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**ROLL NO:- 46**

**CLASS/BATCH:- TE-B-2**

**Practical No:-4**

//Write a program to simulate CPU Scheduling Algorithms: FCFS, SJF (Preemptive), Priority (Non-Preemptive) and Round Robin (Preemptive).

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**FCFS CODE**

```
import java.util.Scanner;

public class FCFS {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter number of processes: ");
        int n = sc.nextInt();

        int[] arrivalTime = new int[n];
        int[] burstTime = new int[n];
        int[] completionTime = new int[n];
        int[] turnAroundTime = new int[n];
        int[] waitingTime = new int[n];

        for (int i = 0; i < n; i++) {
            System.out.println("\nProcess P" + (i + 1) + ":");
            System.out.print("Enter Arrival Time: ");
            arrivalTime[i] = sc.nextInt();
            System.out.print("Enter Burst Time: ");
            burstTime[i] = sc.nextInt();
        }

        int currentTime = 0;
        for (int i = 0; i < n; i++) {
            if (currentTime < arrivalTime[i]) {
                currentTime = arrivalTime[i];
            }
            currentTime += burstTime[i];
            completionTime[i] = currentTime;
        }

        for (int i = 0; i < n; i++) {
            turnAroundTime[i] = completionTime[i] - arrivalTime[i];
            waitingTime[i] = turnAroundTime[i] - burstTime[i];
        }

        System.out.println("\nProcess\t\tAT\t\tBT\t\tCT\t\tTAT\t\tWT");
        for (int i = 0; i < n; i++) {
            System.out.println("P" + (i + 1) + "\t\t" + arrivalTime[i] +
                "\t\t" + burstTime[i] + "\t\t"
                + completionTime[i] + "\t\t" + turnAroundTime[i] + "\t\t" +
                waitingTime[i]);
        }

        double totalTAT = 0, totalWT = 0;
        for (int i = 0; i < n; i++) {
            totalTAT += turnAroundTime[i];
            totalWT += waitingTime[i];
        }
    }
}
```

```

        System.out.printf("\nAverage Turnaround Time: %.2f\n", totalTAT /
n);
        System.out.printf("Average Waiting Time: %.2f\n", totalWT / n);

        sc.close();
    }
}

```

# **OUTPUT:**

```

gescoe@gescoe-OptiPlex-3010:~/Desktop/TE_B[46]/LP-1$ javac FCFS.java
gescoe@gescoe-OptiPlex-3010:~/Desktop/TE_B[46]/LP-1$ java FCFS Enter
number of processes: 3

```

```

Process P1:
Enter Arrival Time: 0
Enter Burst Time: 5

```

```

Process P2:
Enter Arrival Time: 0
Enter Burst Time: 3

```

```

Process P3:
Enter Arrival Time: 0
Enter Burst Time: 8

```

Process	AT	BT	CT	TAT	WT
P1	0	5	5	5	0
P2	0	3	8	8	5
P3	0	8	16	16	8

```

Average Turnaround Time: 9.67
Average Waiting Time: 4.33

```