***//Assignment-9 Operating Systems Lab***

***//A program to implement non-preemptive priority based scheduling algorithm***

#include<stdio.h>

int main()

{

int burst\_time[20], process[20], waiting\_time[20], turnaround\_time[20], priority[20];

int i, j, limit, sum = 0, position, temp;

float average\_wait\_time, average\_turnaround\_time;

printf("Enter Total Number of Processes:\t");

scanf("%d", &limit);

printf("\nEnter Burst Time and Priority For %d Processes\n", limit);

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

{

printf("\nProcess[%d]\n", i + 1);

printf("Process Burst Time:\t");

scanf("%d", &burst\_time[i]);

printf("Process Priority:\t");

scanf("%d", &priority[i]);

process[i] = i + 1;

}

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

{

position = i;

for(j = i + 1; j < limit; j++)

{

if(priority[j] < priority[position])

{

position = j;

}

}

temp = priority[i];

priority[i] = priority[position];

priority[position] = temp;

temp = burst\_time[i];

burst\_time[i] = burst\_time[position];

burst\_time[position] = temp;

temp = process[i];

process[i] = process[position];

process[position] = temp;

}

waiting\_time[0] = 0;

for(i = 1; i < limit; i++)

{

waiting\_time[i] = 0;

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

{

waiting\_time[i] = waiting\_time[i] + burst\_time[j];

}

sum = sum + waiting\_time[i];

}

average\_wait\_time = sum / limit;

sum = 0;

printf("\nProcess ID\t\tBurst Time\t Waiting Time\t Turnaround Time\n");

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

{

turnaround\_time[i] = burst\_time[i] + waiting\_time[i];

sum = sum + turnaround\_time[i];

printf("\nProcess[%d]\t\t%d\t\t %d\t\t %d\n", process[i], burst\_time[i], waiting\_time[i], turnaround\_time[i]);

}

average\_turnaround\_time = sum / limit;

printf("\nAverage Waiting Time:\t%f", average\_wait\_time);

printf("\nAverage Turnaround Time:\t%f\n", average\_turnaround\_time);

return 0;

}

**OUTPUT:**

Enter Total Number of Processes: 3

Enter Burst Time and Priority For 3 Processes

Process[1]

Process Burst Time: 15

Process Priority: 10

Process[2]

Process Burst Time: 20

Process Priority: 7

Process[3]

Process Burst Time: 5

Process Priority: 1

Process ID Burst Time Waiting Time Turnaround Time

Process[3] 5 0 5

Process[2] 20 5 25

Process[1] 15 25 40

Average Waiting Time: 10.000000

Average Turnaround Time: 23.000000