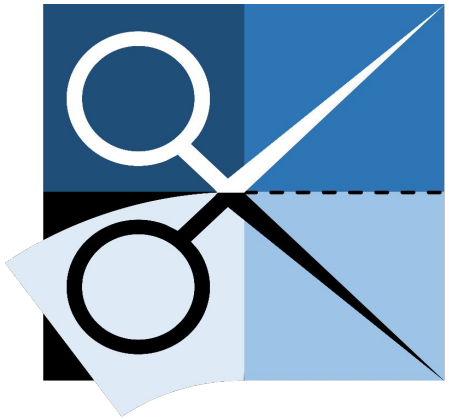
Google Summer of Code

INFN Istituto Nazionale di Fisica Nucleare



OpenForBC benchmark

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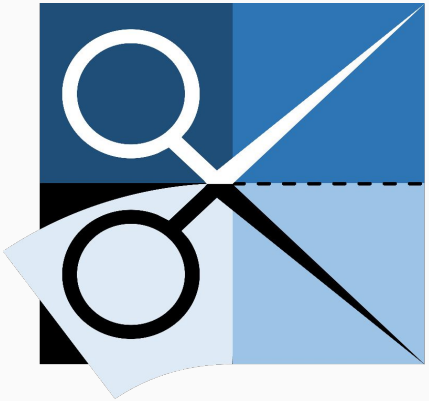
The context:
What is OpenForBC (under development by INFN)



- “forbici” means scissors ✂️ in Italian 🇮🇹.
- Open ForBC will be the best pair of scissors to partition huge and powerful GPUs.
- It will enable a common interface to do so across vendors and models at least on Linux KVM.

For more information check here and OpenForBC on GitHub

My GSoC project:
OpenForBC-Benchmark rationale

```
(performance ≤ sum(performances))?cheer():cry()
```

We want to be able to measure whether a partitioned GPU
is performing better (*or worse*) than the original monolithic one.

We need for a benchmarking tool to use as “meter”.

A benchmarking tool that has

For Developers

Extensible framework that can accommodate commercial and custom benchmarks.

A **coherent interface** shared across the benchmarks, which require as little as three files to run.

Developer **Documentation**

Comes bundled with **Blender benchmark** as a sample. More Benchmarks are being continuously added.

Fully **Tested code** to diagnose any screw that may fall out of place.

Support for all OS
if the benchmarks has support for it.

For Users

A fully functional **CLI** with good level of help functions.

Logging functionality for benchmarks and suites.

User **Documentation**

Step1: Choose how you want to run the benchmark

```
$ python user_interfaces/cli.py interactive
   ___                      _____           ____    ____
  / _ \ _ __   ___ _ __ |  ___|__  _ __| __ ) / ___|
 | | | | '_ \ / _ \ '_ \| |_ / _ \| '__|  _ \| |
 | |_| | |_) |  __/ | | |  _| (_) | |  | |_) | |___
  \___/| .__/ \___|_| |_|_|  \___/|_|  |____/ \____|
       |_|
====Welcome to the OpenForBC Benchmarking Tool====
💻 Collective benchmark suite or individual run?
   Benchmark Suite
>  Stand Alone Benchmark
   Make your own suite
   Quit
```

Step2: Choose which benchmark you want to run

```
$ python user_interfaces/cli.py interactive
   ___                      _____           ____    ____
  / _ \ _ __   ___ _ __ |  ___|__  _ __| __ ) / ___|
 | | | | '_ \ / _ \ '_ \| |_ / _ \| '__|  _ \| |
 | |_| | |_) |  __/ | | |  _| (_) | |  | |_) | |___
  \___/| .__/ \___|_| |_|_|  \___/|_|  |____/ \____|
       |_|
 ====Welcome to the OpenForBC Benchmarking Tool====
 💻 Collective benchmark suite or individual run?  Stand Alone Benchmark
 💻 Select Benchmark  (Use arrow keys)
    dummy_benchmark
 >  blender_benchmark
    Quit
```

Step3: Choose settings file you'd like to use

```
$ python user_interfaces/cli.py interactive
   ___                      _____           ____    ____
  / _ \ _ __   ___ _ __ |  ___|__  _ __| __ ) / ___|
 | | | | '_ \ / _ \ '_ \| |_ / _ \| '__|  _ \| |
 | |_| | |_) |  __/ | | |  _| (_) | |  | |_) | |___
  \___/| .__/ \___|_| |_|_|  \___/|_|  |____/ \____|
       |_|
 ====Welcome to the OpenForBC Benchmarking Tool====
 💻 Collective benchmark suite or individual run?  Stand Alone Benchmark
 💻 Select Benchmark  blender_benchmark
    Initialising setup......
 -> Select Settings to use for blender_benchmark  (Use arrow keys)
 >  bmw27_settings.json
    classroom_koro_settings.json
```

And boom! You're benchmark is ready to run!

```
$ python user_interfaces/cli.py interactive
   ___                   _____          ____   ____
  / _ \ _ __   ___ _ __ |  ___|__   _ __| __ ) / ___|
 | | | | '_ \ / _ \ '_ \| |_ / _ \| '__|  _ \| |
 | |_| | |_) |  __/ | | |  _| (_) | |  | |_) | |___
  \___/| .__/ \___|_| |_|_|  \___/|_|  |____/ \____|
       |_|
 ====Welcome to the OpenForBC Benchmarking Tool====
 💻 Collective benchmark suite or individual run?  Stand Alone Benchmark
 💻 Select Benchmark  blender_benchmark
    Initialising setup......
 -> Select Settings to use for blender_benchmark  bmw27_settings.json
    Blender version already available locally: 2.92
    Scene already available locally: bmw27
    Blender version already available locally: 2.92
    Scene already available locally: bmw27
    Running Benchmark......
    Benchmarking Scene: bmw27
    2021/08/26 10:20:20 metadata.go:13: Fetching Metadata: https://opendata.blender.org/benchmarks
/metadata/
    2021/08/26 10:20:22 metadata.go:48: Successfully fetched metadata
    2021/08/26 10:20:22 metadata.go:70: Getting current launcher.
    2021/08/26 10:20:22 checksum.go:14: Calculating checksum of current launcher.
    2021/08/26 10:20:22 checksum.go:33: Launcher checksum:
0513a4a626bb0ee387366f67a632ea0f886ee5906aaafe148d473842059fb2ec.
    Warming up bmw27
```

Thank you!

The Floor is open to questions

Check out my GSoC report here and our project at this link.