CS 131 Lab 2
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Test 1

Static:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.0256872	0.0317801	0.0471918
70 Chunks	0.0171368	0.0327361	0.0634804

Dynamic:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.0251863	0.0382823	0.0659461
70 Chunks	0.016814	0.028695	0.0661766

Test 2

Static:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.585055	0.75955	1.38515
70 Chunks	0.393158	0.758929	1.50835

Dynamic:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.575269	0.815715	1.50558
70 Chunks	0.399541	0.691308	1.54085

Test 3

Static:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.00535877	0.00956301	0.0154454

70 Chunks	0.00521616	0.0105959	0.0187523

Dynamic:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.00536248	0.0109187	0.0195473
70 Chunks	0.00522986	0.0106396	0.0199896

Test 4

Static:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.412104	0.801492	1.40307
70 Chunks	0.538673	0.766426	1.57238

Dynamic:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.400696	0.694505	1.53692
70 Chunks	0.547069	0.847726	1.52059

Test 5

Static:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.0213185	0.0275387	0.0521316
70 Chunks	0.0149065	0.0268664	0.0505668

Dynamic:

Times	**2 Threads**	**4 Threads**	**8 Threads**
25 Chunks	0.0150619	0.0319124	0.0523135
70 Chunks	0.0147565	0.0304401	0.0566969

Below are example of threads and their starting points (there are too many, so not all): (Table has tests done on OpenLab, whereas these are done on my desktop)

Test 1 with 25 Chunks, 8 Threads, and Statically Scheduled

```
PS C:\Users\trana\Desktop\CS131\131_2> ./ImplementationA test1.pgm test1_output.pgm 25 static
Detect edges in test1.pgm using OpenMP threads

Time for static scheduling: 0.0239999
Thread 0 -> Processing Chunk starting at Row 0
Thread 0 -> Processing Chunk starting at Row 160
Thread 0 -> Processing Chunk starting at Row 320
Thread 0 -> Processing Chunk starting at Row 480
Thread 1 -> Processing Chunk starting at Row 20
Thread 1 -> Processing Chunk starting at Row 180
Thread 1 -> Processing Chunk starting at Row 340
Thread 2 -> Processing Chunk starting at Row 40
Thread 2 -> Processing Chunk starting at Row 200
Thread 2 -> Processing Chunk starting at Row 360
Thread 3 -> Processing Chunk starting at Row 60
Thread 3 -> Processing Chunk starting at Row 220
Thread 3 -> Processing Chunk starting at Row 380
Thread 4 -> Processing Chunk starting at Row 80
Thread 4 -> Processing Chunk starting at Row 240
Thread 4 -> Processing Chunk starting at Row 400
Thread 5 -> Processing Chunk starting at Row 100
Thread 5 -> Processing Chunk starting at Row 260
Thread 5 -> Processing Chunk starting at Row 420
Thread 6 -> Processing Chunk starting at Row 120
Thread 6 -> Processing Chunk starting at Row 280
Thread 6 -> Processing Chunk starting at Row 440
Thread 7 -> Processing Chunk starting at Row 140
Thread 7 -> Processing Chunk starting at Row 300
Thread 7 -> Processing Chunk starting at Row 460
```

Test 2 with 25 Chunks, 4 Threads, and Statically Scheduled

```
PS C:\Users\trana\Desktop\CS131\131_2> ./ImplementationA test2.pgm test2_output.pgm 25 static
Detect edges in test2.pgm using OpenMP threads

Time for static scheduling: 0.36
Thread 0 -> Processing Chunk starting at Row 0
Thread 0 -> Processing Chunk starting at Row 320
Thread 0 -> Processing Chunk starting at Row 640
Thread 0 -> Processing Chunk starting at Row 960
Thread 0 -> Processing Chunk starting at Row 1280
Thread 0 -> Processing Chunk starting at Row 1600
Thread 0 -> Processing Chunk starting at Row 1920
Thread 1 -> Processing Chunk starting at Row 80
Thread 1 -> Processing Chunk starting at Row 400
Thread 1 -> Processing Chunk starting at Row 720
Thread 1 -> Processing Chunk starting at Row 1040
Thread 1 -> Processing Chunk starting at Row 1360
Thread 1 -> Processing Chunk starting at Row 1680
Thread 2 -> Processing Chunk starting at Row 160
Thread 2 -> Processing Chunk starting at Row 480
Thread 2 -> Processing Chunk starting at Row 800
Thread 2 -> Processing Chunk starting at Row 1120
Thread 2 -> Processing Chunk starting at Row 1440
Thread 2 -> Processing Chunk starting at Row 1760
Thread 3 -> Processing Chunk starting at Row 240
Thread 3 -> Processing Chunk starting at Row 560
Thread 3 -> Processing Chunk starting at Row 880
Thread 3 -> Processing Chunk starting at Row 1200
Thread 3 -> Processing Chunk starting at Row 1520
Thread 3 -> Processing Chunk starting at Row 1840
```

Test 3 with 25 Chunks, 2 Threads, and Dynamic Scheduled

```
PS C:\Users\trana\Desktop\CS131\131_2> ./ImplementationA test3.pgm test3_output.pgm 25 dynamic
Detect edges in test3.pgm using OpenMP threads

Time for dynamic scheduling: 0.0079999
Thread 0 -> Processing Chunk starting at Row 0
Thread 0 -> Processing Chunk starting at Row 18
Thread 0 -> Processing Chunk starting at Row 45
Thread 0 -> Processing Chunk starting at Row 54
Thread 0 -> Processing Chunk starting at Row 72
Thread 0 -> Processing Chunk starting at Row 90
Thread 0 -> Processing Chunk starting at Row 108
Thread 0 -> Processing Chunk starting at Row 126
Thread 0 -> Processing Chunk starting at Row 144
Thread 0 -> Processing Chunk starting at Row 162
Thread 0 -> Processing Chunk starting at Row 180
Thread 0 -> Processing Chunk starting at Row 198
Thread 0 -> Processing Chunk starting at Row 216
Thread 0 -> Processing Chunk starting at Row 234
Thread 1 -> Processing Chunk starting at Row 9
Thread 1 -> Processing Chunk starting at Row 27
Thread 1 -> Processing Chunk starting at Row 36
Thread 1 -> Processing Chunk starting at Row 63
Thread 1 -> Processing Chunk starting at Row 81
Thread 1 -> Processing Chunk starting at Row 99
Thread 1 -> Processing Chunk starting at Row 117
Thread 1 -> Processing Chunk starting at Row 135
Thread 1 -> Processing Chunk starting at Row 153
Thread 1 -> Processing Chunk starting at Row 171
Thread 1 -> Processing Chunk starting at Row 189
Thread 1 -> Processing Chunk starting at Row 207
Thread 1 -> Processing Chunk starting at Row 225
Thread 1 -> Processing Chunk starting at Row 243
```

Test 4 with 25 Chunks, 8 Threads, and Dynamic Scheduled

```
PS C:\Users\trana\Desktop\CS131\131_2> ./ImplementationA test4.pgm test4_output.pgm 25 dynamic
Detect edges in test4.pgm using OpenMP threads

Time for dynamic scheduling: 0.502
Thread 0 -> Processing Chunk starting at Row 400
Thread 0 -> Processing Chunk starting at Row 640
Thread 0 -> Processing Chunk starting at Row 1280
Thread 0 -> Processing Chunk starting at Row 1920
Thread 1 -> Processing Chunk starting at Row 0
Thread 1 -> Processing Chunk starting at Row 720
Thread 1 -> Processing Chunk starting at Row 1440
Thread 2 -> Processing Chunk starting at Row 160
Thread 2 -> Processing Chunk starting at Row 1120
Thread 2 -> Processing Chunk starting at Row 1600
Thread 3 -> Processing Chunk starting at Row 80
Thread 3 -> Processing Chunk starting at Row 880
Thread 3 -> Processing Chunk starting at Row 1360
Thread 4 -> Processing Chunk starting at Row 320
Thread 4 -> Processing Chunk starting at Row 1200
Thread 4 -> Processing Chunk starting at Row 1840
Thread 5 -> Processing Chunk starting at Row 240
Thread 5 -> Processing Chunk starting at Row 960
Thread 5 -> Processing Chunk starting at Row 1760
Thread 6 -> Processing Chunk starting at Row 480
Thread 6 -> Processing Chunk starting at Row 1040
Thread 6 -> Processing Chunk starting at Row 1680
Thread 7 -> Processing Chunk starting at Row 560
Thread 7 -> Processing Chunk starting at Row 800
Thread 7 -> Processing Chunk starting at Row 1520
```

Test 5 with 70 Chunks, 8 Threads, and Statically Scheduled

```
PS C:\Users\trana\Desktop\CS131\131_2> ./ImplementationA test5.pgm test5_output.pgm 70 static
Detect edges in test5.pgm using OpenMP threads

Time for static scheduling: 0.0220001
Thread 0 -> Processing Chunk starting at Row 0
Thread 0 -> Processing Chunk starting at Row 48
Thread 0 -> Processing Chunk starting at Row 96
Thread 0 -> Processing Chunk starting at Row 144
Thread 0 -> Processing Chunk starting at Row 192
Thread 0 -> Processing Chunk starting at Row 240
Thread 0 -> Processing Chunk starting at Row 288
Thread 0 -> Processing Chunk starting at Row 336
Thread 0 -> Processing Chunk starting at Row 384
Thread 0 -> Processing Chunk starting at Row 432
Thread 1 -> Processing Chunk starting at Row 6
Thread 1 -> Processing Chunk starting at Row 54
Thread 1 -> Processing Chunk starting at Row 102
Thread 1 -> Processing Chunk starting at Row 150
Thread 1 -> Processing Chunk starting at Row 198
Thread 1 -> Processing Chunk starting at Row 246
Thread 1 -> Processing Chunk starting at Row 294
Thread 1 -> Processing Chunk starting at Row 342
Thread 1 -> Processing Chunk starting at Row 390
Thread 1 -> Processing Chunk starting at Row 438
Thread 2 -> Processing Chunk starting at Row 12
Thread 2 -> Processing Chunk starting at Row 60
Thread 2 -> Processing Chunk starting at Row 108
Thread 2 -> Processing Chunk starting at Row 156
Thread 2 -> Processing Chunk starting at Row 204
Thread 2 -> Processing Chunk starting at Row 252
Thread 2 -> Processing Chunk starting at Row 300
Thread 2 -> Processing Chunk starting at Row 348
Thread 2 -> Processing Chunk starting at Row 396
Thread 2 -> Processing Chunk starting at Row 444
Thread 3 -> Processing Chunk starting at Row 18
Thread 3 -> Processing Chunk starting at Row 66
Thread 3 -> Processing Chunk starting at Row 114
Thread 3 -> Processing Chunk starting at Row 162
Thread 3 -> Processing Chunk starting at Row 210
Thread 3 -> Processing Chunk starting at Row 258
Thread 3 -> Processing Chunk starting at Row 306
Thread 3 -> Processing Chunk starting at Row 354
Thread 3 -> Processing Chunk starting at Row 402
Thread 3 -> Processing Chunk starting at Row 450
```

```
Thread 4 -> Processing Chunk starting at Row 24
Thread 4 -> Processing Chunk starting at Row 72
Thread 4 -> Processing Chunk starting at Row 120
Thread 4 -> Processing Chunk starting at Row 168
Thread 4 -> Processing Chunk starting at Row 216
Thread 4 -> Processing Chunk starting at Row 264
Thread 4 -> Processing Chunk starting at Row 312
Thread 4 -> Processing Chunk starting at Row 360
Thread 4 -> Processing Chunk starting at Row 408
Thread 4 -> Processing Chunk starting at Row 456
Thread 5 -> Processing Chunk starting at Row 30
Thread 5 -> Processing Chunk starting at Row 78
Thread 5 -> Processing Chunk starting at Row 126
Thread 5 -> Processing Chunk starting at Row 174
Thread 5 -> Processing Chunk starting at Row 222
Thread 5 -> Processing Chunk starting at Row 270
Thread 5 -> Processing Chunk starting at Row 318
Thread 5 -> Processing Chunk starting at Row 366
Thread 5 -> Processing Chunk starting at Row 414
Thread 6 -> Processing Chunk starting at Row 36
Thread 6 -> Processing Chunk starting at Row 84
Thread 6 -> Processing Chunk starting at Row 132
Thread 6 -> Processing Chunk starting at Row 180
Thread 6 -> Processing Chunk starting at Row 228
Thread 6 -> Processing Chunk starting at Row 276
Thread 6 -> Processing Chunk starting at Row 324
Thread 6 -> Processing Chunk starting at Row 372
Thread 6 -> Processing Chunk starting at Row 420
Thread 7 -> Processing Chunk starting at Row 42
Thread 7 -> Processing Chunk starting at Row 90
Thread 7 -> Processing Chunk starting at Row 138
Thread 7 -> Processing Chunk starting at Row 186
Thread 7 -> Processing Chunk starting at Row 234
Thread 7 -> Processing Chunk starting at Row 282
Thread 7 -> Processing Chunk starting at Row 330
Thread 7 -> Processing Chunk starting at Row 378
Thread 7 -> Processing Chunk starting at Row 426
```