**National University of Modern Languages**

Logo

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**Lab Report#05**

**Roll # 2340**

**Class: BSCS 5B Morning**

**Subject: Operating System(Lab)**

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**Preemptive Priority Scheduling:**

#include <iostream>

using namespace std;

int main()

{

int n = 5; //number of processes to be scheduled

int arrivalTime[n] = {0, 0, 6, 11, 12};

int burstTime[n] = {4, 3, 7, 4, 2};

int priority[n + 1] = {1, 2, 1, 3, 2};

int x[n];

int waitingTime[n], turnaroundTime[n], completionTime[n];

int i, j, smallest, count = 0, time; // count -> number of processes completed

double avg = 0, tt = 0, end;

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

x[i] = burstTime[i];

priority[n] = 10000;

for (time = 0; count != n; time++)

{

smallest = n;

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

{

if (arrivalTime[i] <= time && priority[i] < priority[smallest] && burstTime[i] > 0)

smallest = i;

}

burstTime[smallest]--;

if (burstTime[smallest] == 0)

{

count++;

end = time + 1;

completionTime[smallest] = end;

waitingTime[smallest] = end - arrivalTime[smallest] - x[smallest];

turnaroundTime[smallest] = end - arrivalTime[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" << arrivalTime[i] << "\t\t" << waitingTime[i] << "\t\t" << turnaroundTime[i] << "\t\t" << completionTime[i] << "\t\t" << priority[i] << endl;

avg = avg + waitingTime[i];

tt = tt + turnaroundTime[i];

}

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

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

}

**Output:**

A picture containing text, monitor, indoor, screenshot

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