

Write a c-program to simulate the CPU scheduling algorithms first come first serve (FCFs) and shortest Job first (Non-preemption). # include Zstdio.n> int at [20], cput [20]; 100 40 character 12470 void main () \$

int n, i, cheice: there are arginary of many Print + l'Enter number of processes (n'); Scanf ["Y.d", &n); Print | "Enter arrival time of CPU time for each process Scanf ["/d" fin); respectively (nº); malla and unamanana for 11=0; 1< n; 1++)\$ scanf ("1.dy.d", & attid, & cout [10); Sum of column of some Printy ("Menue In In I FCFG In 2. SIF (Non-preemtive) In 3. crtf (Preemphive) \n 4. Exit(n); while U) & summed the main restart Scanf ("Y.a", &choice); F 32 EN 1 switch (choice) \$ cases: fcfs (n); break; case 2: SIF(n); break; break; race 4: exit (0); I many to the mytera st default: print + 1" Wrong choice \n"); 2 void FCFS Lipt n)s ent cmpt [20], tat [20], wt [20], prame [20], temp; float awt =0, atat =0; int cum=0, i.

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for (1=0; 1 < n; 1++) $
pname [i]=i;
for (1:0; i<n; 9++) $
if (at(i) = = at (i+1) & & cput (i)>cput(i+1))
temp=cput (1);
cput (i) = cput [i+1];
Cput (it1) = temp;
 temp = prame (i);
Prame [i]: prame [i+1];
Prame (it 1) = temp;
forli=0; icn;i++)s
Sum+ = cput(i);
cmpt (i) = sum;
tat [i] = cmpt [i] - at [i];
wt (i) = tat (i) - cput (i);
 4
for 1:0; icn; i++) $
 awt += wt[i];
atat + = tat [i];
awt= awt[n;
atat = atat /n;
Printf 1" It Process It Arrival home It counting It
wasting time It turn around time \n");
for (1=0; PCD; 17+)&
Printf 1" Int Pract 1t rate 1t rate
1. d; prame [i], at [i], yout [i], wt [i], at[i]);
Print + 1" Average waiting time -- 1/d", aut);
Print + 1" In Average turn around time -- 1/1; a tat");
```

void SIF lintn) \$ int cmpt [20), tat [20], wt [20], cput 1 [20]; float awt = 0, atat = 0, sum brust - time = 0; int sum = o, i, j, smallest; for liso; icn; itt) & coutilis = coutlis Sum-burst-tione + = cput (i); 3 Printf-1"It Process It waiting time It turn around bne (n"); aput 1 [9] = 9999; while wum < sum-burst-times f cmallest = 9; forli=o; icn; i+15 if lateid < = sum & a cput [i] > 0 & & cput [i] < cput 1 (smallest)) Smallest=i: Printf 1"1+ P[y.d] 1+1+ y.d 1+ 1+ y.d 10" smallest, sum + couts [smallest) - at [smallest), Sum - at [smallect]): aust + = sum + cput (smallest) - at (smallest); atatt = sum -at Csmallest): Cluti (smallest)=0; awt = awt /n; a tat = alat /n; Print + 1" \n Average wait time - - 1 + ", awt). Printf 1'1 in Average turnaround time -- 1.10, abl void srtf (intn) & Intremaining-time [20], tat [20], wt [20], completion time [w], smallest, time, i, count=0; float awt=0, atat=0; for 11=0; icn; 1++) remaining - time [i] = (put [i];

classmate hme = 0; while (counti=n) & Smallest = -1: for 10=0; 12n; 1++) \$ if lat +i) < = time for remaining-time li) >0 if Ismallest == -1 // remaining-timelis < remainingtomo (smalles7) smallest= i. 1°+ cmallest = = -1) & home ++; continue; remaining-time (smallest) - -; if Iremaining - time (smallest) = =01\$ count ++ : completion-time [smallest] = time +1; wt ['smallest = completion - time (smallent) at Comallest) - yout Comalles to: tat [smallest] = completion-time [smallest] unavalat Csmallest); time ++; for 10=0; 1cn; 1++) \$ awt + = wt Ci); atat + = tat (i); aut = aut/n; atat=atat/n; Printf I"/n Proces In Avial time in (Putine In washing hime In Turn award time In');

| | | | | | | CIASSA | ute |
|----------|--|---------|------------|---|---------------|---|-------|
| | | | | | | Page 14 | =0 |
| | -fo | r 1:- o | . 1 4 10 1 | 0 | | 0.000 | |
| | forli=0; i < n; i++)\$ Print 1111 121 | | | | | | |
| | Printf (",d\t /d\t /d\t /d\t;", at (P), cput (i), wt (i), tat (i)); | | | | | | |
| | 3 | (1) | Cput [i | I, wt li |), tar (13) | s i main | |
| | | 10 | | 0.0 | | 1" austs: | |
| | 7 (1) | th I'' | Trerage | z waiting | 712ne | f", awt); -7. f \n", a | hal a |
| | inn | F1 (" | Averag | e turnaci | oundhou | T \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | iar). |
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| | Δ. | 1 | | | (1 + 2 + 1) | diadinas? . | |
| | Outp | ut | | | | Š. | |
| | Enter number of process | | | | | | |
| | Enter arrival time and CPU time for each process respectively | | | | | | |
| | 0 | 3 | | | | * | |
| | 1 | 6 | | | | C CC C D D | |
| | 4 | 4 | 1 10 19 11 | | 1 | 2 3 5.0 | |
| | 6 | 2 | | | g- proc ler | amont fi | |
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| /2. | STF | | | | l amid are | id slama 1 | |
| 3. | SRTF | | | | - to a! | inmo 7 Jew | |
| 4. | Exit | 10-1-0 | h - sal no | N.37 + 100 | 2 - F - 211 | cmal da | |
| - (+- | 1. | - 1 | 4 | -1 blanco | 1 - Ctoolin | mod Int | |
| | _ | Δ | rrival | CPU | Mailing | turn arour | 74 |
| | Po | 32 / | 0 | 3 | 0 | 3 | 20 |
| | P) | |) | 4 | 2 | + + 08 1 | |
| | ρ ₂ | | 9 | 6 | 5 | 9 8 | |
| | P3 | | 6 | 22 +++ | 7 7 | 1 9 1 | |
| | Average waiting time 3. 50000 | | | | | | |
| | Avera | 00 to | IND ON | rund hime | 9.250 | OF TAID | |
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| | PLOD | | 0001171 | 3 | 10/0 | | |
| / soll i | PCIZ | 11 241 | it onti | 8 | 220079271 | | |
| | P [3] | | in ba | S HUMB ALL | | priding | |
| | P [2] | | | 11 | 7 | | |
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| nall | Average unitingtime 6.75000 | | | | | | |
|-------|--|--|--|--|--|--|--|
| 6 | Average turnaround time 3.0000 | | | | | | |
| | 3 | | | | | | |
| | | | | | | | |
| | Process Arrival time CPU waiting Two around | | | | | | |
| | 1 6 20 20 8 20 20 21 14 | | | | | | |
| | 2 4 4 | | | | | | |
| 11-0 | 3 3 Cas [16 Cas 2 - Cas 2 2 2 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | | | | | | |
| | 9 | | | | | | |
| | Averag waiting time 2.50000. | | | | | | |
| | Average Turn around time -6.250000 | | | | | | |
| 1. | FCFS 2 CTT 1 CT 2 CTT 1 CT 2 CTT 1 CT 2 CTT 1 CT 2 CTT 1 CTT 2 CTT 1 CTT 2 CTT 1 CTT 2 CTT | | | | | | |
| | PO PO P2 P1 P1 P2 P3 | | | | | | |
| | 0 1 3 4 6 9 13 15 | | | | | | |
| | P(0)3 P0(2) P1(6) P1(5) P1(3) P2(4) P3(2) | | | | | | |
| | 11 (6) P2(4) | | | | | | |
| | ρ3(2) | | | | | | |
| | | | | | | | |
| 2. | SJF | | | | | | |
| | PO PO P1 P1 P1 P3 P2 | | | | | | |
| | 0/ 1 3 4 6 9 11 15 | | | | | | |
| 9/0 | PO(3) PO(2) P1(6) P1(5) P1(3) P2(4) P3(4) | | | | | | |
| 10 | P1(6) P2(4) P2(4) P3(2) | | | | | | |
| 7/ | β3(2) | | | | | | |
| 1/ | Samuel a File of History | | | | | | |
| 16/2 | I Complete the com | | | | | | |
| 20/3/ | SRTF | | | | | | |
| | PO PO P1 P2 P2 P3 P1 | | | | | | |
| | 0 1 3 4 6 9 10 15 | | | | | | |
| | PO(3) PO(2) P1(6) P1(5) P2(2) P1(5) P1(5) | | | | | | |
| | P16) P2(4) P1(5) P3(2) | | | | | | |
| | P3(2) | | | | | | |
| | Show complete tracing | | | | | | |
| | Show complete tracing | | | | | | |
| | | | | | | | |

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Enter the number of processes: 4
Enter burst time and arrival time for each process:
rocess 1:
Burst Time: 3
rrival Time: 0
rocess 2:
Burst Time: 6
rrival Time: 1
rocess 3:
Burst Time: 4
rrival Time: 4
rocess 4:
Burst Time: 6
rrival Time: 2
CFS Scheduling:
rocess Burst Time Arrival Time Waiting Time Turnaround Time
                                                     3
                                     2
      6
                      1
                                                     8
      4
                      4
                                     4
                                                     8
                                      6
                                                     12
verage waiting time: 3.00
verage turnaround time: 7.75
JF Scheduling:
rocess Burst Time
                     Arrival Time Waiting Time
                                                    Turnaround Time
```

9

2

14

Average waiting time: 7.00 Average turnaround time: 11.75

4

2

6

15

6

20