Test Cases – Coursework 1

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Hardware Specs:  
Number of devices: 1, Device 0, Name NVIDIA GeForce RTX 3060 Laptop GPU, Revision 8.6, Memory 6143MB, Warp Size 32, Clock 1425000, Multiprocessors 30.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case** | Thread Size | Block Size | Average (of three) CPU Time (ms) | Average (of three) GPU Time (ms) | Notes: |
| **1:** | 100 | 1 | 466ms | 39ms | The GPU version did not find most of the correct occurrences |
| **2:** | 1012 | 10 | 416ms | 38ms | The GPU version did not find most of the correct occurrences but more than test case 1 did. |
| **3:** | 256 | data length + number of threads - 1 % number of threads | 445ms | 43ms | Occurrence count matches CPU version  (fastest) |
| **4:** | 128 | data length + number of threads - 1 % number of threads | 447ms | 45ms | Occurrence count matches CPU version |
| **5:** | 512 | data length + number of threads - 1 % number of threads | 441ms | 45ms | Occurrence count matches CPU version |

***Test Cases (1):***

1. CPU = 428ms GPU = 41ms

2. CPU = 457ms GPU = 34ms

3. CPU = 512ms GPU = 42ms

*CPU average of three =* 466ms

*GPU average of three = 39ms*

***Test Cases (2):***

1. CPU = 408ms GPU = 40ms

2. CPU = 422ms GPU = 37ms

3. CPU = 418ms GPU = 38ms

*CPU average of three = 416ms*

*GPU average of three = 38ms*

***Test Cases (3):***

1. CPU = 416ms GPU = 40ms

2. CPU = 497ms GPU = 43ms

3. CPU = 423ms GPU = 46ms

*CPU average of three = 445ms*

*GPU average of three = 43ms*

***Test Cases (4):***

1. CPU = 429ms GPU = 44ms

2. CPU = 443ms GPU = 44ms

3. CPU = 470ms GPU = 48ms

*CPU average of three = 447ms*

*GPU average of three = 45ms*

***Test Cases (5):***

1. CPU = 457ms GPU = 46ms

2. CPU = 426ms GPU = 43ms

3. CPU = 440ms GPU = 46ms

*CPU average of three = 441ms*

*GPU average of three = 45ms*

A screenshot of a computer

Description automatically generatedOutputs: Test Case 1:

A screenshot of a computer

Description automatically generatedTest Case 2:

A screenshot of a computer

Description automatically generatedTest Case 3:

Test Case 4:   
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
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