Report on Labwork 1

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1 How you implement the conversion?

- I added *#pragma omp parallel* before the loop to convert from sequential CPU to parallel using OpenMP:

```
#pragma omp parallel
for (int j = 0; j < 100; j++) {
    for (int i = 0; i < pixelCount; i++) {
        outputImage[i * 3] = (char) (
                    ((int) inputImage->buffer[i * 3] +
                    (int) inputImage->buffer[i * 3 + 1] +
                    (int) inputImage->buffer[i * 3 + 2]) / 3);
        outputImage[i * 3 + 1] = outputImage[i * 3];
        outputImage[i * 3 + 2] = outputImage[i * 3];
    }
}
```

2 What's the speedup?

- Using OpenMP parallel computed one third times compared to CPU.

```
Labwork 1 CPU ellapsed 374.1ms
Labwork 1 using OpenMP ellapsed 108.9ms
```

3 Try experimenting with different OpenMP parameters?

- atomic:

```
Labwork 1 CPU ellapsed 444.9ms
Labwork 1 using OpenMP  ellapsed 107.1ms
```

- critical

    ```
    Labwork 1 CPU ellapsed 372.0ms
    Labwork 1 using OpenMP 126.2ms
    ```

- master

    ```
    Labwork 1 CPU ellapsed 268.5ms
    Labwork 1 using OpenMP ellapsed 267.3ms
    ```

- single

    ```
    Labwork 1 CPU ellapsed 429.3ms
    Labwork 1 using OpenMP ellapsed 109.4ms
    ```