LAB-02

Implemenation of Max MinTask Scheduling algorithm for Load Balance :

Code:

```
#include <stdio.h>
#include <limits.h>
int main()
{

int nT, nM;
printf("\nEnter number of machines and tasks : \n");
scanf("%d%d", &nM, &nT);
int maxMax[nM][nT];
int tmp[nM][nT];
int makespan = 0;
printf("\nFill Data\n");
for (int i = 0; i < nM; i++)
for (int j = 0; j < nT; j++)
{
scanf("%d", &maxMax[i][j]);
tmp[i][j] = maxMax[i][j];
}
printf("\nOriginal Data\n");
for (int i = 0; i < nM; i++)
{
for (int j = 0; j < nT; j++)
printf("%d", maxMax[i][j]);
printf("\n");
}
int resultTask[nT];
int resultMachine[nT];
int resultTime[nT];
int ptr = -1;
while (ptr < nT - 1)
{
int time[nT], machine[nT];
for (int j = 0; j < nT; j++)
{
int maximum = INT_MIN;
int pos = -1;
```

```
for (int i = 0; i < nM; i++)
{
if (maxMax[i][j] > maximum)
{
maximum = maxMax[i][j];
pos = i;
}
}
time[j] = maximum;
machine[j] = pos;
}
int maximum = INT_MIN;
int pos = -1;
for (int j = 0; j < nT; j++)
{
if (time[j] > maximum)
{
maximum = time[j];
pos = j;
}
}
resultTask[++ptr] = pos;
resultMachine[ptr] = machine[pos];
resultTime[ptr] = tmp[machine[pos]][pos];
if (maximum > makespan)
makespan = maximum;
for (int i = 0; i < nM; i++)
{
for (int j = 0; j < nT; j++)
{
if (j == resultTask[ptr])
maxMax[i][j] = INT_MIN;
else if (i == resultMachine[ptr] && maxMax[i][j] != INT_MIN)
maxMax[i][j] += maximum;
else
continue;
}
}
}
printf('\nScheduled Task are :\n');
for (int i = 0; i < nT; i++)
{
```

```
printf('\nTask %d Runs on Machine %d with Time %d units\n', resultTask[i] + 1, resultMachine[i] +
1, resultTime[i]);
}
printf('\nMakespan time : %d units\n', makespan);
return 0;
}
```

Output: