National University of Modern Languages

Lab Report#06

Roll # 2340

Class: BSCS 5B Morning

Subject: Operating System(Lab)

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Non-Preemptive Scheduling:

```cpp
#include<iostream>
using namespace std;
int main()
{
    int a[10],b[10],x[10],pr[10]={0};
    int waiting[10],turnaround[10],completion[10];
    int i,j,smallest,count=0,time,n;
    double avg=0,tt=0,end;
    cout<<"\nEnter the number of Processes: ";
    cin>>n;
    for(i=0;i<n;i++)
    {
        cout<<"\nEnter arrival time of process: ";
        cin>>a[i];
    }
    for(i=0;i<n;i++)
    {
        cout<<"\nEnter burst time of process: ";
        cin>>b[i];
    }
    for(i=0;i<n;i++)
    {
        cout<<"\nEnter priority of process: ";
        cin>>pr[i];
```

```cpp
        }
        for(i=0;i<n;i++)
            x[i]=b[i];
        pr[9]=-1;
        for(time=0;count!=n;time++)
        {
            smallest=9;
            for(i=0;i<n;i++)
            {
                if(a[i]<=time && pr[i]>pr[smallest] && b[i]>0 )
                    smallest=i;
            }
            time+=b[smallest]-1;
            b[smallest]=-1;
            count++;
            end=time+1;
            completion[smallest] = end;
            waiting[smallest] = end - a[smallest] - x[smallest];
            turnaround[smallest] = end - a[smallest];
        }
    cout<<"Process"<<"\t"<< "burst-time"<<"\t"<<"arrival-time" <<"\t"<<"waiting-
time" <<"\t"<<"turnaround-time"<< "\t"<<"completion-
time"<<"\t"<<"Priority"<<endl;
    for(i=0;i<n;i++)
    {
```

```
cout<<"p"<<i+1<<"\t\t"<<x[i]<<"\t\t"<<a[i]<<"\t\t"<<waiting[i]<<"\t\t"<<turnaro
und[i]<<"\t\t"<<completion[i]<<"\t\t"<<pr[i]<<endl;

        avg = avg + waiting[i];

        tt = tt + turnaround[i];

    }

    cout<<"\n\nAverage waiting time ="<<avg/n;

    cout<<"  Average Turnaround time ="<<tt/n<<endl;

}
```

OUTPUT:

```
Enter the number of Processes: 6

Enter arrival time of process: 0

Enter arrival time of process: 1

Enter arrival time of process: 2

Enter arrival time of process: 3

Enter arrival time of process: 4

Enter arrival time of process: 5

Enter burst time of process: 4

Enter burst time of process: 5

Enter burst time of process: 1

Enter burst time of process: 2

Enter burst time of process: 3

Enter burst time of process: 6

Enter priority of process: 4

Enter priority of process: 5

Enter priority of process: 7

Enter priority of process: 2

Enter priority of process: 1

Enter priority of process: 6
```

Process	burst-time	arrival-time	waiting-time	turnaround-time	completion-time	Priority
p1	4	0	0	4	4	4
p2	5	1	10	15	16	5
p3	1	2	2	3	5	7
p4	2	3	13	15	18	2
p5	3	4	14	17	21	1
p6	6	5	0	6	11	6

Average waiting time =6.5   Average Turnaround time =10