**Experiment 1)**

**FCFS CPU Scheduling**

1.a) Write a Program to implement FCFS CPU Scheduling algorithm.

**Aim:** To implement FCFS CPU Scheduling Program

**PROGRAM:**

# include<stdio.h>

struct fcfs

{

int at,st,str,ft,tat,wt;

}p[50];

main()

{

int i,j,n;

float atrt=0,awt=0;

clrscr();

printf("\nEnter the number of processes:");

scanf("%d",&n);

printf("\nEnter the arrival times of the processes");

for(i=0;i<n;i++)

scanf("%d",&p[i].at);

printf("\nEnter the service times of the processes");

for(i=0;i<n;i++)

scanf("%d",&p[i].st);

p[0].str=p[0].at;

for(j=0;j<n;j++)

{

p[j].ft=p[j].str+p[j].st;

p[j+1].str=p[j].ft;

}

for(i=0;i<n;i++)

{

p[i].tat=p[i].ft-p[i].at;

atrt=atrt+p[i].tat;

p[i].wt=p[i].str-p[i].at;

awt=awt+p[i].wt;

}

printf("process\tAT\tST\tSTR\tFT\tTAT\tWT\n");

for(i=0;i<n;i++)

{

printf("p%d\t%d\t%d\t%d\t%d\t%d\t%d\n",i,p[i].at,p[i].st,p[i].str,p[i].ft,p[i].tat,p[i].wt);

}

atrt=atrt/n;

awt=awt/n;

printf("Average turn around time=%f",atrt);

printf("Average waiting time=%f",awt);

getch();

}

**Ex.No: 1.b)**

**SJF CPU Scheduling**

1.b) Write a Program to implement SJF CPU Scheduling algorithm.

**Aim:** To implement SJF CPU Scheduling Program

**PROGRAM:**

#include<stdio.h>

#include<conio.h>

#include<string.h>

void main()

{

int et[20],at[10],n,i,j,temp,st[10],ft[10],wt[10],ta[10];

int totwt=0,totta=0;

float awt,ata;

char pn[10][10],t[10];

clrscr();

printf("Enter the number of process:");

scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("Enter process name, arrival time & service time:");

flushall();

scanf("%s%d%d",pn[i],&at[i],&et[i]);

}

for(i=0;i<n;i++)

for(j=0;j<n;j++)

{

if(et[i]<et[j])

{

temp=at[i];

at[i]=at[j];

at[j]=temp;

temp=et[i];

et[i]=et[j];

et[j]=temp;

strcpy(t,pn[i]);

strcpy(pn[i],pn[j]);

strcpy(pn[j],t);

}

}

for(i=0;i<n;i++)

{

if(i==0)

st[i]=at[i];

else

st[i]=ft[i-1];

wt[i]=st[i]-at[i];

ft[i]=st[i]+et[i];

ta[i]=ft[i]-at[i];

totwt+=wt[i];

totta+=ta[i];

}

awt=(float)totwt/n;

ata=(float)totta/n;

printf("\nPname \t arrivaltime \t servicetime \t waitingtime \t tatime");

for(i=0;i<n;i++)

printf("\n%s\t%5d\t\t%5d\t\t%5d\t\t%5d",pn[i],at[i],et[i],wt[i],ta[i]);

printf("\nAverage waiting time is:%f",awt);

printf("\nAverage turnaroundtime is:%f",ata);

getch();

}

**Experiment 2**

**2.a) Write a Program to implement Priority CPU Scheduling algorithm.**

**Aim: To implement Priortiy CPU Scheduling Program**

**PROGRAM:**

#include<stdio.h>

#include<conio.h>

#include<string.h>

void main()

{

int et[20],at[10],n,i,j,temp,p[10],st[10],ft[10],wt[10],ta[10];

int totwt=0,totta=0;

float awt,ata;

char pn[10][10],t[10];

clrscr();

printf("Enter the number of process:");

scanf("%d",&n);

for(i=0;i<n;i++)

{

printf("Enter process name, arrival time, execution time & priority:");

flushall();

scanf("%s%d%d%d",pn[i],&at[i],&et[i],&p[i]);

}

for(i=0;i<n;i++)

for(j=0;j<n;j++)

{

if(p[i]<p[j])

{

temp=p[i];

p[i]=p[j];

p[j]=temp;

temp=at[i];

at[i]=at[j];

at[j]=temp;

temp=et[i];

et[i]=et[j];

et[j]=temp;

strcpy(t,pn[i]);

strcpy(pn[i],pn[j]);

strcpy(pn[j],t);

}

}

for(i=0;i<n;i++)

{

if(i==0)

{

st[i]=at[i];

wt[i]=st[i]-at[i];

ft[i]=st[i]+et[i];

ta[i]=ft[i]-at[i];

}

else

{

st[i]=ft[i-1];

wt[i]=st[i]-at[i];

ft[i]=st[i]+et[i];

ta[i]=ft[i]-at[i];

}

totwt+=wt[i];

totta+=ta[i];

}

awt=(float)totwt/n;

ata=(float)totta/n;

printf("\nPname \t arrivaltime \t executiontime \t priority \t waitingtime \t tatime");

for(i=0;i<n;i++)

printf("\n%s\t%5d\t\t%5d\t\t%5d\t\t%5d\t\t%5d",pn[i],at[i],et[i],p[i],wt[i],ta[i]);

printf("\nAverage waiting time is:%f",awt);

printf("\nAverage turnaroundtime is:%f",ata);

getch();

}