**Assignment No. 3:**

**Implement the C program for CPU Scheduling Algorithms: Shortest Job First (Preemptive) and Round Robin with different arrival time.**

1. **Shortest Job First**

#include<stdio.h> void main()

{

int i,j,n,bu[10],wa[10],tat[10],t,ct[10],max; float awt=0,att=0,temp=0;

printf("\nTo write a C program to implement Round Robin CPU scheduling algorithm.s\n\n");

printf("Enter the no of processes -- "); scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("\nEnter Burst Time for process %d -- ", i+1); scanf("%d",&bu[i]);

ct[i]=bu[i];

}

printf("\nEnter the size of time slice -- "); scanf("%d",&t);

max=bu[0]; for(i=1;i<n;i++) if(max<bu[i]) max=bu[i]; for(j=0;j<(max/t)+1;j++) for(i=0;i<n;i++) if(bu[i]!=0)

if(bu[i]<=t) { tat[i]=temp+bu[i]; temp=temp+bu[i]; bu[i]=0;

}

else { bu[i]=bu[i]-t; temp=temp+t;

}

for(i=0;i<n;i++){ wa[i]=tat[i]-

ct[i]; att+=tat[i]; awt+=wa[i];}

printf("\n\tPROCESS\t BURST TIME \t WAITING TIME\tTURNAROUND

TIME\n");

for(i=0;i<n;i++)

printf("\t%d \t %d \t\t %d \t\t %d \n",i+1,ct[i],wa[i],tat[i]); printf("\nThe Average Turnaround time is -- %f",att/n); printf("\nThe Average Waiting time is -- %f ",awt/n);

}

/\* OUTPUT

To write a C program to implement Round Robin CPU scheduling algorithm.s Enter the no of processes -- 4

Enter Burst Time for process 1 -- 3 Enter Burst Time for process 2 -- 6 Enter Burst Time for process 3 -- 4 Enter Burst Time for process 4 -- 2 Enter the size of time slice -- 2

PROCESS BURST TIME WAITING TIME TURNAROUND TIME

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 3 | 6 | 9 |
| 2 | 6 | 9 | 15 |
| 3 | 4 | 9 | 13 |
| 4 | 2 | 6 | 8 |

The Average Turnaround time is -- 11.250000 The Average Waiting time is -- 7.500000

Process exited after 19.63 seconds with return value 41 Press any key to continue . . .

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1. **Round Robin**

#include<stdio.h> void main()

{

int i,j,n,bu[10],wa[10],tat[10],t,ct[10],max; float awt=0,att=0,temp=0;

printf("\nTo write a C program to implement Round Robin CPU scheduling algorithm.s\n\n");

printf("Enter the no of processes -- "); scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("\nEnter Burst Time for process %d -- ", i+1); scanf("%d",&bu[i]);

ct[i]=bu[i];

}

printf("\nEnter the size of time slice -- "); scanf("%d",&t);

max=bu[0]; for(i=1;i<n;i++) if(max<bu[i]) max=bu[i]; for(j=0;j<(max/t)+1;j++) for(i=0;i<n;i++) if(bu[i]!=0)

if(bu[i]<=t) { tat[i]=temp+bu[i]; temp=temp+bu[i]; bu[i]=0;

}

else { bu[i]=bu[i]-t; temp=temp+t;

}

for(i=0;i<n;i++){ wa[i]=tat[i]-

ct[i]; att+=tat[i]; awt+=wa[i];}

printf("\n\tPROCESS\t BURST TIME \t WAITING TIME\tTURNAROUND TIME\n");

for(i=0;i<n;i++)

printf("\t%d \t %d \t\t %d \t\t %d \n",i+1,ct[i],wa[i],tat[i]); printf("\nThe Average Turnaround time is -- %f",att/n); printf("\nThe Average Waiting time is -- %f ",awt/n);

}

/\* OUTPUT

To write a C program to implement Round Robin CPU scheduling algorithm.s Enter the no of processes -- 4

Enter Burst Time for process 1 -- 3

Enter Burst Time for process 2 -- 6 Enter Burst Time for process 3 -- 4 Enter Burst Time for process 4 -- 2 Enter the size of time slice -- 2

PROCESS BURST TIME WAITING TIME TURNAROUND TIME

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 3 | 6 | 9 |
| 2 | 6 | 9 | 15 |
| 3 | 4 | 9 | 13 |
| 4 | 2 | 6 | 8 |

The Average Turnaround time is -- 11.250000 The Average Waiting time is -- 7.500000

Process exited after 19.63 seconds with return value 41 Press any key to continue . . .

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