# for & Parallel-for Examples

## What CAN be inside parallel-for:

creation of scalar variables

deletion of variables

matrix/vector indexing

non-matrix-operation assignments

if-else statements with only <What CAN be inside parallel-for>

for statement with only <What CAN be inside parallel-for>

synchronization statements

comments

## What CANNOT be inside parallel-for:

creation of matrix/vector/structure variables

matrix operations (multiplication, addition, subtraction, transpose)

if-else statements with only <What CANNOT be inside parallel-for>

for statement with only <What CANNOT be inside parallel-for>

parallel-for statements

structure definitions

function definitions

funtion invocations

print statements

plot commands

## What CAN be inside for

creation of ANY variables

deletion of variables

matrix/vector indexing

funtion invocations

ANY assignment (including matrix/vector operations)

FOR/PARALLEL-FOR statements

if-else statements;

plot commands

comments

## What CANNOT be inside for

print statements

structure definitions

function definitions

synchronization statements

## Examples

### // 1. Matrix indexing inside parallel-for

Matrix<int>[2][100] c = [ ];

parallelfor(x->0 to 99)  
{  
  c[1][x] = a[1][x] + b[1][x];  
}

### // 2. Vector indexing & if-else statement inside parallel-for

Vector<int>[100] z = [ ];

parallelfor(x -> 0 to 99)

{

int y;

y = 0;

if ( y == 0) {

z[x] = x + x;

}

else {

z[x] = x \* x;

}

}

### // 3. for statement inside parallel-for

Vector<int>[10] z = [ ];

parallelfor(x -> 0 to 9)

{

z[x] = x;

for (y -> 1 to 3)

{

z[x] = z[x] \* z[x];

}

}

## // 4. Synchronization statement and comments inside parallel-for

Matrix<int>[2][100] c = [ ];

parallelfor(x->0 to 99)  
{

// this is comment

c[0][x] = x \* (2 + x);

sync;  
  c[1][x] = c[0][x] + 1;   
}