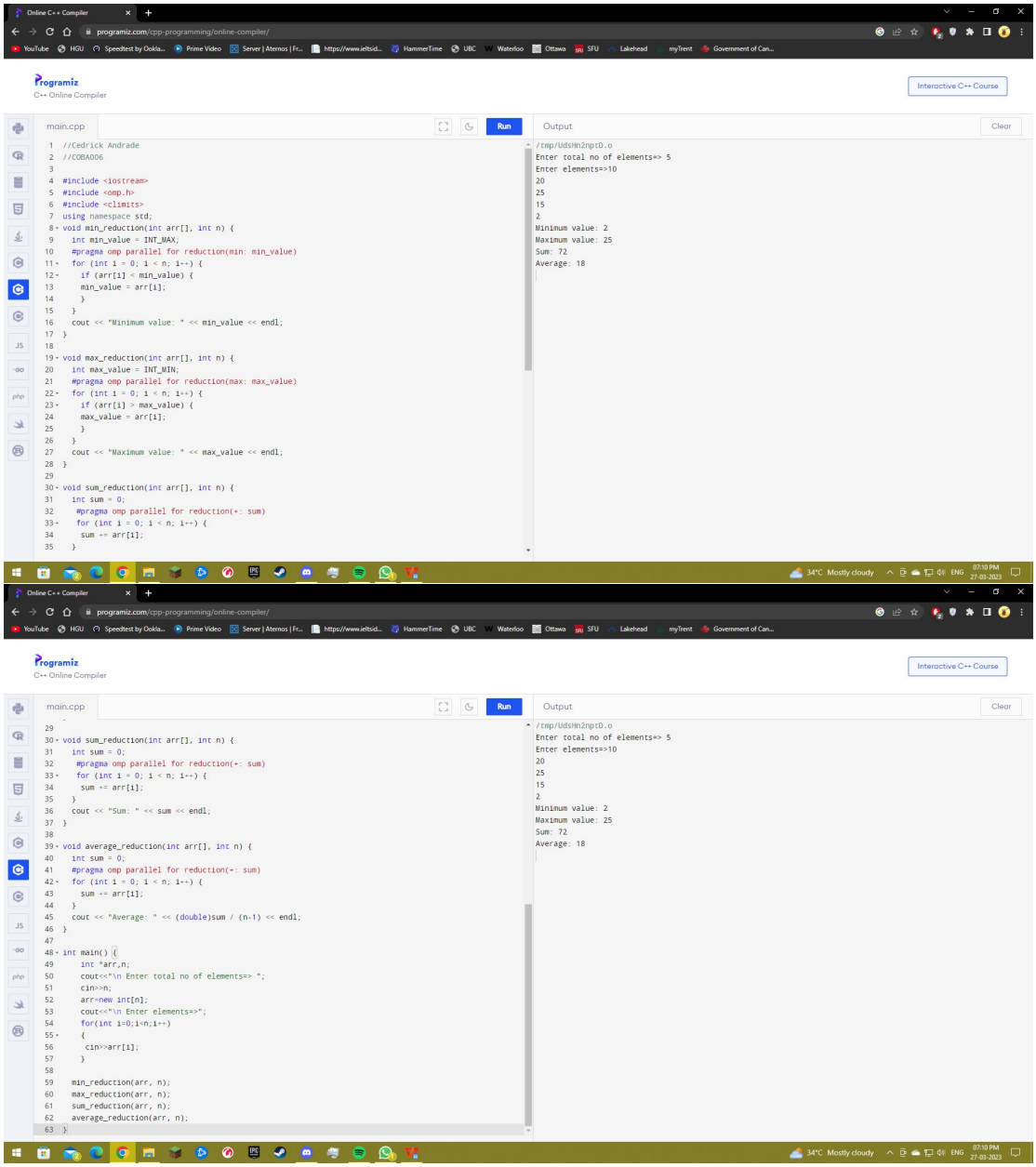
Cedrick Andrade
COBA006

Assignment 3



```
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#include <iostream>
#include <omp.h>
#include <climits>
using namespace std;
void min_reduction(int arr[], int n) {
  int min_value = INT_MAX;
  #pragma omp parallel for reduction(min: min_value)
  for (int i = 0; i < n; i++) {
    if (arr[i] < min_value) {
    min_value = arr[i];
    }
  }
  cout << "Minimum value: " << min_value << endl;
}

void max_reduction(int arr[], int n) {
  int max_value = INT_MIN;
  #pragma omp parallel for reduction(max: max_value)
  for (int i = 0; i < n; i++) {
    if (arr[i] > max_value) {
    max_value = arr[i];
    }
  }
  cout << "Maximum value: " << max_value << endl;
}

void sum_reduction(int arr[], int n) {
  int sum = 0;
   #pragma omp parallel for reduction(+: sum)
   for (int i = 0; i < n; i++) {
    sum += arr[i];
   }
  cout << "Sum: " << sum << endl;
}

void average_reduction(int arr[], int n) {
  int sum = 0;
  #pragma omp parallel for reduction(+: sum)
  for (int i = 0; i < n; i++) {
    sum += arr[i];
  }
  cout << "Average: " << (double)sum / (n-1) << endl;
}

int main() {
    int *arr,n;
    cout<<"\n Enter total no of elements=> ";
    cin>>n;
    arr=new int[n];
    cout<<"\n Enter elements=>";
    for(int i=0;i<n;i++)
    {
     cin>>arr[i];
    }

  min_reduction(arr, n);
  max_reduction(arr, n);
  sum_reduction(arr, n);
  average_reduction(arr, n);
}
```

```
/tmp/UdsHn2nptD.o
Enter total no of elements=> 5
Enter elements=>10
20
25
15
2
Minimum value: 2
Maximum value: 25
Sum: 72
Average: 18
```