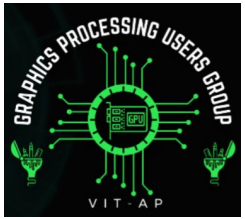

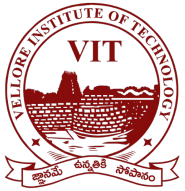

VIT-AP UNIVERSITY

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C{}DE-A-TH{}N - 2022

Assignment 1

Q. 1 A. Write a C/C++ or Python program to perform prefix sum of an array

B. Deploy the above code on GPU using CUDA C++/ CUDA Python

- Consider the array size sufficiently large eg. 10,0000 of type double.
- Measure the performance of of sequential version and optimized parallel version
- Calculate the speedup observed
- You may execute sequential programs on your local machine
- However all parallel codes must be executed on server
- Parallel versions considered for evaluations only if both sequential and parallel codes gives same output. Implement validate() functions

- What is prefix sum?

In computer science, the prefix sum, cumulative sum, inclusive scan, or simply scan of a sequence of numbers x0, x1, x2, ... is a second sequence of numbers y0, y1, y2, ..., the sums of prefixes (running totals) of the input sequence:

- y0 = x0
- y1 = x0 + x1
- y2 = x0 + x1+ x2

Submission

- Explain in brief your parallelization strategy like data splitting, thread/block creation, and allocation etc.

Ans:

Submission

- Insert your findings into the below table

Ans:

	Sequential Time	Parallel version 1 time	Parallel version 2 time	Speedup wrt parallel version 1	Speedup wrt parallel version 1
Prefix seum					

Note:- In case if needed you can add more columns if you have implemented multiple parallel versions

Submission

- Comment on your observations such as limitations of proposed solution, etc.

Ans:

Submission

- Rename the file as <TEAM_NAME>_Assignment1
- Send the presentation file with source code to coordinator's mail