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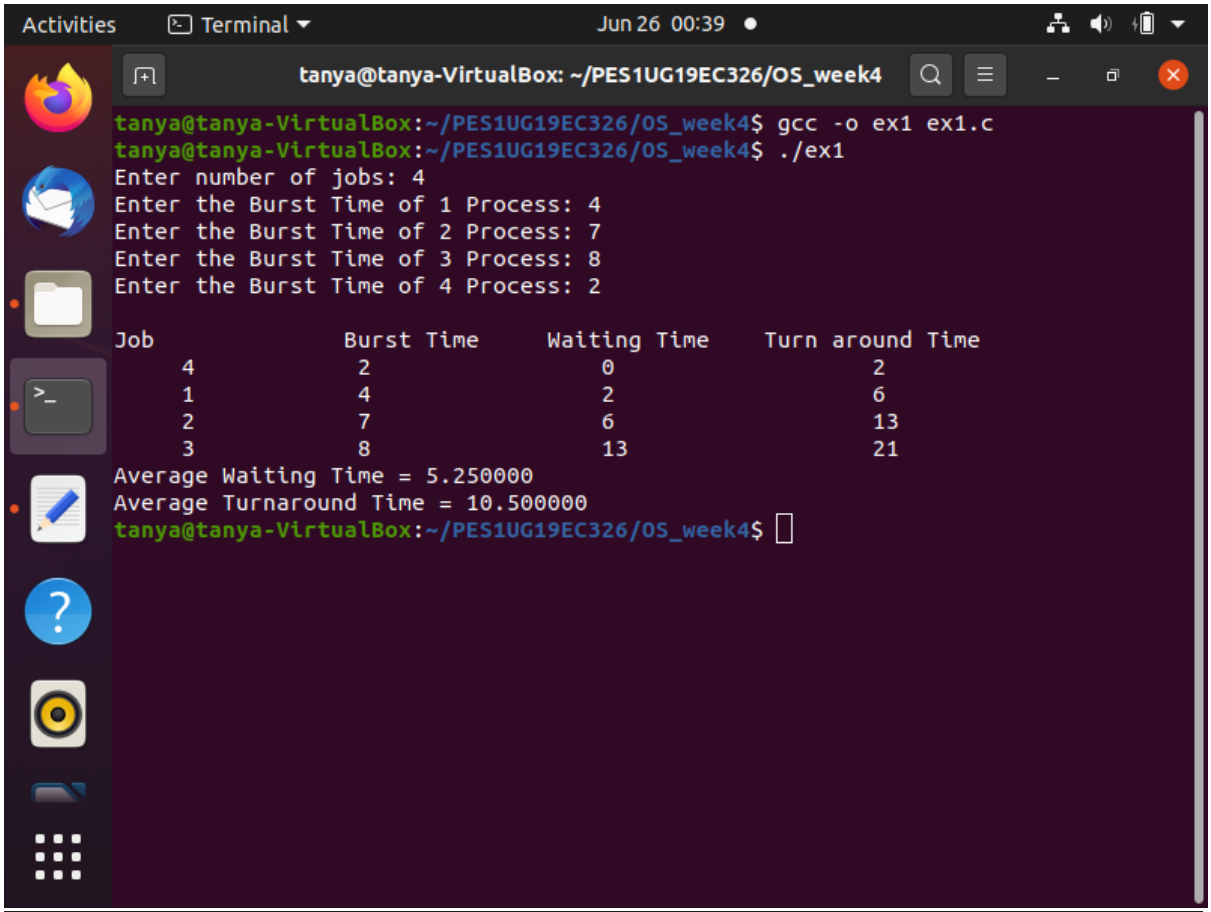
Branch: ECE & OS_LAB_WEEK: 4

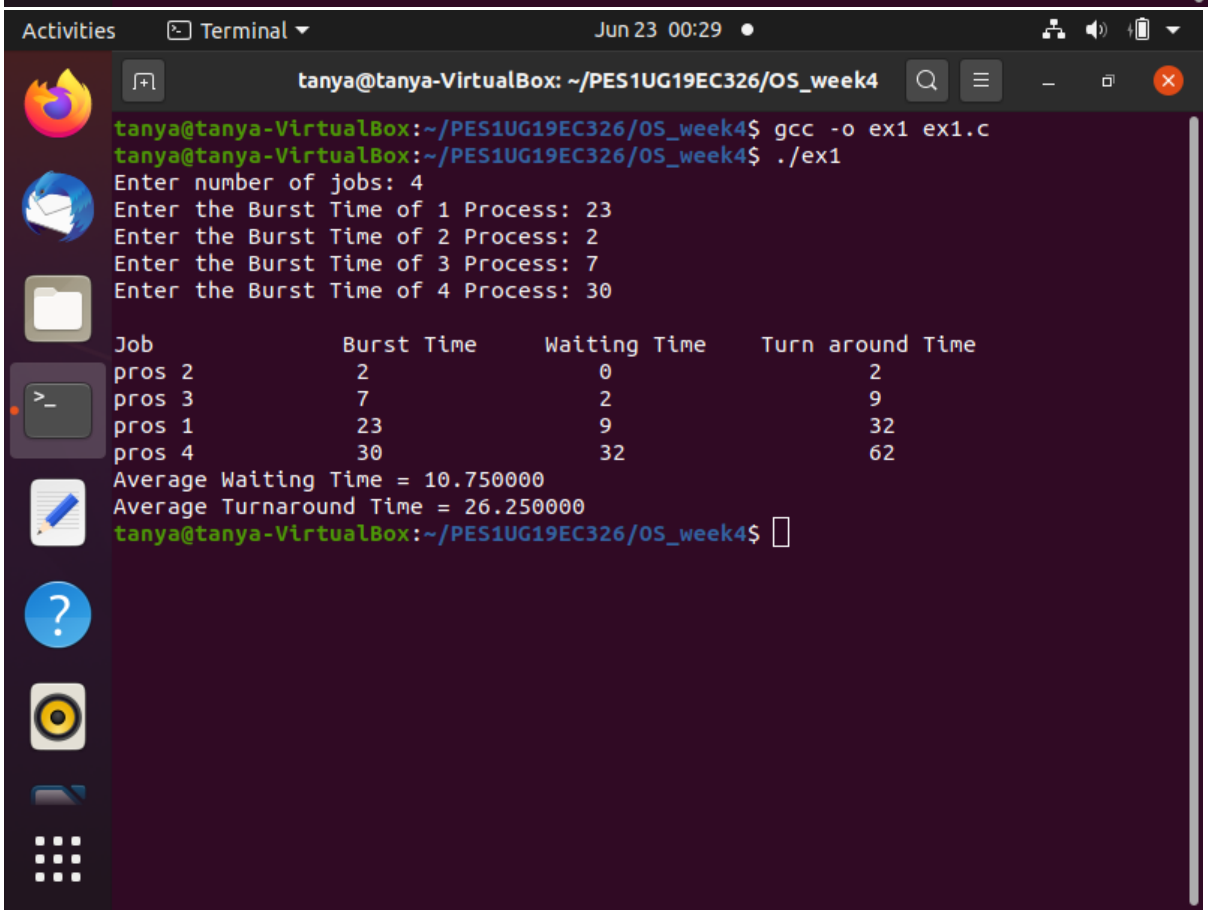
a)

```
#include<stdio.h>
 int main()
{
   int bt[30],prior[50],wt[30],tat[30],i,j,n,total=0,pos,temp;
   float avgwt,avgtat;
   printf("Enter number of jobs: ");
   scanf("%d",&n);
   for(i=0;i<n;i++)
   {
      printf("Enter the Burst Time of %d Process: ",i+1);
      scanf("%d",&bt[i]);
      prior[i]=i+1;
   }
   for(i=0;i<n;i++)
   {
      pos=i;
      for(j=i+1;j<n;j++)
      {
         if(bt[j]<bt[pos])
            pos=j;
      }

      temp=bt[i];
      bt[i]=bt[pos];
      bt[pos]=temp;
```

```
        temp=prior[i];
        prior[i]=prior[pos];
        prior[pos]=temp;
    }

    wt[0]=0;
    for(i=1;i<n;i++)
    {
        wt[i]=0;
        for(j=0;j<i;j++)
            wt[i]+=bt[j];

        total+=wt[i];
    }
    avgwt=(float)total/n;
    total=0;
    printf("\nJob\t\t Burst Time \tWaiting Time \tTurn around Time");
    for(i=0;i<n;i++)
    {
        tat[i]=bt[i]+wt[i];
        total+=tat[i];
        printf("\n %d\t\t  %d\t\t    %d\t\t\t%d",prior[i],bt[i],wt[i],tat[i]);
    }
    avgtat=(float)total/n;
    printf("\nAverage Waiting Time = %f",avgwt);
    printf("\nAverage Turnaround Time = %f\n",avgtat);
}
```

OUTPUT-


Activities
Terminal
Jun 26 00:39
tanya@tanya-VirtualBox: ~/PES1UG19EC326/OS_week4
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ gcc -o ex1 ex1.c
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ ./ex1
Enter number of jobs: 4
Enter the Burst Time of 1 Process: 4
Enter the Burst Time of 2 Process: 7
Enter the Burst Time of 3 Process: 8
Enter the Burst Time of 4 Process: 2
Job Burst Time Waiting Time Turn around Time
4 2 0 2
1 4 2 6
2 7 6 13
3 8 13 21
Average Waiting Time = 5.250000
Average Turnaround Time = 10.500000
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$


Activities
Terminal
Jun 23 00:29
tanya@tanya-VirtualBox: ~/PES1UG19EC326/OS_week4
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ gcc -o ex1 ex1.c
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ ./ex1
Enter number of jobs: 4
Enter the Burst Time of 1 Process: 23
Enter the Burst Time of 2 Process: 2
Enter the Burst Time of 3 Process: 7
Enter the Burst Time of 4 Process: 30
Job Burst Time Waiting Time Turn around Time
pros 2 2 0 2
pros 3 7 2 9
pros 1 23 9 32
pros 4 30 32 62
Average Waiting Time = 10.750000
Average Turnaround Time = 26.250000
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$

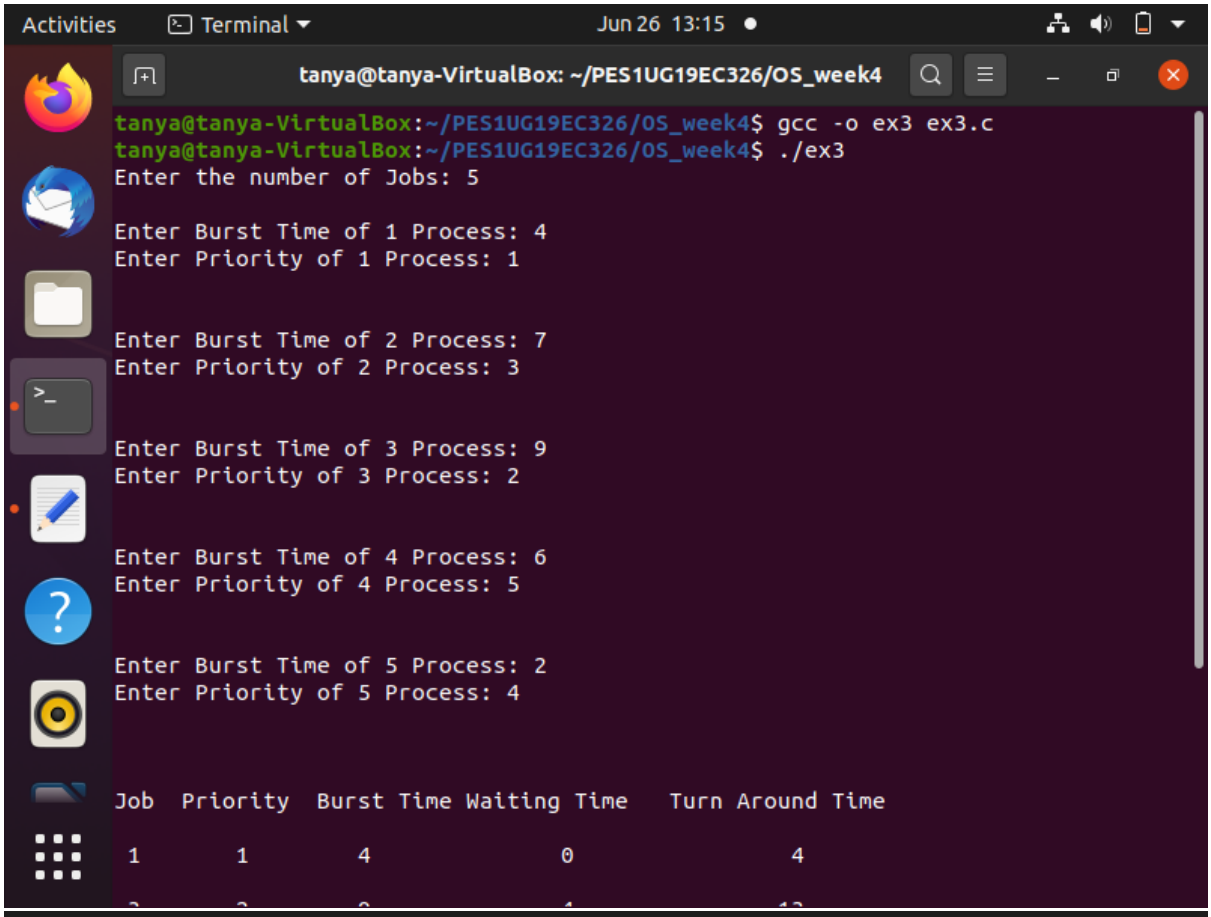
b)

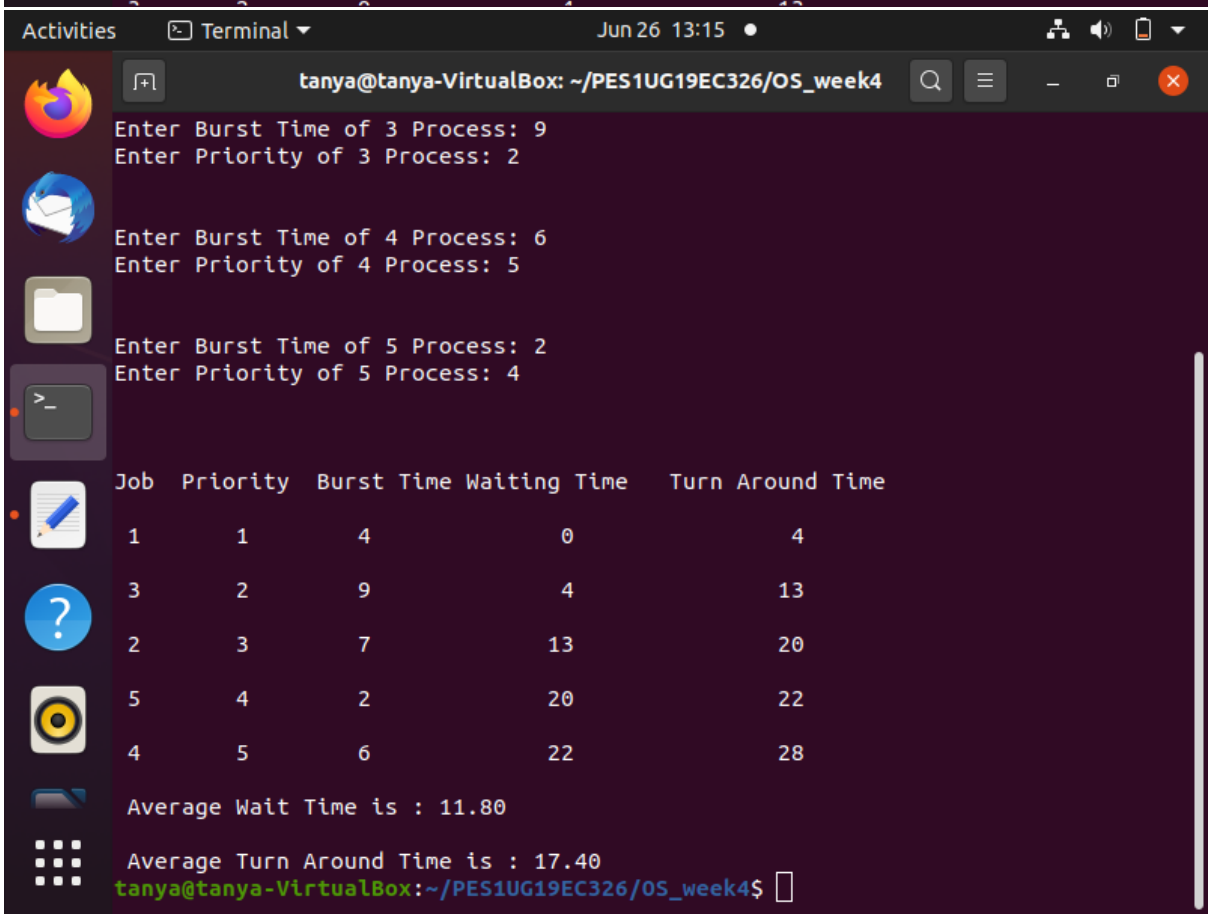
```
#include<stdio.h>
void main()
{
  int x,n,p[10],pp[10],pt[10],w[10],t[10],i;
  float avgwt,avgtat;
  printf("Enter the number of Jobs: ");
  scanf("%d",&n);
  for(i=0;i<n;i++)
   {
     printf("\nEnter Burst Time of %d Process: ", i+1);
     scanf("%d",&pt[i]);
     printf("Enter Priority of %d Process: ", i+1);
     scanf("%d",&pp[i]);
     printf("\n");
     p[i]=i+1;
   }
 for(i=0;i<n-1;i++)
  {
    for(int j=i+1;j<n;j++)
    {
      if(pp[i]>pp[j])
      {
        x=pp[i];
        pp[i]=pp[j];
        pp[j]=x;
        x=pt[i];
        pt[i]=pt[j];
        pt[j]=x;
        x=p[i];
        p[i]=p[j];
```

```
        p[j]=x;
      }
   }
}
w[0]=0;
avgwt=0;
t[0]=pt[0];
avgtat=t[0];
for(i=1;i<n;i++)
 {
   w[i]=t[i-1];
   avgwt+=w[i];
   t[i]=w[i]+pt[i];
   avgtat+=t[i];
 }
printf("\n\nJob  Priority  Burst Time Waiting Time   Turn Around Time \n");
for(i=0;i<n;i++)
printf("\n%2d \t%2d\t %2d\t\t%2d\t\t %2d \n",p[i],pp[i],pt[i],w[i],t[i]);
avgwt/=n;
avgtat/=n;
printf("\n Average Wait Time is : %.2f\n",avgwt);
printf("\n Average Turn Around Time is : %.2f \n",avgtat);
}
```

// Waiting time for process(n)= waiting time of process (n-1) + Burst time of process(n-1)
// Turn around time for Process(n)= waiting time of Process(n)+ Burst time for process(n)
// Average waiting time = Total waiting Time / Number of process
// Average Turnaround time = Total Turnaround Time / Number of process

OUTPUT-


Activities
Terminal
Jun 26 13:15
tanya@tanya-VirtualBox: ~/PES1UG19EC326/OS_week4
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ gcc -o ex3 ex3.c
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$ ./ex3
Enter the number of Jobs: 5
Enter Burst Time of 1 Process: 4
Enter Priority of 1 Process: 1
Enter Burst Time of 2 Process: 7
Enter Priority of 2 Process: 3
Enter Burst Time of 3 Process: 9
Enter Priority of 3 Process: 2
Enter Burst Time of 4 Process: 6
Enter Priority of 4 Process: 5
Enter Burst Time of 5 Process: 2
Enter Priority of 5 Process: 4
Job Priority Burst Time Waiting Time Turn Around Time
1 1 4 0 4


Activities
Terminal
Jun 26 13:15
tanya@tanya-VirtualBox: ~/PES1UG19EC326/OS_week4
Enter Burst Time of 3 Process: 9
Enter Priority of 3 Process: 2
Enter Burst Time of 4 Process: 6
Enter Priority of 4 Process: 5
Enter Burst Time of 5 Process: 2
Enter Priority of 5 Process: 4
Job Priority Burst Time Waiting Time Turn Around Time
1 1 4 0 4
3 2 9 4 13
2 3 7 13 20
5 4 2 20 22
4 5 6 22 28
Average Wait Time is : 11.80
Average Turn Around Time is : 17.40
tanya@tanya-VirtualBox:~/PES1UG19EC326/OS_week4$