Birla Institute of Technology & Science, Pilani
Pilani Campus

II SEMESTER 2021-2022
Assignment-1

Course No.:	**CS F422**	**Course Title:**	**Parallel Computing**
Deadline:	**As per Canvas**	**Maximum Marks:**	**30M (15%)**

Note:
- Maximum of one student per group.

P1. Implement Blelloch's scan algorithm and Hillis and Steele's algorithm using Pthreads. You can take a list of numbers in a file "input.txt".
(a) Draw a task graph for the parallel tasks. Identify degree of concurrency and speedup.
(b) Are these algorithms cost-optimal? Explain.
(c) Using Brent's theorem, identify the minimum number of theads.
(d) Using Amdhal's identify, maximum speed up possible.
(e) Evaluate the speedup achieved by running your program for a single thread and multiple threads in the increment of 1 thread at a time.

Deliverables:

- Design Document (.pdf). Must contain answers for (a)-(d).
- Source code blelloch.c and hillis.c

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