;
   }
   printf("\nAfter Sorting: \n");
   for (int i=0; i<n; i++)
   {
      printf("Process-%d : %d\n",p[i], bt[i]);
   }
}
int average(int n,int bt[])
```

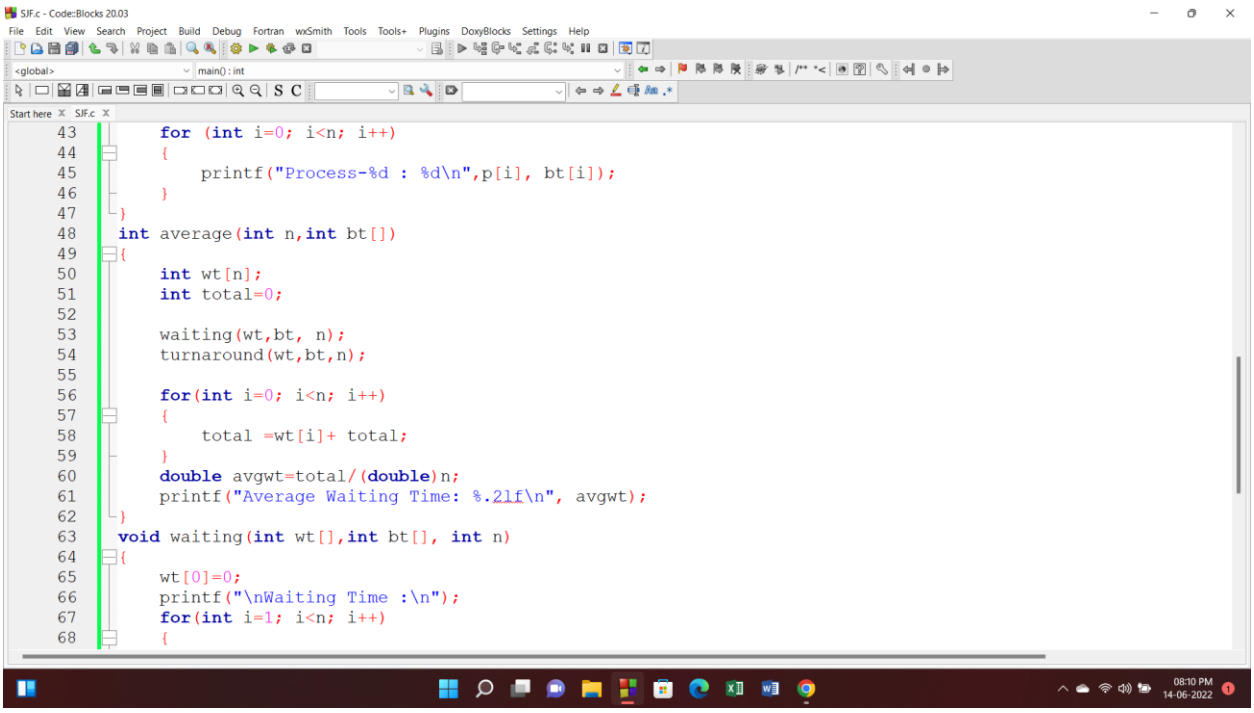
```
{
   int wt[n];
   int total=0;

   waiting(wt,bt, n);
   turnaround(wt,bt,n);
   for(int i=0; i<n; i++)
   {
      total =wt[i]+ total;
   }
   double avgwt=total/(double)n;
   printf("Average Waiting Time: %.2lf\n", avgwt);
}
void waiting(int wt[],int bt[], int n)
{
   wt[0]=0;
   printf("\nWaiting Time :\n");
   for(int i=1; i<n; i++)
   {
      wt[i]=bt[i-1]+ wt[i-1];
   }
   for(int i=0; i<n; i++)
   {
      printf("\t%d\n",wt[i]);
   }
}
```

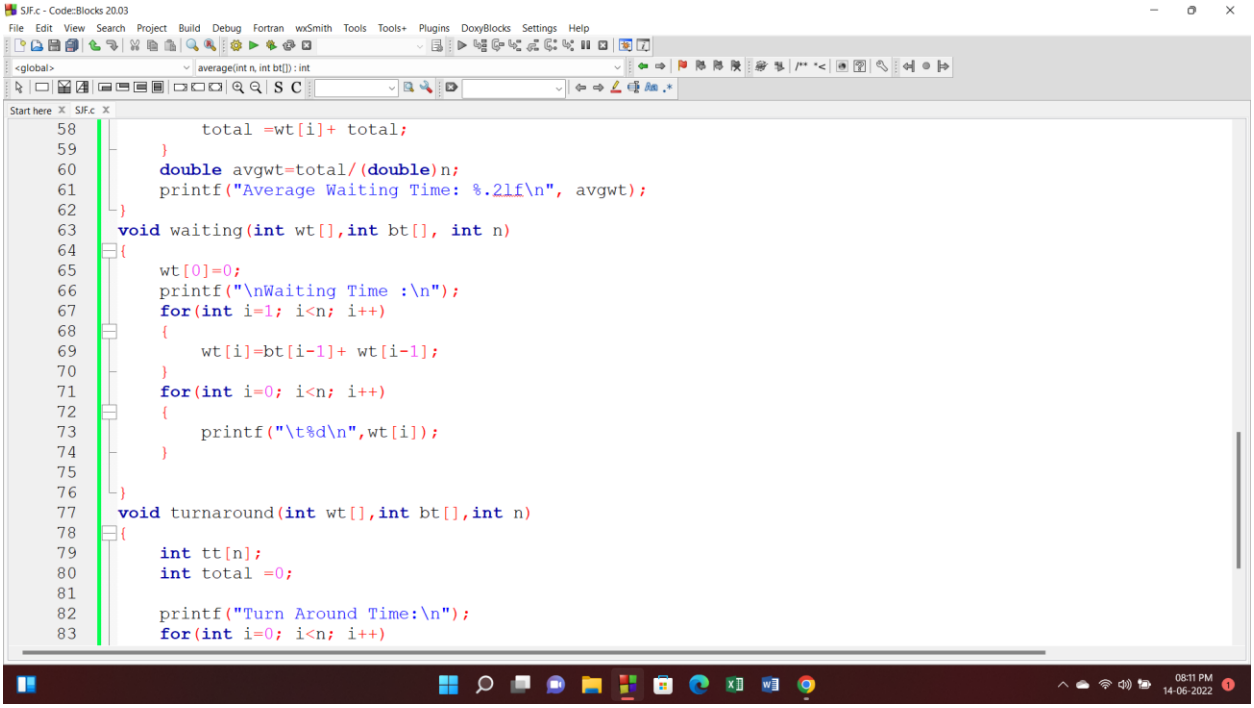
```
void turnaround(int wt[],int bt[],int n)
{
   int tt[n];
   int total =0;
   printf("Turn Around Time:\n");
   for(int i=0; i<n; i++)
   {
      tt[i]=wt[i]+bt[i];
      printf("\t%d\n",tt[i]);
   }
   for(int i=0; i<n; i++)
   {
      total=tt[i]+total;
   }
   double avgtt = total/(double)n;
   printf("\nAverage Turn around Time: %.2lf\n",avgtt);
}
```

IDE Screenshot:


SJF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
main() : int
Start here
SJF.c
#include<stdio.h>
int main()
{
int n;
printf("Enter Number of Process: ");
scanf("%d", &n);
int bt[n], p[3];
printf("Enter The Processes: \n");
for(int i=0; i<n; i++)
{
scanf("%d", &p[i]);
}
printf("Enter The Burst time: \n");
for (int i=0; i<n; i++)
{
scanf("%d",&bt[i]);
}
SJF (n, bt, p);
average(n, bt);
return 0;
}
void SJF (int n, int bt[], int p[]){
int pos, temp;
for(int i=0; i<n; i++)
08:10 PM
14-06-2022


SJF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
main() : int
Start here
SJF.c
return 0;
}
void SJF (int n, int bt[], int p[]){
int pos, temp;
for(int i=0; i<n; i++)
{
pos=i;
for(int j=i+1; j<n; j++)
{
if(bt[j]<bt[pos])
pos=j;
}
temp=bt[i];
bt[i]=bt[pos];
bt[pos]=temp;
temp=p[i];
p[i]=p[pos];
p[pos]=temp;
}
printf("\nAfter Sorting: \n");
for (int i=0; i<n; i++)
{
printf("Process-%d : %d\n",p[i], bt[i]);
}
}
08:10 PM
14-06-2022


SJF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
main() : int
Start here
SJF.c
for (int i=0; i<n; i++)
{
printf("Process-%d : %d\n",p[i], bt[i]);
}
}
int average(int n,int bt[])
{
int wt[n];
int total=0;
waiting(wt,bt, n);
turnaround(wt,bt,n);
for(int i=0; i<n; i++)
{
total =wt[i]+ total;
}
double avgwt=total/(double)n;
printf("Average Waiting Time: %.2lf\n", avgwt);
}
void waiting(int wt[],int bt[], int n)
{
wt[0]=0;
printf("\nWaiting Time :\n");
for(int i=1; i<n; i++)
{
08:10 PM
14-06-2022


SJF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
<global>
average(int n, int bt[]) : int
Start here
SJF.c
total =wt[i]+ total;
}
double avgwt=total/(double)n;
printf("Average Waiting Time: %.2lf\n", avgwt);
}
void waiting(int wt[],int bt[], int n)
{
wt[0]=0;
printf("\nWaiting Time :\n");
for(int i=1; i<n; i++)
{
wt[i]=bt[i-1]+ wt[i-1];
}
for(int i=0; i<n; i++)
{
printf("\t%d\n",wt[i]);
}
}
void turnaround(int wt[],int bt[],int n)
{
int tt[n];
int total =0;
printf("Turn Around Time:\n");
for(int i=0; i<n; i++)
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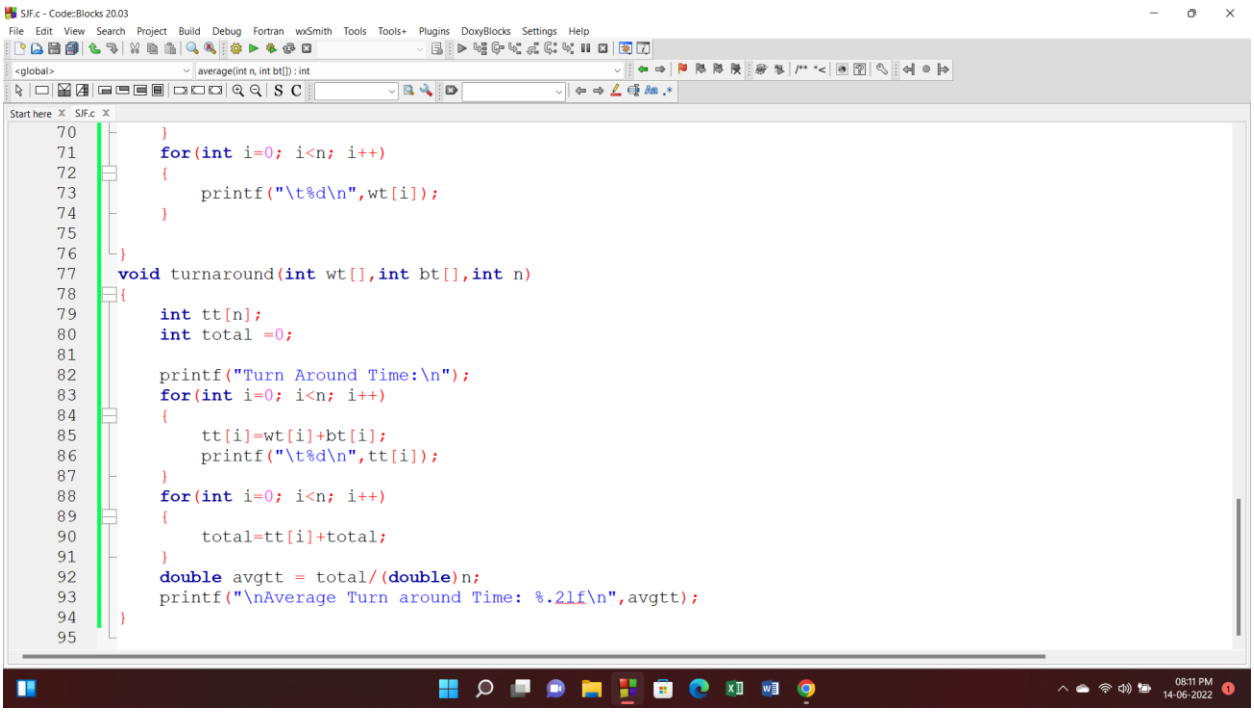
SJF.c - Code::Blocks 20.03
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
Start here
SJF.c
}
for(int i=0; i<n; i++)
{
printf("\t%d\n",wt[i]);
}
}
void turnaround(int wt[],int bt[],int n)
{
int tt[n];
int total =0;
printf("Turn Around Time:\n");
for(int i=0; i<n; i++)
{
tt[i]=wt[i]+bt[i];
printf("\t%d\n",tt[i]);
}
for(int i=0; i<n; i++)
{
total=tt[i]+total;
}
double avgtt = total/(double)n;
printf("\nAverage Turn around Time: %.2lf\n",avgtt);
}
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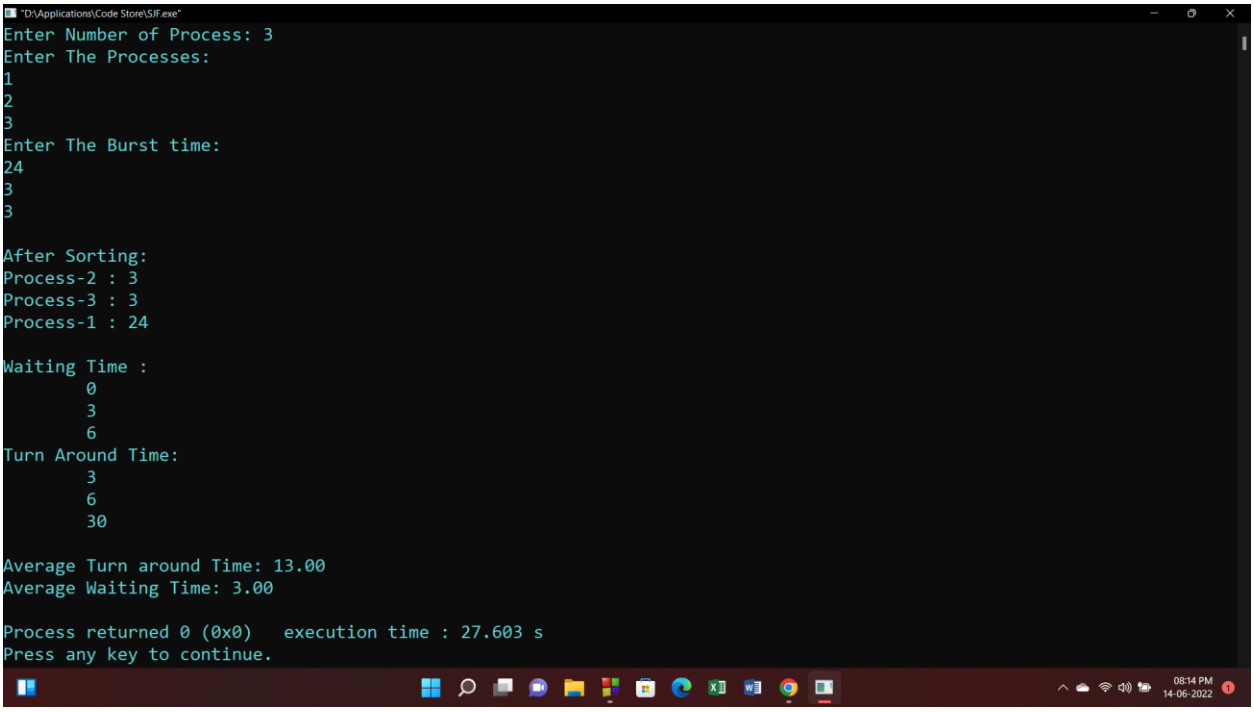
Output:


"D:\Applications\Code Store\SJF.exe"
Enter Number of Process: 3
Enter The Processes:
1
2
3
Enter The Burst time:
24
3
3
After Sorting:
Process-2 : 3
Process-3 : 3
Process-1 : 24
Waiting Time :
0
3
6
Turn Around Time:
3
6
30
Average Turn around Time: 13.00
Average Waiting Time: 3.00
Process returned 0 (0x0) execution time : 27.603 s
Press any key to continue.
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14-06-2022