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Exp. No: 4	**Date:** 23/02/2022

FCFS

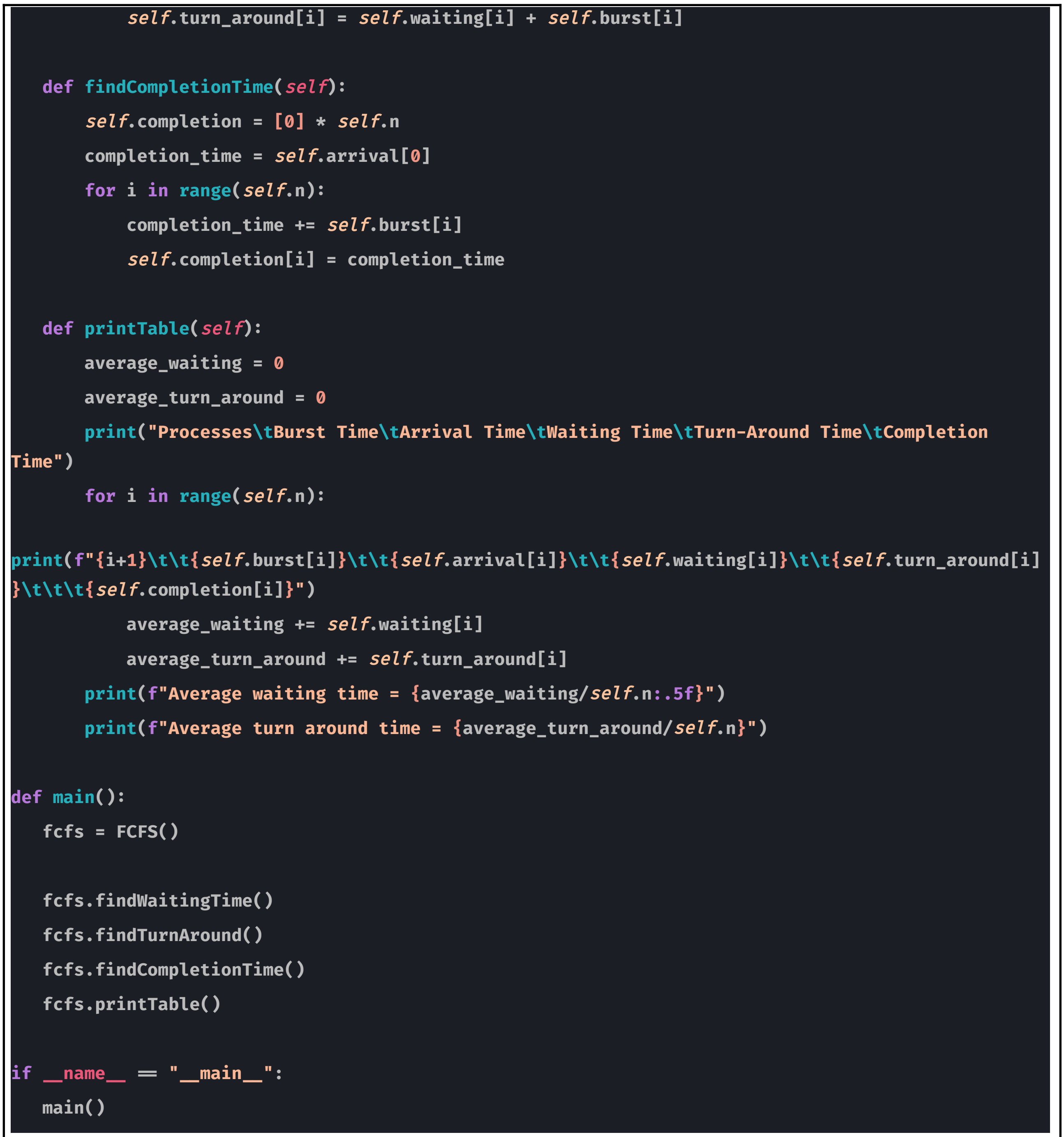
Aim: Write a program to implement First-come, first-served(FCFS) scheduling with arrival time using python

Algorithm:

1. START
2. Define Class FCFS
    a. Initialize constructor and get input from the user about number of processes and the burst and arrival time for these processes
    b. Create function findWaitingTime to compute waiting time for all the processes
    c. Create function findTurnAroundTime to compute the turn around time for all the processes
    d. Create function findCompletionTime to compute the completion time for all the processes
    e. Create function printTable to print the computed data in the required table format
3. Create main function
    a. Create an object “fcfs” of the class “FCFS”
    b. Call the methods findWaitingTime, findTurnAround, findCompletionTime and printTable in this order
4. STOP

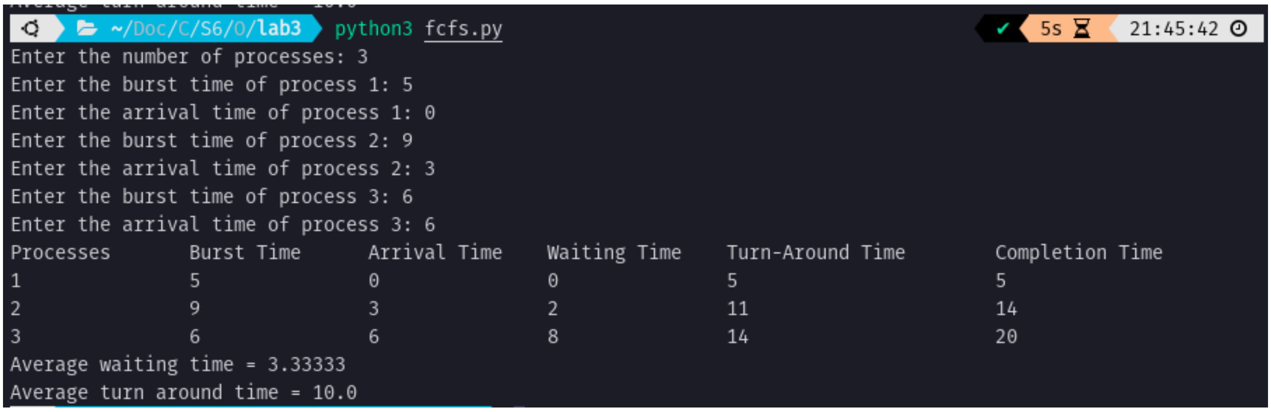
Program

```
class FCFS:
   def __init__(self):
       self.burst = []
       self.arrival = []

       self.n = int(input("Enter the number of processes: "))
       for i in range(self.n):
           self.burst.append(int(input(f"Enter the burst time of process {i+1}: ")))
           self.arrival.append(int(input(f"Enter the arrival time of process {i+1}: ")))

   def findWaitingTime(self):
       self.waiting = [0] * self.n
       total_waiting = self.arrival[0]
       for i in range(self.n):
           self.waiting[i] = total_waiting - self.arrival[i]
           total_waiting += self.burst[i]

   def findTurnAround(self):
       self.turn_around = [0] * self.n
       for i in range(self.n):
```



```
            self.turn_around[i] = self.waiting[i] + self.burst[i]

    def findCompletionTime(self):
        self.completion = [0] * self.n
        completion_time = self.arrival[0]
        for i in range(self.n):
            completion_time += self.burst[i]
            self.completion[i] = completion_time

    def printTable(self):
        average_waiting = 0
        average_turn_around = 0
        print("Processes\tBurst Time\tArrival Time\tWaiting Time\tTurn-Around Time\tCompletion
Time")
        for i in range(self.n):

print(f"{i+1}\t\t{self.burst[i]}\t\t{self.arrival[i]}\t\t{self.waiting[i]}\t\t{self.turn_around[i]
}\t\t\t{self.completion[i]}")
            average_waiting += self.waiting[i]
            average_turn_around += self.turn_around[i]
        print(f"Average waiting time = {average_waiting/self.n:.5f}")
        print(f"Average turn around time = {average_turn_around/self.n}")

def main():
    fcfs = FCFS()

    fcfs.findWaitingTime()
    fcfs.findTurnAround()
    fcfs.findCompletionTime()
    fcfs.printTable()

if __name__ == "__main__":
    main()
```

Output



```
 ~/Doc/C/S6/O/lab3  python3 fcfs.py                                           ✓  5s ⧗   21:45:42
Enter the number of processes: 3
Enter the burst time of process 1: 5
Enter the arrival time of process 1: 0
Enter the burst time of process 2: 9
Enter the arrival time of process 2: 3
Enter the burst time of process 3: 6
Enter the arrival time of process 3: 6
Processes       Burst Time      Arrival Time    Waiting Time    Turn-Around Time        Completion Time
1               5               0               0               5                       5
2               9               3               2               11                      14
3               6               6               8               14                      20
Average waiting time = 3.33333
Average turn around time = 10.0
```

Result:

Python Program to implement FCFS scheduling with Arrival time is compiled and executed successfully

Remarks: