Finding the Minimum and Maximum

For finding minimum and maximum no number out of the given array there are 3 approaches :-

1) First Sort the array & then the element at index 0 is minimum element & element at last index will give you maximum element

2) Iterative go on checking each value from the array to get minimum & maximum value.

3) MiniMax Algorithm.

MiniMax Algorithm

1) Divide the given into sub arrays till we get smallest possible binary values in one sub array.

Let's take an example having following values,

82	36	49	91	12	14	6	76	92	55

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| 82 | 36 | 49 | 91 | 12 | 14 | 6 | 76 | 92 | 55 |

| 82 | 36 | 49 | 91 | 12 | | 14 | 6 | 76 | 92 | 55 |

| 82 | 36 | 49 | | 91 | 12 | | 14 | 6 | 76 | | 92 | 55 |

| 82 | 36 | | 49 | | 14 | 6 | | 76 |
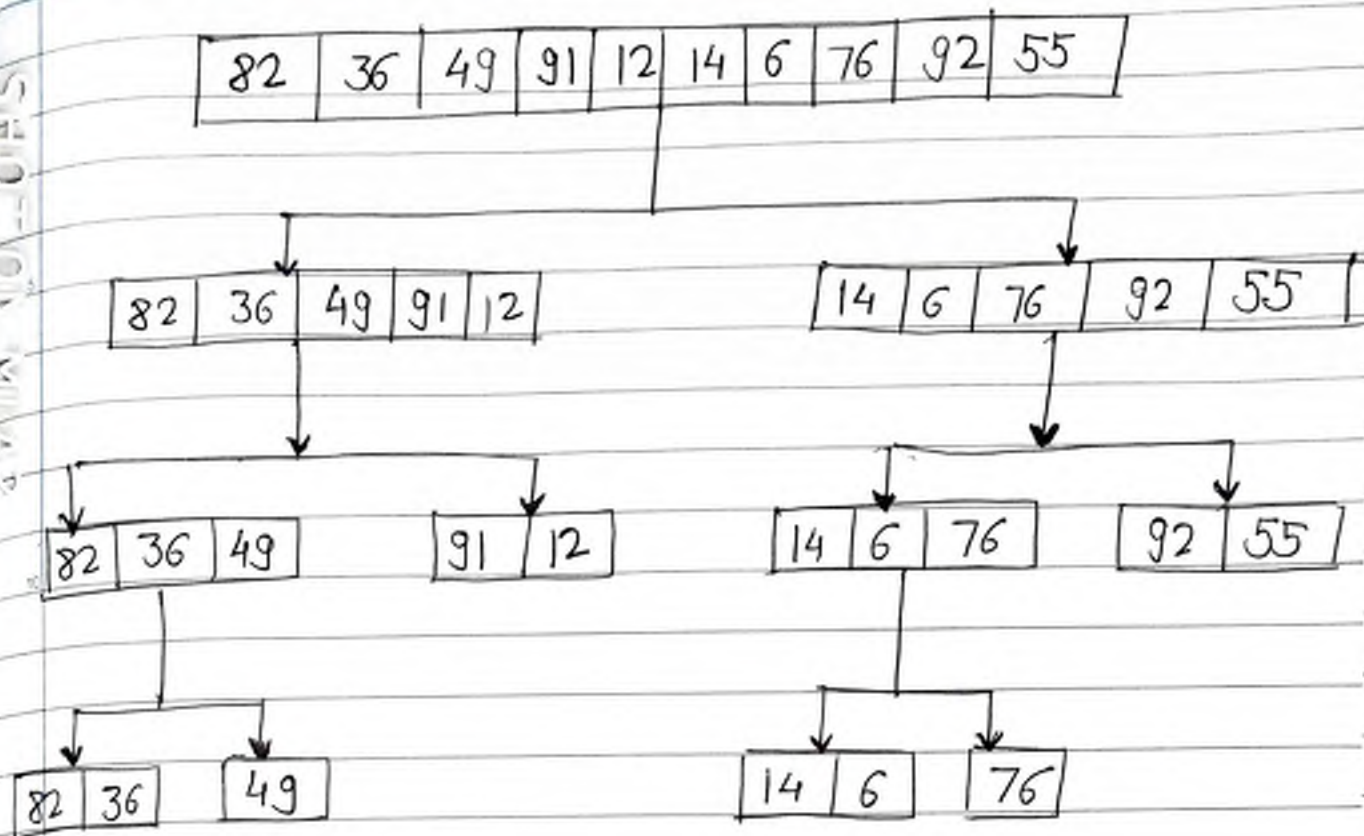
Step 2 :- After dividing, the sub arrays we have received are as follows

| 82 | 36 | | 49 | 49 | | 91 | 12 | | 14 | 6 | | 76 | 76 | | 92 | 55 |
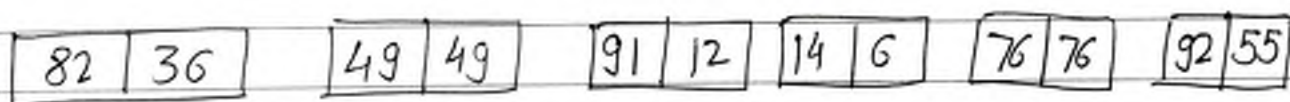
Now we go on comparing 2 subarrays and get minimum & maximum values.

Let's compare | 76 | 76 | | 92 | 55 |

Max	92
Min	55

| 76 | 76 | | 92 | 55 |

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Then | 14 | 6 | & . | Max | 92 | are compared
                            | Min | 55 |

| Max | 92 |
| Min | 6 |

| Max | 92 |
| Min | 55 |

| 14 | 6 | | 76 | 76 | | 92 | 55 |
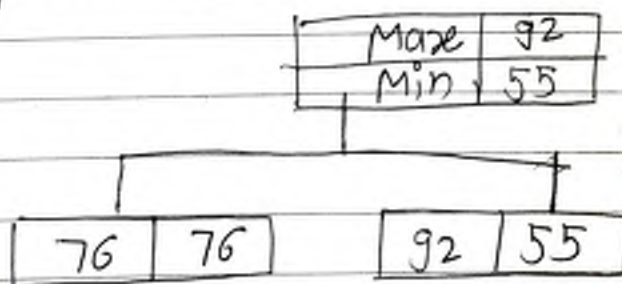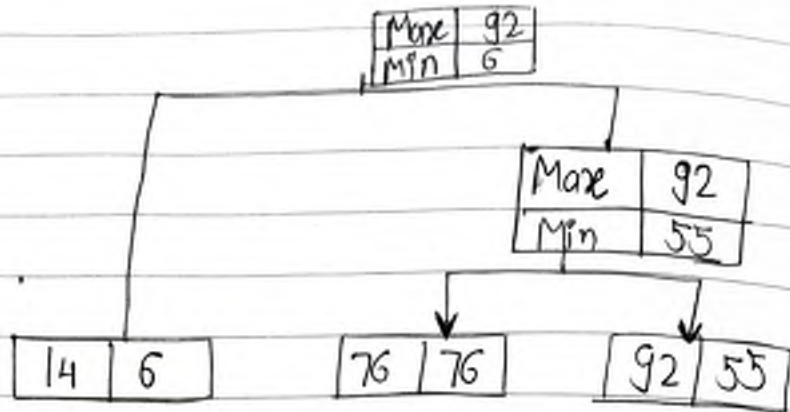
If we continue in this manner we get Min & max values as shown in figure below.

| Max | 92 |
| Min | 6 |

| Max | 92 |
| Min | 6 |

| Max | 92 |
| Min | 6 |

| Max | 92 |
| Min | 6 |

| Max | 92 |
| Min | 55 |

| 82 | 36 | | 49 | 49 | | 91 | 12 | | 14 | 6 | | 76 | 76 | | 92 | 55 |
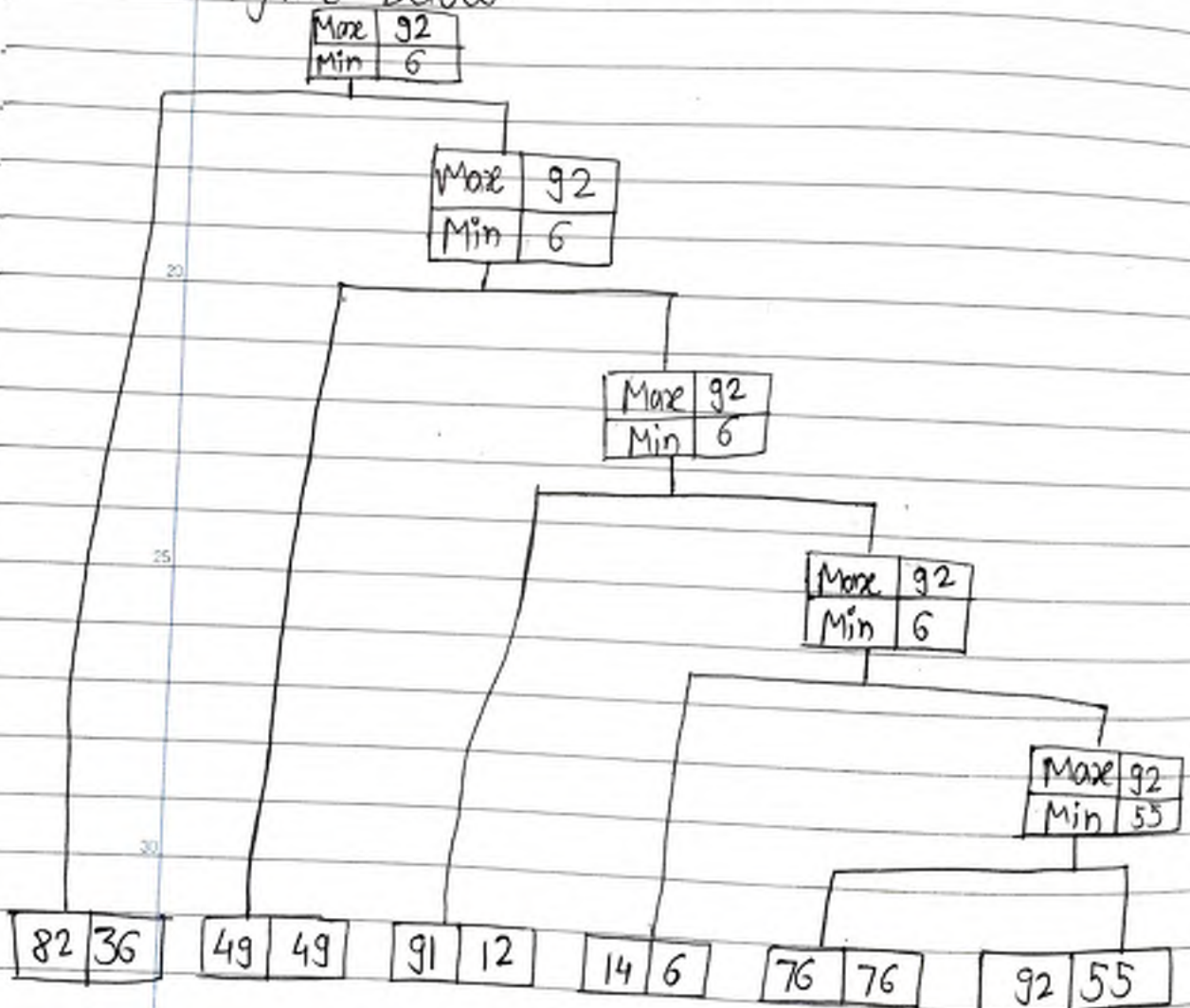
```
int   min = 0
int   max = 99999

int  getLarger(a,b)
{
        if b > a :
                return b
        else :
                return a
}

int    getSmaller(a,b)
{
        if   b < a :
                return b
        else
                return a
}

def  MinMax(array, start, end):
{
    if end - start > 2:        // Divide part
            MinMax(array, start, (start + end)/2)
            MinMax(array, (start + end)/2, end)

    else:
            array  = array[start:end]
            if end - start == 1:
                    array.append(array[0])
            max = getLarger(max, getLarger(array[0],
                                               array[1]))
```

min= getSmaller(min, getSmaller(array[0], array[1]))

```
void main()
{
    int array[10];
    int length = 10

    for(x=0; x<10; x++)
    {
        //accept nos from user &
        store in array
    }
    MinMax(array, 0, length)
}
```