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Batch: B

Topic:	To write a program to implement CPU scheduling algorithm FCFS
Prerequisite:	Basic knowledge of using the linux terminal and system calls, and C language
Mapping With COs:	CSL404.4
Theory:	Given n processes with their burst times, the task is to find average waiting time and average turn around time using FCFS scheduling algorithm. (FCFS), is the simplest scheduling algorithm. In this, the process that comes first will be executed first and next process starts only after the previous gets fully executed. Here we are considering that arrival time for all processes is 0.
Objective:	• To understand & analyse FCFS algorithm • To implement FCFS algorithm • To calculate average waiting time & turn around time

Program Code:	#include <stdio.h>
	// Function to find the waiting time for all processes
	int waitingtime(int proc[], int n,
	int burst_time[], int wait_time[]) {
	// waiting time for first process is 0
	wait_time[0] = 0;
	// calculating waiting time
	for (int i = 1; i < n ; i++)
	wait_time[i] = burst_time[i-1] + wait_time[i-1] ;
	return 0;
	}
	// Function to calculate turn around time

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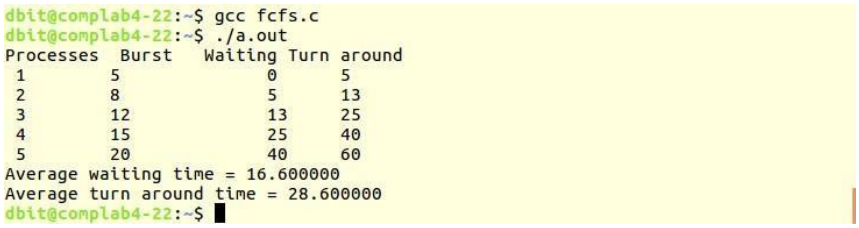
int turnaroundtime( int proc[], int n,
int burst_time[], int wait_time[], int tat[]) {
   // calculating turnaround time by adding
   // burst_time[i] + wait_time[i]
   int i;
   for ( i = 0; i < n ; i++)
   tat[i] = burst_time[i] + wait_time[i];
   return 0;
}
//Function to calculate average time
int avgtime( int proc[], int n, int burst_time[]) {
   int wait_time[n], tat[n], total_wt = 0, total_tat = 0;
   int i;
   //Function to find waiting time of all processes
   waitingtime(proc, n, burst_time, wait_time);
   //Function to find turn around time for all processes
   turnaroundtime(proc, n, burst_time, wait_time, tat);
   //Display processes along with all details
   printf("Processes  Burst   Waiting Turn around \n");
   // Calculate total waiting time and total turn
   // around time
   for ( i=0; i<n; i++) {
      total_wt = total_wt + wait_time[i];
      total_tat = total_tat + tat[i];
      printf(" %d\t %d\t\t %d \t%d\n", i+1, burst_time[i],
wait_time[i], tat[i]);
   }
   printf("Average waiting time = %f\n", (float)total_wt / (float)n);
   printf("Average turn around time = %f\n", (float)total_tat /
(float)n);
   return 0;
```

	}
	// main function
	int main() {
	//process id's
	int proc[] = { 1, 2, 3, 4, 5};
	int n = sizeof proc / sizeof proc[0];
	//Burst time of all processes
	int burst_time[] = {5, 8, 12, 15, 20};
	avgtime(proc, n, burst_time);
	return 0;
	}

Output Snapshot:	
Outcome:	• Ability to **implement and analyze** different process schedulingalgorithms
Conclusion:	Students will learn to analyse and implement FCFS algorithm
References:	Reference document uploaded along with the assignment Internet facility is available to explore further .