4)

Process Queue	Burst Time	Arrival Time
P_1	6	2
P_2	2	5
P_3	8	1
P_4	3	0
P_5	4	4

Arrival Time = 0 $\Rightarrow t = 0$

Burst Time = 3 $\Rightarrow$ B.T = 3

$t = 0$

$t = 1 - 8$

$t = 2 - 7$

$t = 3 - 0$

$t = 4 - 11$

$t = 5 - 2$

$t = 6 - 0$

$t = 7 - 0$

$t = 8 - 0$

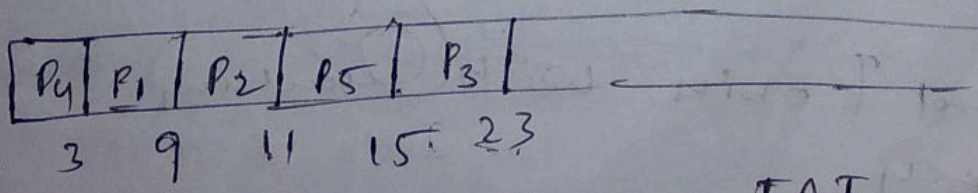
$t = 9 - 0$

$t = 10 - 0$

$t = 11 - 0$

$t = 12 - 0$

$t = 13 - 0$



14
7
2
1

$P_1 = 9 - 2 = 7$

$P_2 = 11 - 5 = 6$

$P_3 = 23 - 1 = 22$

$P_4 = 3 - 0 = 3$

$P_5 = 15 - 4 = 11$

T.A.T

W.T = ~~T.A.T~~ - B.T.

$= 7 - 6 + 6 - 2 + 22 - 8 + 3 - 3 + (14 - 11)$

$= \frac{1 + 4 + 14 + 7}{5}$

$= \frac{26}{5} = \frac{26}{5} = 5.2$

1) Consider the following process with Given Burst time.

Processes	Burst Time	Priority
A	25	3
B	12	1
C	6	4
D	18	2

Apply following algorithms and find Completion Time (CT), Turn Around Time (TAT), Waiting Time (WT) and Response Time (RT)

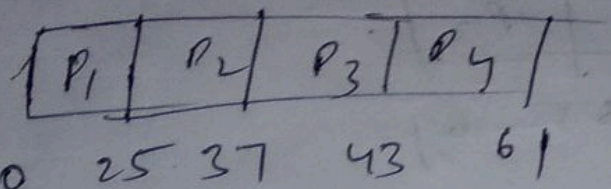
a) FCFS [First Come First Serve]

b) Shortest Job First

c) Round Robin with Quantum time 4

d) Priority Scheduling.

a) FCFS

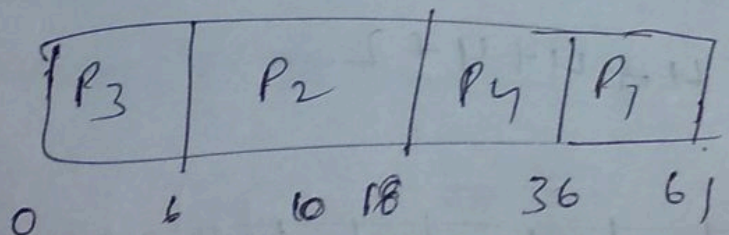


$$\text{Average Time} = \frac{0+25+37+43}{4}$$

$$= \frac{104}{4}$$

$$= 26.25$$

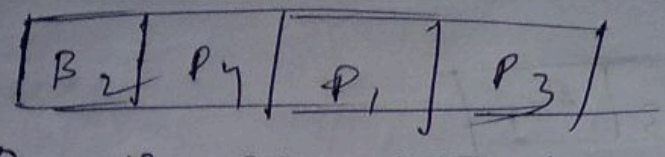
b) SJS



$$= \frac{0+6+18+36}{4}$$

$$= 15$$

c) Priority Scheduling;



$= 24.25$

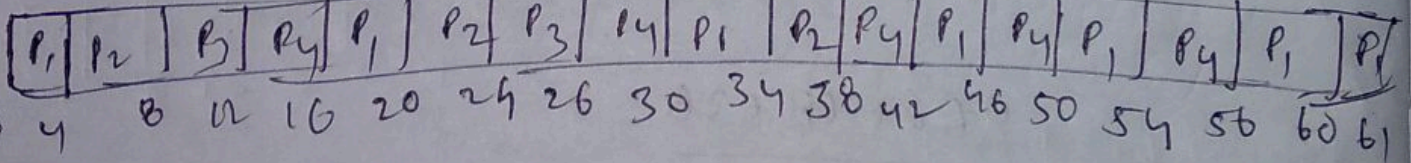
d) Round Robin Scheduling

25 — 4+4+4+4+4+4+1

12 — 4+4+4

6 — 4+2

18 = 4+4+4+4+2.



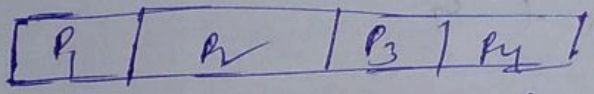
$$= \frac{60+38+26+56}{4}$$

$= 45$

2)

Process	Burst Time	Arrival Time	Priority
A	25	2	3
B	12	12	1
C	6	18	4
D	18	21	2

1) FCFS

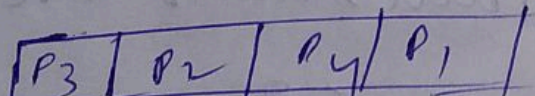


0 25 37 43 61

$$\text{Average Time} = \frac{0+25+37+43}{4}$$

$$= 26.25$$

2) SJF

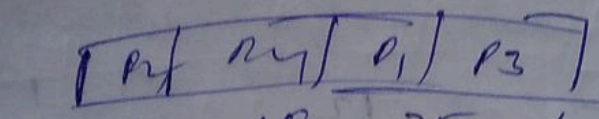


0 6 18 36 61

$$= \frac{0+6+18+36}{4}$$

$$= 15$$

3) Priority Scheduling



= 13.75

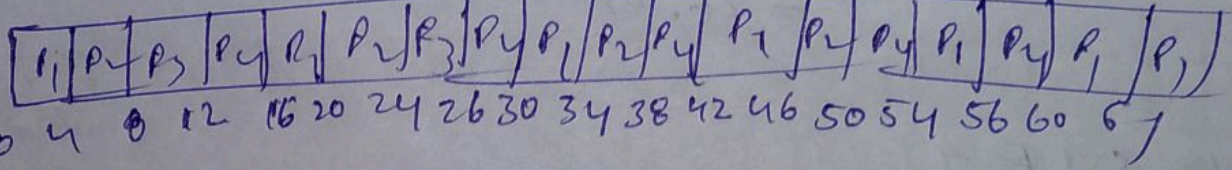
4) Round robin with Quantum time 4

25 = 4+4+4+4+4+4+1

12 = 4+4+4

6 = 4+2

18 = 4+4+4+4+2



Exit Time	Turn-Around Time
61	61-2 = 59
50	50-12 = 38
26	26-18 = 8
54	18-21 = 3

waiting Time

$29 - 25 = 34$

$38 - 12 = 26$

$8 - 6 = 2$

$3 - 18 = 15$

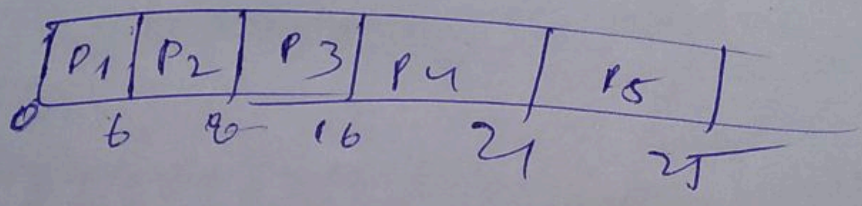
$$= \frac{34 + 26 + 2 + 15}{4}$$

Average waiting Time = $77/4$

$= 19.25$

---

5) FCFS

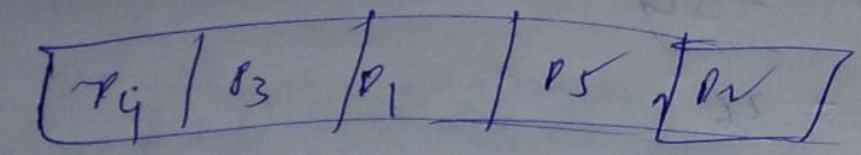


$$= \frac{0 + 6 + 8 + 16 + 21}{5}$$

$= 51/5$

A.W.T = 10.2

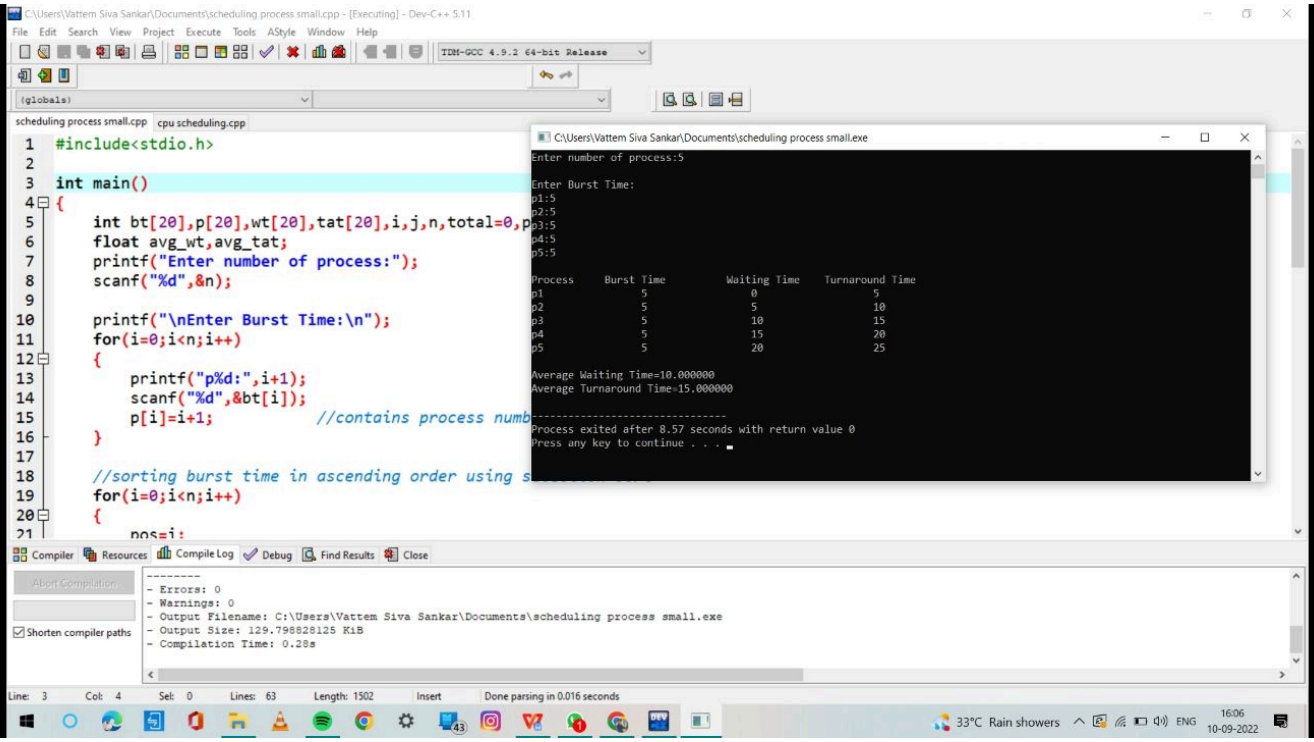
SJS

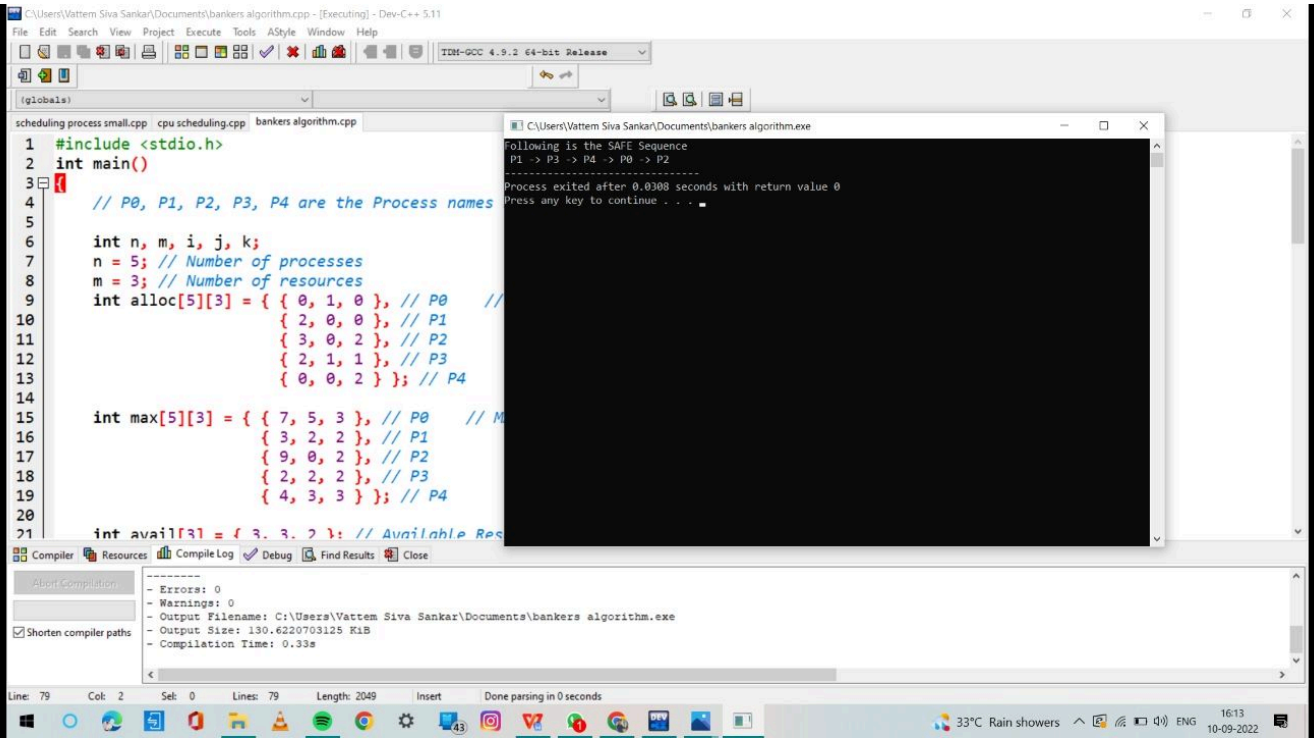


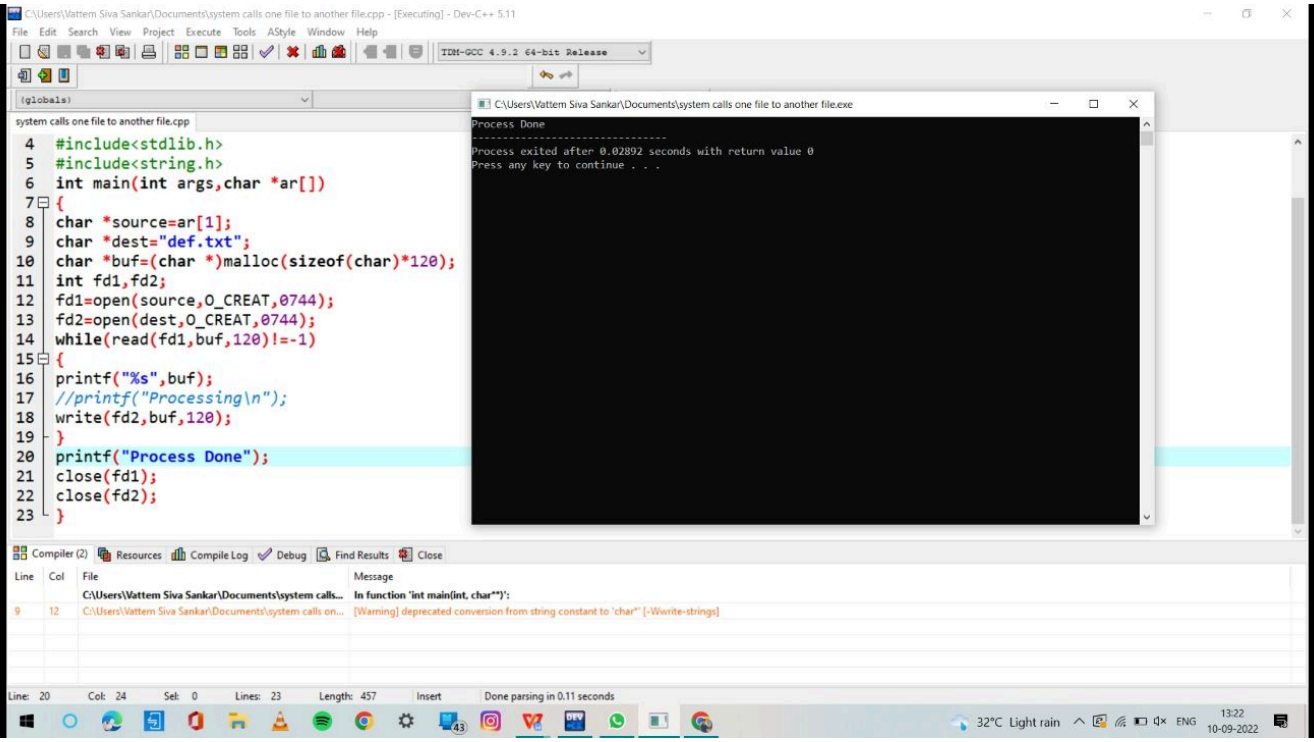
$$= \frac{0+3+11+17+21}{5}$$

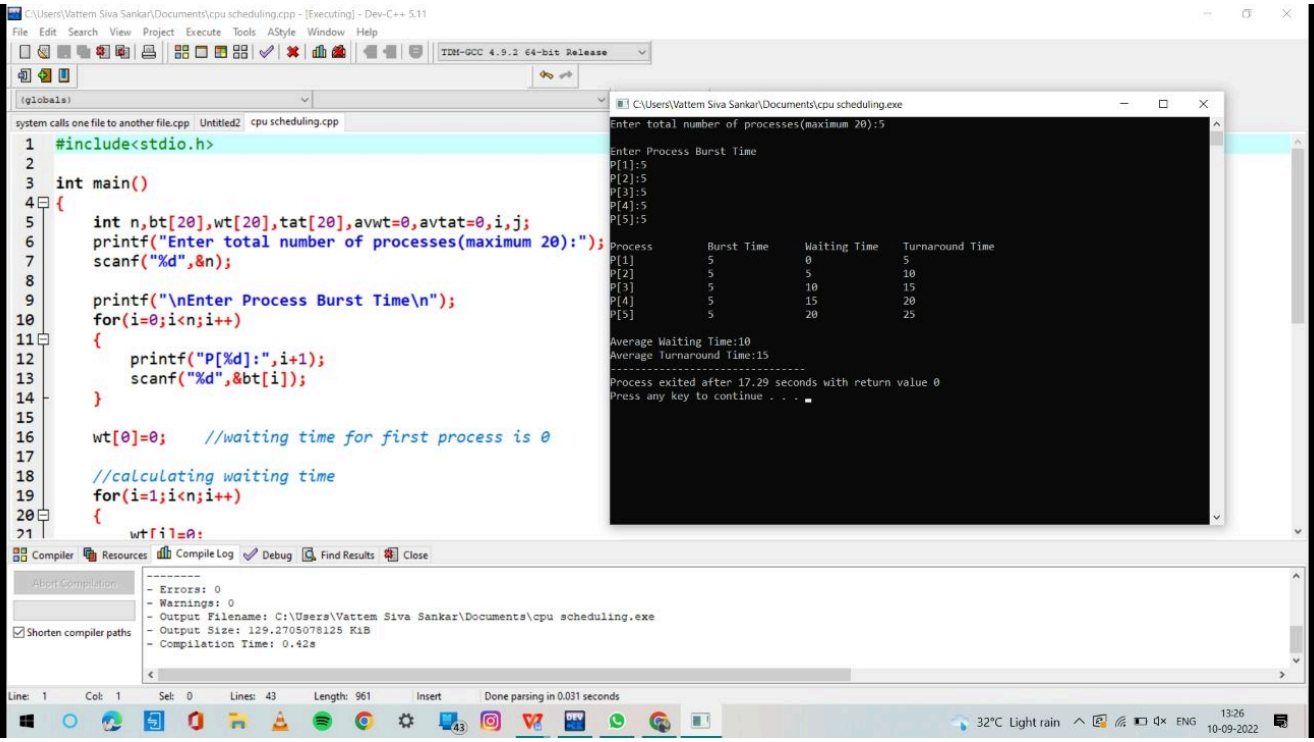
$$= 52/5$$

$$\boxed{\text{AWT} = 10.4}$$


C:\Users\Vattem Siva Sankar\Documents\scheduling process small.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
scheduling process small.cpp
cpu scheduling.cpp
#include<stdio.h>
int main()
{
int bt[20],p[20],wt[20],tat[20],i,j,n,total=0,p
float avg_wt,avg_tat;
printf("Enter number of process:");
scanf("%d",&n);
printf("\nEnter Burst Time:\n");
for(i=0;i<n;i++)
{
printf("p%d:",i+1);
scanf("%d",&bt[i]);
p[i]=i+1;
//contains process numb
}
//sorting burst time in ascending order using s
for(i=0;i<n;i++)
{
pos=i;
C:\Users\Vattem Siva Sankar\Documents\scheduling process small.exe
Enter number of process:5
Enter Burst Time:
p1:5
p2:5
p3:5
p4:5
p5:5
Process Burst Time Waiting Time Turnaround Time
p1 5 0 5
p2 5 5 10
p3 5 10 15
p4 5 15 20
p5 5 20 25
Average Waiting Time=10.000000
Average Turnaround Time=15.000000
Process exited after 8.57 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Vattem Siva Sankar\Documents\scheduling process small.exe
- Output Size: 129.798828125 KiB
- Compilation Time: 0.28s
Line: 3 Col: 4 Sel: 0 Lines: 63 Length: 1502 Insert Done parsing in 0.016 seconds
33°C Rain showers
ENG
16:06
10-09-2022


C:\Users\Vattem Siva Sankar\Documents\bankers algorithm.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
scheduling process small.cpp
cpu scheduling.cpp
bankers algorithm.cpp
#include <stdio.h>
int main()
{
// P0, P1, P2, P3, P4 are the Process names
int n, m, i, j, k;
n = 5; // Number of processes
m = 3; // Number of resources
int alloc[5][3] = { { 0, 1, 0 }, // P0 //
{ 2, 0, 0 }, // P1
{ 3, 0, 2 }, // P2
{ 2, 1, 1 }, // P3
{ 0, 0, 2 } }; // P4
int max[5][3] = { { 7, 5, 3 }, // P0 // M
{ 3, 2, 2 }, // P1
{ 9, 0, 2 }, // P2
{ 2, 2, 2 }, // P3
{ 4, 3, 3 } }; // P4
int avail[3] = { 3, 3, 2 }; // Available Res
C:\Users\Vattem Siva Sankar\Documents\bankers algorithm.exe
Following is the SAFE Sequence
P1 -> P3 -> P4 -> P0 -> P2
Process exited after 0.0308 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Vattem Siva Sankar\Documents\bankers algorithm.exe
- Output Size: 130.6220703125 KiB
- Compilation Time: 0.33s
Line: 79 Col: 2 Sel: 0 Lines: 79 Length: 2049 Insert Done parsing in 0 seconds
33°C Rain showers
ENG
16:13
10-09-2022


C:\Users\Vattem Siva Sankar\Documents\system calls one file to another file.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
system calls one file to another file.cpp
#include<stdlib.h>
#include<string.h>
int main(int args,char *ar[])
{
char *source=ar[1];
char *dest="def.txt";
char *buf=(char *)malloc(sizeof(char)*120);
int fd1,fd2;
fd1=open(source,O_CREAT,0744);
fd2=open(dest,O_CREAT,0744);
while(read(fd1,buf,120)!=-1)
{
printf("%s",buf);
//printf("Processing\n");
write(fd2,buf,120);
}
printf("Process Done");
close(fd1);
close(fd2);
}
C:\Users\Vattem Siva Sankar\Documents\system calls one file to another file.exe
Process Done
Process exited after 0.02892 seconds with return value 0
Press any key to continue . . .
Compiler (2) Resources Compile Log Debug Find Results Close
Line Col File Message
C:\Users\Vattem Siva Sankar\Documents\system calls... In function 'int main(int, char**)':
9 12 C:\Users\Vattem Siva Sankar\Documents\system calls on... [Warning] deprecated conversion from string constant to 'char*' [-Wwrite-strings]
Line: 20 Col: 24 Sel: 0 Lines: 23 Length: 457 Insert Done parsing in 0.11 seconds
32°C Light rain
ENG
13:22
10-09-2022


C:\Users\Vattem Siva Sankar\Documents\cpu scheduling.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
system calls one file to another file.cpp
Untitled2
cpu scheduling.cpp
#include<stdio.h>
int main()
{
int n,bt[20],wt[20],tat[20],avwt=0,avtat=0,i,j;
printf("Enter total number of processes(maximum 20):");
scanf("%d",&n);
printf("\nEnter Process Burst Time\n");
for(i=0;i<n;i++)
{
printf("P[%d]:",i+1);
scanf("%d",&bt[i]);
}
wt[0]=0; //waiting time for first process is 0
//calculating waiting time
for(i=1;i<n;i++)
{
C:\Users\Vattem Siva Sankar\Documents\cpu scheduling.exe
Enter total number of processes(maximum 20):5
Enter Process Burst Time
P[1]:5
P[2]:5
P[3]:5
P[4]:5
P[5]:5
Process Burst Time Waiting Time Turnaround Time
P[1] 5 0 5
P[2] 5 5 10
P[3] 5 10 15
P[4] 5 15 20
P[5] 5 20 25
Average Waiting Time:10
Average Turnaround Time:15
Process exited after 17.29 seconds with return value 0
Press any key to continue . . .
Compiler Resources Compile Log Debug Find Results Close
Abort Compilation
Shorten compiler paths
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Vattem Siva Sankar\Documents\cpu scheduling.exe
- Output Size: 129.2705078125 KiB
- Compilation Time: 0.42s
Line: 1 Col: 1 Sel: 0 Lines: 43 Length: 961 Insert Done parsing in 0.031 seconds
32°C Light rain
ENG
13:26
10-09-2022