**Week-7**

**MEMORY MANAGEMENT AND ALLOCATION TECHNIQUES**

1. Write a C Program to implement the Memory Fixed Partitioning Technique (MFT) algorithm.

2. Write a C program to implement the Memory Variable Partitioning Technique (MVT) algorithm

#include<stdio.h>

void main()

{

int ms, bs, nob, ef,n,

mp[10],tif=0; int i,p=0;

printf("Enter the total memory available (in Bytes) -- ");

scanf("%d",&ms);

printf("Enter the block size (in Bytes) -- ");

scanf("%d", &bs);

nob=ms/bs;

ef=ms - nob\*bs;

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

scanf("%d",&n);

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

{

printf("Enter memory required for process %d (in Bytes)-- ",i+1);

scanf("%d",&mp[i]);

}

printf("\nNo. of Blocks available in memory--%d",nob);

printf("\n\nPROCESS\tMEMORYREQUIRED\tALLOCATED\tINTERNAL

FRAGMENTATION");

for(i=0;i<n && p<nob;i++)

{

printf("\n %d\t\t%d",i+1,mp[i]);

if(mp[i] > bs)

printf("\t\tNO\t\t---");

else

{

printf("\t\tYES\t%d",bs-mp[i]);

tif = tif + bs-mp[i];

p++;

}

}

if(i<n)

printf("\nMemory is Full, Remaining Processes cannot be accomodated");

printf("\n\nTotal Internal Fragmentation is %d",tif);

printf("\nTotal External Fragmentation is %d",ef);

}

**INPUT:**

Enter the total memory available (in Bytes) -- 1000

Enter the block size (in Bytes)-- 300

Enter the number of processes – 5

Enter memory required for process 1 (in Bytes) -- 275

Enter memory required for process 2 (in Bytes) -- 400

Enter memory required for process 3 (in Bytes) -- 290

Enter memory required for process 4 (in Bytes) -- 293

Enter memory required for process 5 (in Bytes) -- 100

No. of Blocks available in memory -- 3

**MEMORY VARIABLE PARTIONING TYPE (MVT)**

#include<stdio.h>

Void main()

{

int ms,mp[10],i,

temp,n=0; char ch = 'y';

clrscr();

printf("\nEnter the total memory available (in Bytes)-- ");

scanf("%d",&ms);

temp=ms;

for(i=0;ch=='y';i++,n++)

{

printf("\nEnter memory required for process %d (in Bytes) -- ",i+1);

scanf("%d",&mp[i]);

if(mp[i]<=temp)

{

printf("\nMemory is allocated for Process %d ",i+1);

temp = temp - mp[i];

}

else

{

printf("\nMemory is Full"); break;

}

printf("\nDo you want to continue(y/n) -- ");

scanf(" %c", &ch);

}

printf("\n\nTotal Memory Available -- %d", ms);

printf("\n\n\tPROCESS\t\t MEMORY ALLOCATED ");

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

printf("\n \t%d\t\t%d",i+1,mp[i]);

printf("\n\nTotal Memory Allocated is %d",ms-temp);

printf("\nTotal External Fragmentation is %d",temp);

}

**OUTPUT:**

Enter the total memory available (in Bytes) – 1000

Enter memory required for process 1 (in Bytes) – 400

Memory is allocated for Process 1

Do you want to continue(y/n) -- y

Enter memory required for process 2 (in Bytes) -- 275

Memory is allocated for Process 2

Do you want to continue(y/n) – y

Enter memory required for process 3 (in Bytes) – 550