Project Proposal

Group Members:

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Repo:
https://github.com/FergusPrimus/OperatingSystemsProject

Overview:
We intend to create a Proof of Concept for thread optimizations across different systems. Currently, we are relatively unaware of different methods of thread optimizations. We intend to find two to three algorithms/methods of thread optimization and implement these on a range of systems and record the results.

There are two main types of thread optimization which we have been considering: thread optimization through the scheduler running on a system and thread optimization based on how the process partitions its work into threads. If we look into optimizing the way a scheduler assigns threads to cores, we will more carefully observe systems with very wide SMT (e.g., Power9) and systems with asymmetrical core capabilities such as the ARM64 CPUs often found in mobile devices.

Deliverables:

1. The code for the algorithms/methods.
2. Technical Report: The report will include our testing methods and findings, including test hardware specs.
3. Project Presentation and Demo.

Plan for Division of Labor:
Our current plan to divide the labor is an even three-way split across all deliverables. As we find new methods of thread optimization, it is likely we will also optimize our system for division of labor.

Schedule:

11/08/2019: Deliverable 1

11/15/2019: Deliverable 2

11/22/2019: Deliverable 3 (first day, somewhat tentatively)