# 

**Simulate the working of FCFS Scheduling Algorithm**

**Implementation:**

1- Input the processes along with their burst time (bt).  
2- Find waiting time (wt) for all processes.  
3- As first process that comes need not to wait so   
 waiting time for process 1 will be 0 i.e. wt[0] = 0.  
4- Find waiting time for all other processes i.e. for  
 process i ->   
 wt[i] = bt[i-1] + wt[i-1] .  
5- Find turnaround time = waiting\_time + burst\_time   
 for all processes.  
6- Find average waiting time =   
 total\_waiting\_time / no\_of\_processes.  
7- Similarly, find average turnaround time =   
 total\_turn\_around\_time / no\_of\_processes.

**C++ Program:**

* **// C++ program for implementation of FCFS**
* **// scheduling**
* **#include<iostream>**
* **using namespace std;**
* **// Function to find the waiting time for all**
* **// processes**
* **void findWaitingTime(int processes[], int n,**
* **int bt[], int wt[])**
* **{**
* **// waiting time for first process is 0**
* **wt[0] = 0;**
* **// calculating waiting time**
* **for (int i = 1; i < n ; i++ )**
* **wt[i] = bt[i-1] + wt[i-1] ;**
* **}**
* **// Function to calculate turn around time**
* **void findTurnAroundTime( int processes[], int n,**
* **int bt[], int wt[], int tat[])**
* **{**
* **// calculating turnaround time by adding**
* **// bt[i] + wt[i]**
* **for (int i = 0; i < n ; i++)**
* **tat[i] = bt[i] + wt[i];**
* **}**
* **//Function to calculate average time**
* **void findavgTime( int processes[], int n, int bt[])**
* **{**
* **int wt[n], tat[n], total\_wt = 0, total\_tat = 0;**
* **//Function to find waiting time of all processes**
* **findWaitingTime(processes, n, bt, wt);**
* **//Function to find turn around time for all processes**
* **findTurnAroundTime(processes, n, bt, wt, tat);**
* **//Display processes along with all details**
* **cout << "Processes "<< " Burst time "**
* **<< " Waiting time " << " Turn around time\n";**
* **// Calculate total waiting time and total turn**
* **// around time**
* **for (int i=0; i<n; i++)**
* **{**
* **total\_wt = total\_wt + wt[i];**
* **total\_tat = total\_tat + tat[i];**
* **cout << " " << i+1 << "\t\t" << bt[i] <<"\t "**
* **<< wt[i] <<"\t\t " << tat[i] <<endl;**
* **}**
* **cout << "Average waiting time = "**
* **<< (float)total\_wt / (float)n;**
* **cout << "\nAverage turn around time = "**
* **<< (float)total\_tat / (float)n;**
* **}**
* **// Driver code**
* **int main()**
* **{**
* **//process id's**
* **int processes[] = { 1, 2, 3};**
* **int n = sizeof processes / sizeof processes[0];**
* **//Burst time of all processes**
* **int burst\_time[] = {10, 5, 8};**
* **findavgTime(processes, n, burst\_time);**
* **return 0;**
* **}**

**Output:**

Processes Burst time Waiting time Turn around time  
 1 10 0 10  
 2 5 10 15  
 3 8 15 23  
Average waiting time = 8.33333  
Average turn around time = 16