**UIT2512---Operating Systems Practices Lab**

# Implementation of FCFS CPU Scheduling Algorithm in Python

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# CODE:

n=int(input("Enter the no.of proceses:"))

at=[]

bt=[]

pid=[]

for i in range(n):

  at.append(int(input(f"Enter the arrival time of processor {i+1}: ")))

  bt.append(int(input(f"Enter the burst time of processor {i+1}: ")))

  pid.append(f"P{i+1}")

print()

print("PID  AT  BT")

for i in range(n):

   print(f"P{i+1}   ", at[i], " ",bt[i])

d={}

for j in range(n):

  d[f"P{j+1}"]=[at[j],bt[j]]

print()

overhead=int(input("Enter the no.of overhead unit: "))

print()

d = sorted(d.items(), key=lambda item: item[1][0])

CT=[]

idle=0

st=""

for i in range(len(d)):

    if(i==0):

       v=d[i][1][1]

       CT.append(v)

       st+=("|"+"\_"\*v+str(d[i][0])+"|")

    elif CT[i-1]<d[i][1][0]:

       v1=CT[i-1] + d[i][1][1]

       idle+=((d[i][1][0]-CT[i-1])+overhead)

       CT.append(idle+ v1)

       st+=("\*"\*idle+"|")

       st+=("\_"\*(d[i][1][1])+str(d[i][0])+"|")

    else:

       v2=(CT[i-1] + d[i][1][1])

       CT.append(v2)

       st+=("\*"\*overhead+"|")

       st+=("\_"\*(d[i][1][1])+str(d[i][0])+"|")

TT = []

for i in range(len(d)):

    TT.append(CT[i] - d[i][1][0])

WT = []

for i in range(len(d)):

    WT.append(TT[i] - d[i][1][1])

AWT = 0

for i in WT:

    AWT +=i

AWT = (AWT/n)

ATT = 0

for i in TT:

    ATT +=i

ATT = (ATT/n)

print("GANTT CHART"+"\n")

print(st+"\n")

print("PID    AT        BT      CT       TT          WT   ")

print("---------------------------------------------------")

for p in pid:

 for i in range(len(d)):

   if p==d[i][0]:

      print(d[i][0],"      ",d[i][1][0],"     ",d[i][1][1],"     ",CT[i],"      ",TT[i],"        ",WT[i],"     ")

print("Average Waiting Time: ",AWT)

print("Average Turnaround Time: ",ATT)

# CODE:

1. Question 1 (Tutorial)

A screenshot of a computer

Description automatically generated

A black and white screen with numbers and text

Description automatically generated

1. Question 2 (Tutorial)

A screenshot of a computer program

Description automatically generated

A black screen with white text

Description automatically generated