README for WeightMC and WeightGen

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This website has implementations of the algorithms WeightMC and WeightGen, as well as benchmarks which can be used with them.

1 Using the Algorithms

To build the implementations (GCC 4.8 or later is required), follow the instructions in the `INSTALL` file under section "Building using autotools". If compilation is successful, you can then run the tools using the Python script in the top-level directory (WeightMC.py or WeightGen.py). Details on how to invoke this script are given in its usage string. WeightMC will print the computed approximate weighted model count directly to the console, while WeightGen will output the computed samples to a specified folder. Both programs can output logs if desired to aid in debugging. All files created by the tools have a number in their name derived from the current time, so that multiple invocations on the same input file will not clash (this number can also be set using a command-line option if needed).

2 Benchmarks and Weight Format

The benchmarks are provided with and without weights, for convenience in using some tools. Literal weights are specified with a simple extension to the standard DIMACS CNF format, via lines such as the following:

```
w 23 0.3
w -23 0.4
```

These indicate that the positive literal of variable 23 has weight 0.3, and the negative literal has weight 0.4. Any positive real numbers may be given as weights.

3 Questions

Please feel free to email any questions or comments to `kuldeep@rice.edu` or `dfremont@berkeley.edu`. For a quicker response, please add `[WeightGen]` to the subject line.