ASSIGNMENT NO:6 **DATE:16/03/2016**

PROGRAM TITLE:Implement Shortest Job First Scheduling.

THEORY:

Shortest Job First Scheduling schedules the processes to be executed in the ascending order of their burst time. Waiting time of a process is the amount of time it has to wait in the waiting queue. Turnaround time equals the waiting time of the process added to its burst time.

PROGRAM CODE:

```
#Shell Program to perform Shortest Job First Scheduling
read -p "Enter the no. of processes::" n
i=0
while [ $i -lt $n ]
do
      echo -n "Enter the burst time for the process" `expr $i + 1` ":"
      read b[$i]
      a[$i]=`expr $i + 1`
      i=`expr $i + 1`
done
flag=1
m=`expr $n - 1`
while [ $flag -eq 1 ]
do
      flag=0
      i=0
      while [ $i -lt $m ]
      do
            j=`expr $i + 1`
            if [ ${b[$i]} -gt ${b[$j]} ]
            then
                  temp=${b[$i]}
                  b[$i]=${b[$j]}
                  b[$j]=$temp
                  temp=${a[$i]}
                  a[$i]=${a[$j]}
                  a[$j]=$temp
                  flag=1
            fi
            i=`expr $i + 1`
      done
done
echo "PROCESS | BURST TIME | WAITING TIME | TURNAROUND TIME"
i=0
w=0
t=0
sw=0
st=0
while [ $i -lt $n ]
do
      t=`expr $t + ${b[$i]}`
      st=`expr $st + $t`
      sw=`expr $sw + $w`
      echo -e "P"${a[$i]}"\t\t"${b[$i]}"\t\t"$w"\t\t"$t
```

```
      w=`expr $w + ${b[$i]}`
      i=`expr $i + 1`
done
echo "The average waiting time:" `expr "scale=2;$sw / $n"|bc` "ms"
echo "The average turnaround time:" `expr "scale=2;$st / $n"|bc` "ms"
```

OUTPUT:

```
Enter the no. of processes::3
Enter the burst time for the process 1 :34
Enter the burst time for the process 2 :12
Enter the burst time for the process 3 :14
PROCESS | BURST TIME | WAITING TIME | TURNAROUND TIME
P2         12         0          12
P3         14         12         26
P1         34         26         60
The average waiting time: 12.66 ms
The average turnaround time: 32.66 ms
```

DISCUSSION:

1. The burst time of each process has to be specified from before.
2. The processes are sorted according to their burst time using Bubble Sort.