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BE-A-25

Practical No 3: Implement Min, Max, Sum and Average operations using Parallel Reduction.

Code:

```
#include <iostream>

#include <vector>

#include <omp.h>

using namespace std;

int main() {

    vector<int> arr = {5, 3, 8, 4, 2, 7, 1, 6}; // Sample array

    int minVal = arr[0], maxVal = arr[0], sum = 0;

    double avg;

    #pragma omp parallel for reduction(min:minVal) reduction(max:maxVal) reduction(+:sum)

    for (int i = 0; i < arr.size(); i++) {

        if (arr[i] < minVal) minVal = arr[i];

        if (arr[i] > maxVal) maxVal = arr[i];

        sum += arr[i];

    }

    avg = sum / (double)arr.size();

    cout << "Min: " << minVal << endl;

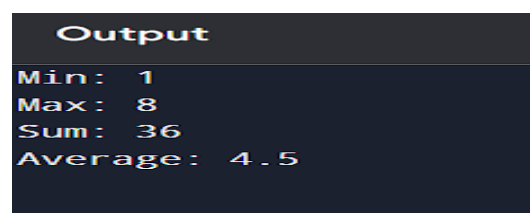
    cout << "Max: " << maxVal << endl;

    cout << "Sum: " << sum << endl;

    cout << "Average: " << avg << endl;

    return 0;

}
```

A screenshot of a terminal window showing the output of the C++ program. The output consists of four lines: "Min: 1", "Max: 8", "Sum: 36", and "Average: 4.5". The text is displayed in a light blue color on a dark background.

Output

Min: 1
Max: 8
Sum: 36
Average: 4.5

