Setting Up GPUTejas

Installation:

1. Download GPUTejas and GPUOcelot from the below links:

   GPUTejas:
   www.cse.iitd.ac.in/tejas/gputejas/home_files/gputejas_installation_kit.tar.gz
   GPUOcelot:
   www.cse.iitd.ac.in/tejas/gputejas/home_files/ocelot_help_files.tar.gz

2. Please make sure to have java(tested on 1.7) installed before continuing.

3. Run the following commands:

   ```
   tar -xvf gputejas_installation_kit.tar.gz
   cd gputejas_installation_kit
   tar -xvf gputejas.tar.gz
   chmod +x setup_gputejas.sh
   ```

4. Modify the <MaxNumJavaThreads> tag in "gputejas/src/simulator/config/config.xml" as the number of threads you want for simulation.

5. Run the script as "./setup_gputejas.sh setup" and follow the steps as prompted.

Generating the Traces:

1. Change the name and the signature of the main function in your benchmark to:
   "int GPUTejas_main(int argc, char** argv)"

2. Compile your benchmark using the command:
   "nvcc –c <files_in_the_benchmark> –arch=sm_20"
   For eg: we can compile *bfs* benchmark from *rodinia* benchmark suite as:
   "nvcc –c bfs.cu –arch=sm_20"
   Similarly, the *streamcluster* benchmark from *rodinia* benchmark suite can be compiled as:
   "nvcc –c streamcluster_cuda_cpu.cpp streamcluster_cuda.cu streamcluster_header.cu –arch=sm_20"

   Note: Ensure that before running the above command, no ".o" files exist in the directory

3. Run the script in GPU tejas folder with the absolute path of the ".o" files that were generated in the above step :
   "./setup_gputejas.sh genTrace <path_to_.o_files>"

4. Follow the steps as prompted by the script

Running a Benchmark:

1. To run a benchmark on the generated traces, use the following command:
   "./setup_gputejas.sh run"

2. Follow the steps as prompted by the script

Modifying the GPU Tejas Code:

1. It is recommended to use the eclipse IDE to work with GPUTejas. Eclipse can be freely downloaded.
   Go through File->Import->General->Existing projects into workspace and use "gputejas_installation_kit/gputejas" as the root directory

2. It is necessary to create the jar again if any part of the code is modified. Run the script as "./setup_gputejas make-jar" to make the jar again.

We have tested the simulator for rodinia_2.1 benchmark suite, which can be downloaded from: "http://www.cs.virginia.edu/~skadron/wiki/rodinia/index.php/Downloads"