Quiz 5

ECE 277

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Create your own power point file

Print your name, student Id and Site ID

(This is not a computer programming quiz. Use a power point's table to draw figures.

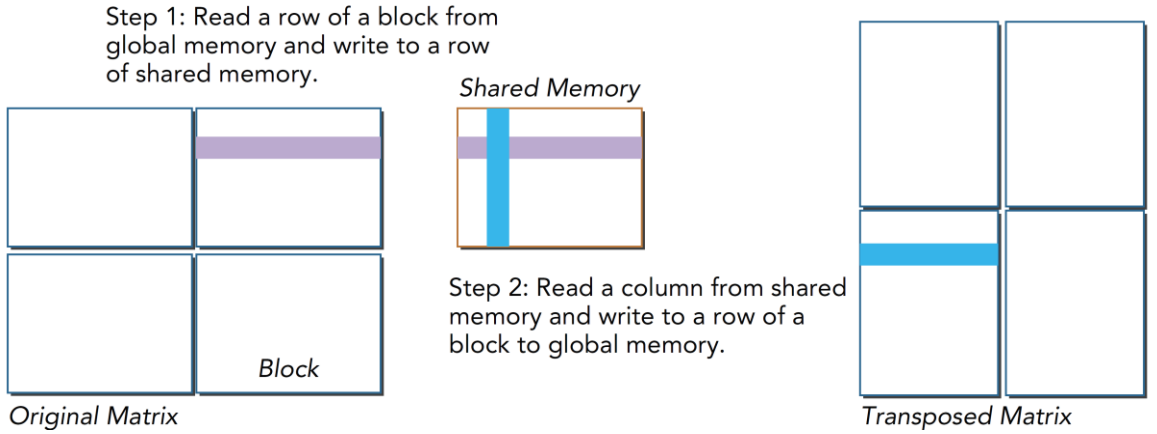
If you cannot use a power point, the hand-drawing is fine but make sure clearly identify all the requirements.

Transpose of a matrix with shared memory

- For Transpose of a matrix with shared memory, we will take two separate procedures as described during lecture (also refer to the below figure)

1) Row-wise GMEM read, Row-wise SMEM write
2) Column-wise SMEM read, Row-wise GMEM write

- **You should submit two figures for 1) and 2)**



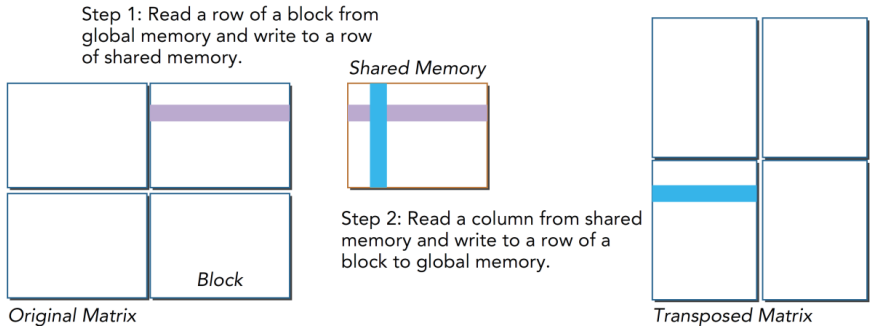
Row-wise GMEM read, Row-wise SMEM write (2.5 points)

Suppose we call the transposeSmem function in the lecture side 14 with BDIMX=16 and BDIMY=8 like the below code

1) Draw a matrix transpose region like the below example by threads of warp 0 in GMEM blockIdx.x=2, blockIdx.y=1, blockIdx.z=0 and SMEM for Row-wise GMEM read and Row-wise SMEM write

- Your drawing should clearly indicate how many rows or columns are processed by warp 0 in GMEM blockIdx.x=2, blockIdx.y=1, blockIdx.z=0 and SMEM

```
#define BDIMX 16
#define BDIMY 8
transposeSmem<<<(?, ?, ?),(BDIMX, BDIMY)>>>
```



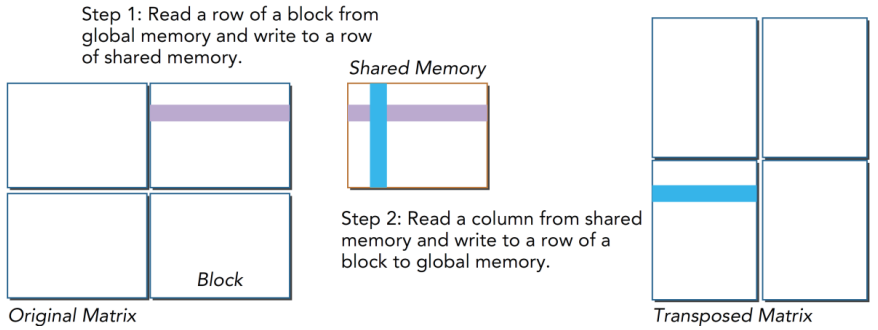
example

Column-wise SMEM read, Row-wise GMEM write (2.5 points)

2) Draw a matrix transpose region like the below example by threads of warp 0 in GMEM blockIdx.x=2, blockIdx.y=1, blockIdx.z=0 and SMEM for Column-wise SMEM read and Row-wise GMEM write

- Your drawing should clearly indicate how many rows or columns are processed by warp 0 in GMEM blockIdx.x=2, blockIdx.y=1, blockIdx.z=0 and SMEM

```
#define BDIMX 16
#define BDIMY 8
transposeSmem<<<(?, ?, ?),(BDIMX, BDIMY)>>>
```



example