Aim: To write C program to implement Priority based CPU scheduling algorithm.

Code:

#include <stdio.h>

int main() {

int n, i, j;

printf("Enter number of processes: ");

scanf("%d", &n);

int pid[n], bt[n], pri[n], wt[n], tat[n], temp;

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

pid[i] = i + 1;

printf("Enter burst time and priority for process %d: ", pid[i]);

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

}

// Sorting based on priority (lower number = higher priority)

for (i = 0; i < n - 1; i++) {

for (j = i + 1; j < n; j++) {

if (pri[i] > pri[j]) {

temp = pri[i]; pri[i] = pri[j]; pri[j] = temp;

temp = bt[i]; bt[i] = bt[j]; bt[j] = temp;

temp = pid[i]; pid[i] = pid[j]; pid[j] = temp;

}

}

}

wt[0] = 0;

for (i = 1; i < n; i++) {

wt[i] = wt[i - 1] + bt[i - 1];

}

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

tat[i] = wt[i] + bt[i];

}

printf("\nProcess\tBT\tPriority\tWT\tTAT\n");

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

printf("P%d\t%d\t%d\t\t%d\t%d\n", pid[i], bt[i], pri[i], wt[i], tat[i]);

}

printf("\nGantt Chart:\n|");

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

printf(" P%d |", pid[i]);

}

printf("\n0");

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

printf("\t%d", wt[i] + bt[i]);

}

return 0;

}

