S.No: 1	Exp. Name: ***Implement CPU Scheduling Algorithms***	Date: 2022-05-06

ID: 2001330130175

Aim:

Write a program to implement the Multi Level Queue Scheduling.

Source Code:

os5.c

```
#include<stdio.h>
int main() {
   int p[20], bt[20], su[20], wt[20], tat[20], i, k, n, temp;
   float wtavg, tatavg;
   printf("Enter the number of processes:");
   scanf("%d", & n);
   for (i = 0; i < n; i++) {
      p[i] = i;
      printf("Enter the Burst Time of Process %d:", i);
      scanf("%d", & bt[i]);
      printf("System/User Process (0/1) ?");
      scanf("%d", & su[i]);
   }
   for (i = 0; i < n; i++)
   for (k = i + 1; k < n; k++)
   if (su[i] > su[k]) {
      temp = p[i];
      p[i] = p[k];
      p[k] = temp;
      temp = bt[i];
      bt[i] = bt[k];
      bt[k] = temp;
      temp = su[i];
      su[i] = su[k];
      su[k] = temp;
   }
   wtavg = wt[0] = 0;
   tatavg = tat[0] = bt[0];
   for (i = 1; i < n; i++) {
      wt[i] = wt[i - 1] + bt[i - 1];
      tat[i] = tat[i - 1] + bt[i];
      wtavg = wtavg + wt[i];
      tatavg = tatavg + tat[i];
   }
   printf("PROCESS\t\t SYSTEM/USER PROCESS \tBURST TIME\tWAITING TIME\tTURNAROUND TIM
E");
   for (i = 0; i < n; i++)
   printf("\n%d \t\t %d \t\t %d \t\t %d \t\t %d ", p[i], su[i], bt[i], wt[i], tat[i]);
   printf("\nAverage Waiting Time is --- %f", wtavg / n);
   printf("\nAverage Turnaround Time is --- %f", tatavg / n);
   return 0;
   }
```

Execution Results - All test cases have succeeded!

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Test Case - 1

User Output

```
Enter the number of processes: 2
Enter the Burst Time of Process 0: 45
System/User Process (0/1) ? 0
Enter the Burst Time of Process 1: 67
System/User Process (0/1) ? 1
PROCESS          SYSTEM/USER PROCESS    BURST TIME      WAITING TIME    TURNAROUND TIME
0                0                45             0               45
1                1                67             45              112
Average Waiting Time is --- 22.500000
Average Turnaround Time is --- 78.500000
```