1905330
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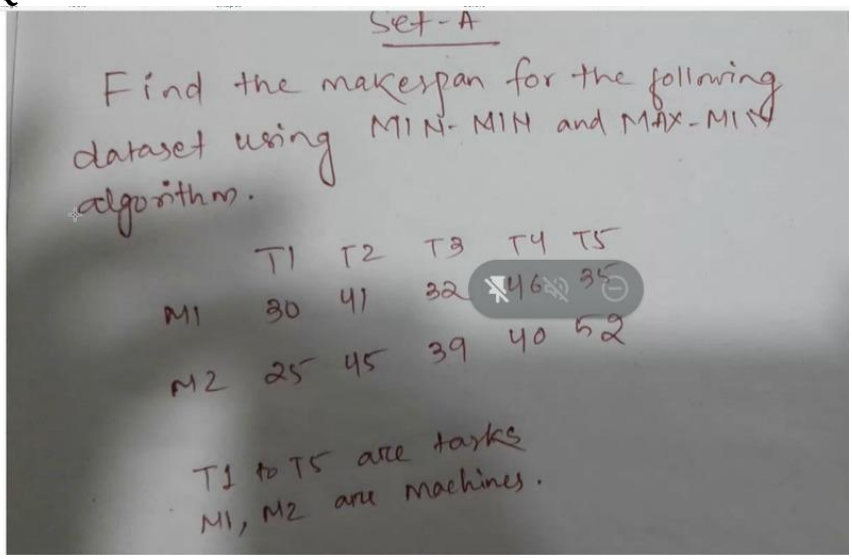
CC LAB 1-3

Q1:



Ans:

min-min.c

```
#include <stdio.h>
int main(){
   int n, m;
   printf("Enter No of Processes : ");
   scanf("%d", &n);
   printf("Enter No of Machines : ");
   scanf("%d", &m);
   int arr[m][n];
   for (int i = 0; i < m; i++){
      printf("\nEnter Times for Machine-%d : ", i);
      for (int j = 0; j < n; j++){
         scanf("%d", &arr[i][j]);
      }
   }
   // MIN MIN ALGO
   printf("\n\nSequence  : \n");
   int final_time[m];
   for (int tc = 0; tc < n; tc++) {
      int machine = -1, time = 1e5, task_no = -1;
      for (int i = 0; i < m; i++){
         for (int j = 0; j < n; j++){
            if (arr[i][j] < time && arr[i][j] != -1){
               time = arr[i][j];
               machine = i;
               task_no = j;
```

```
            }
          }
        }
        final_time[machine] = time;
        printf("Task : %d Machine : %d Time : %d \n", task_no, machine, time);
        for (int i = 0; i < m; i++){
          for (int j = 0; j < n; j++){
            if (j == task_no){
              arr[i][j] = -1;
            }
            else if (i == machine && arr[i][j] != -1){
              arr[i][j] = arr[i][j] + time;
            }
          }
        }
      }
      int res = -1000;
      for (int i = 0; i < m; i++){
        if (final_time[i] > res)
        {
          res = final_time[i];
        }
      }
      printf("\nMAKESPAN : %d", res);
      return 0;
}
```

OUTPUT:

```
PS C:\Users\KIIT\Desktop\Assignments\CC LAB\sessional> gcc min-min.c
PS C:\Users\KIIT\Desktop\Assignments\CC LAB\sessional> ./a.exe
Enter No of Processes : 5
Enter No of Machines : 2

Enter Times for Machine-0 : 30 41 32 46 35

Enter Times for Machine-1 : 25 45 39 40 52


Sequence  :
Task : 0 Machine : 1 Time : 25
Task : 2 Machine : 0 Time : 32
Task : 3 Machine : 1 Time : 65
Task : 4 Machine : 0 Time : 67
Task : 1 Machine : 1 Time : 135

MAKESPAN : 135
```

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max-min.c

```
#include <stdio.h>

int main()
{
   int n, m;
   printf("Enter No of Processes : ");
   scanf("%d", &n);
   printf("Enter No of Machines : ");
   scanf("%d", &m);

   int arr[m][n];
   for (int i = 0; i < m; i++)
   {
      printf("\nEnter Times for Machine-%d : ", i);
      for (int j = 0; j < n; j++)
      {
         scanf("%d", &arr[i][j]);
      }
   }

   // MIN MAX ALGO
   int final_time[m];
   printf("\n\nSequence  : \n\n");
   for (int tc = 0; tc < n; tc++)
   {
      int machine = -1, time = -1000, task_no = -1;
      for (int i = 0; i < n; i++)
      {
         if (arr[0][i] == -1)
            continue;
         int t = 1e5, task = i, ma = -1;
         for (int j = 0; j < m; j++)
         {

            if (arr[j][i] < t)
            {
               t = arr[j][i];
               ma = j;
            }
         }
         if (t > time)
         {
            time = t;
            task_no = task;
            machine = ma;
         }
      }
```

```
      final_time[machine] = time;
      printf("Task : %d Machine : %d Time : %d \n", task_no, machine, time);
      for (int i = 0; i < m; i++)
      {
        for (int j = 0; j < n; j++)
        {
          if (j == task_no)
          {
            arr[i][j] = -1;
          }
          else if (i == machine && arr[i][j] != -1)
          {
            arr[i][j] = arr[i][j] + time;
          }
        }
      }
    }

    int res = -1000;
    for (int i = 0; i < m; i++)
    {
      if (final_time[i] > res)
      {
        res = final_time[i];
      }
    }

    printf("\nMAKESPAN : %d", res);
    return 0;
}
```

OUTPUT:

```
PS C:\Users\KIIT\Desktop\Assignments\CC LAB\sessional> gcc min-max.c
PS C:\Users\KIIT\Desktop\Assignments\CC LAB\sessional> ./a.exe
Enter No of Processes : 5
Enter No of Machines : 2

Enter Times for Machine-0 : 30 41 32 46 35

Enter Times for Machine-1 : 25 45 39 40 52


Sequence  :

Task : 1 Machine : 0 Time : 41
Task : 4 Machine : 1 Time : 52
Task : 3 Machine : 0 Time : 87
Task : 2 Machine : 1 Time : 91
Task : 0 Machine : 0 Time : 158

MAKESPAN : 158
```