`__torch_function__` micro-benchmarks

This benchmark suite provides a systemic way to measure the performance of `__torch_function__` overhead.

Getting started

Initial Setup

Install `py-spy` by doing:

```
pip install py-spy
```

Note that more extensive documentation on using `py-spy` is available in `CONTRIBUTING.md`.

Running the benchmark

Run one of the following commands in the terminal, with the working directory being `${PYTORCH_CLONE_DIR}/benchmarks/overrides_benchmark`:

```
# Benchmark all the cases
python bench.py

# Flame graph pertaining to each case.
py-spy record -o tensor.svg --native -- python pyspybench.py Tensor
py-spy record -o subtensor.svg --native -- python pyspybench.py SubTensor
py-spy record -o overridden.svg --native -- python pyspybench.py WithTorchFunction
py-spy record -o suboverridden.svg --native -- python pyspybench.py
SubWithTorchFunction
```

Here is a brief overview of what the results should look like, if run correctly:

- Overhead for `torch` functions when run on `torch.Tensor` objects is on the order of 2 µs.
- `__torch_function__` should add zero overhead for `torch.Tensor` inputs, a small overhead for subclasses of `torch.Tensor`, and a couple of microseconds for `Tensor`-likes with `__torch_function__`.
- Changing the dispatching mechanism may result in changes that are on the order of 100 ns, which are hard to detect due to noise, but important.

Reporting benchmark results

When modifying any of the machinery around `__torch_function__`, run the benchmark for both the feature branch and the point it diverges from `master`. For each of these:

- Run `bench.py`, and include the output in your result.
- For each case where `bench.py` shows a regression, run the commands described above, prefixing the output SVG filename (the input to the `-o` switch) with `base-` or `branch-` depending on the commit you are running the benchmark on.
- For each SVG, open it in the browser, take a screenshot and include it in your result. Also include a ZIP file with all SVGs thus produced included.