Architecture of Parallel Computers

Program 1: GPU Programming

**Plot 1:**

| **Plot 1** | **Base Code** | **Energy Optimized Code** | **% Improvement** |
| --- | --- | --- | --- |
| Total instructions processed | 2751584 | 2151584 |  |
| Total number of cache accesses | 45283 + 6252 | 35721 + 6252 |  |
| Average Energy usage | 85.727 | 76.7335 |  |

**Analysis:**

1. Why is the total number of instructions less than in the base code?

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1. Why are there fewer cache accesses?

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1. What is the parameter that is compromised for saving energy? Why?

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1. Which code would you prefer to use, and under which circumstances?

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1. How did you find your first experience with a simulator?

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1. Where do you think simulators will be helpful?

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**Plot 2:**

| **Plot 2** | **Base Code** | **Energy Optimized Code** | **% Improvement** |
| --- | --- | --- | --- |
| Total instructions processed | 2601584 | 2301584 |  |
| Total number of cache accesses | 43728 + 7815 | 38750 + 7815 |  |
| Average Energy usage | 96.4213 | 93.8008 |  |

**Analysis:**

1. Why is the total number of instructions less than in the base code?

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1. Why are there fewer cache accesses?

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| --- |

1. What is the parameter that is compromised for saving energy? Why?

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1. Which code would you prefer to use, and under which circumstances?

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1. How did you find your first experience with a simulator?

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1. Where do you think simulators will be helpful?

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