Prob 1.Maximum and minimum of an array using minimum number of comparisons.

Solve:

```
#include <stdio.h>
struct Pair {
    int min;
    int max;
};
struct Pair getMinMax(int arr[], int low, int high) {
    struct Pair minmax, mml, mmr;
    int mid;
    if (low == high) {
        minmax.max = arr[low];
        minmax.min = arr[low];
        return minmax;
    }
    if (high == low + 1) {
        if (arr[low] > arr[high]) {
            minmax.max = arr[low];
            minmax.min = arr[high];
        } else {
            minmax.max = arr[high];
            minmax.min = arr[low];
        }
        return minmax;
    }
    mid = (low + high) / 2;
    mml = getMinMax(arr, low, mid);
    mmr = getMinMax(arr, mid + 1, high);
    if (mml.min < mmr.min) {
        minmax.min = mml.min;
    } else {
        minmax.min = mmr.min;
    }
    if (mml.max > mmr.max) {
        minmax.max = mml.max;
    } else {
        minmax.max = mmr.max;
    }

    return minmax;
}

int main() {
    int arr[] = {1000, 11, 445, 1, 330, 3000};
    int n = sizeof(arr) / sizeof(arr[0]);

    struct Pair minmax = getMinMax(arr, 0, n - 1);

    printf("Minimum element is: %d\n", minmax.min);
    printf("Maximum element is: %d\n", minmax.max);

    return 0;
}
```