INCHARA B M(4PM22CS046)

‘4A’

Given a collection of intervals, merge all overlapping interval

Input: [[1, 3], [2, 6], [8, 10], [15, 18]]

Output: [[1, 6], [8, 10], [15, 18]]

Coding part :

```
#include <stdio.h>


// Interval structure
typedef struct {
   int start;
   int end;
} Interval;


// Function to merge overlapping intervals
void mergeIntervals(Interval arr[], int n)
{
   // Traverse all intervals
   for (int i = 0; i < n; i++)
      for (int j = i + 1; j < n; j++)
      {
         if (arr[i].end >= arr[j].start && arr[i].start <= arr[j].end)
         {
```

```
            arr[i].start = (arr[i].start < arr[j].start) ? arr[i].start : arr[j].start;
            arr[i].end = (arr[i].end > arr[j].end) ? arr[i].end : arr[j].end;
            arr[j].start = -1;// Mark merged interval as deleted
            arr[j].end=-1;// Mark merged interval as deleted
        }
      }


   // Print merged intervals
   printf("Merged intervals:\n");
   for (int i = 0; i < n; i++)
   {
      if (arr[i].start != -1)
         printf("[%d, %d] ", arr[i].start, arr[i].end);

   }
}

int main()
{
   Interval arr[] = {{1, 3}, {2,6}, {8, 10}, {15, 18}};
   int n = 4;
   mergeIntervals(arr, n);
   return 0;
}
```

OUTPUT:

[1, 6] [8, 10] [15, 18]