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Lab-Excercise : 5 (CPU Scheduling)

Q1. Ans. The required C program is given as:

```
#include <stdio.h>
int waitingtime(int proc[], int n,
int burst_time[], int wait_time[]) {

wait_time[0] = 0;

for (int i = 1; i < n ; i++ )
wait_time[i] = burst_time[i-1] + wait_time[i-1] ;
return 0;
}

int turnaroundtime( int proc[], int n,
int burst_time[], int wait_time[], int tat[]) {
int i;
for ( i = 0; i < n ; i++)
tat[i] = burst_time[i] + wait_time[i];
return 0;
}

int avgtime( int proc[], int n, int burst_time[]) {
int wait_time[n], tat[n], total_wt = 0, total_tat = 0;
int i;

waitingtime(proc, n, burst_time, wait_time);

turnaroundtime(proc, n, burst_time, wait_time, tat);

printf("Processes(Zerox) Burst(total-pages-zerox-time) Waiting Turn around
");

for ( i=0; i<n; i++) {
    total_wt = total_wt + wait_time[i];
    total_tat = total_tat + tat[i];
    printf(" %d\t %d\t\t %d \t%d
", i+1, burst_time[i], wait_time[i], tat[i]);
}
printf("Average waiting time = %f
", (float)total_wt / (float)n);
printf("Average turn around time = %f
", (float)total_tat / (float)n);
return 0;
}

int main() {
    int proc[] = { 1, 2, 3};
    int n = sizeof proc / sizeof proc[0];
```

```

int burst_time[] = {5, 8, 12};
avgtime(proc, n, burst_time);
return 0;
}

```

Output:

```

student4@AB1205BSC5031:~/Desktop/21BCE1288$ gcc cpu-scheduling.c -lpthread
student4@AB1205BSC5031:~/Desktop/21BCE1288$ ./a.out
Processes(zerox) Burst(total-pages-zerox-time) Waiting Turn around 1 5 0 5 2 8 5 13 3 12 13 25Average waiting time = 6.000000Avera
ge turn around time = 14.333333student4@AB1205BSC5031:~/Desktop/21BCE1288$ ^C
student4@AB1205BSC5031:~/Desktop/21BCE1288$

```

Calculations:

> Unit time = 0.78
 >(Assumed) total processes : p1, p2 , p3
 >(Assumed) P1 -> no.of pages : 7 => Burst Time : (5)
 >(Assumed) P2 -> no.of pages : 10 => Burst Time : (8)
 >(Assumed) P3 -> no.of pages : 15 => Burst Time : (12)

Therefore, the average waiting time = 6.000000
Therefore, the Average turn around time = 14.333333
