Monte-Carlo Guesstimate with confidence

From wikipedia:

> "A back-of-the-envelope calculation is a rough calculation, typically jotted down on any available scrap of paper such as the actual back of an envelope. It is more than a guess but less than an accurate calculation or mathematical proof."

Instead of coming up with a single-value estimate, this app generates distribution and draws interval covering 95% of the distribution. As an input, it takes a function that computes a quantity to estimate. Each argument of this function is specified by its distribution. Monte-Carlo simulations are performed to come up with a distribution of the output quantity.

This software is similar to https://github.com/getguesstimate/guesstimate-app, but simpler, uses python and has programmatic interface instead of graphical.

Dependencies

- python3
- numpy
- matplotlib

Usage

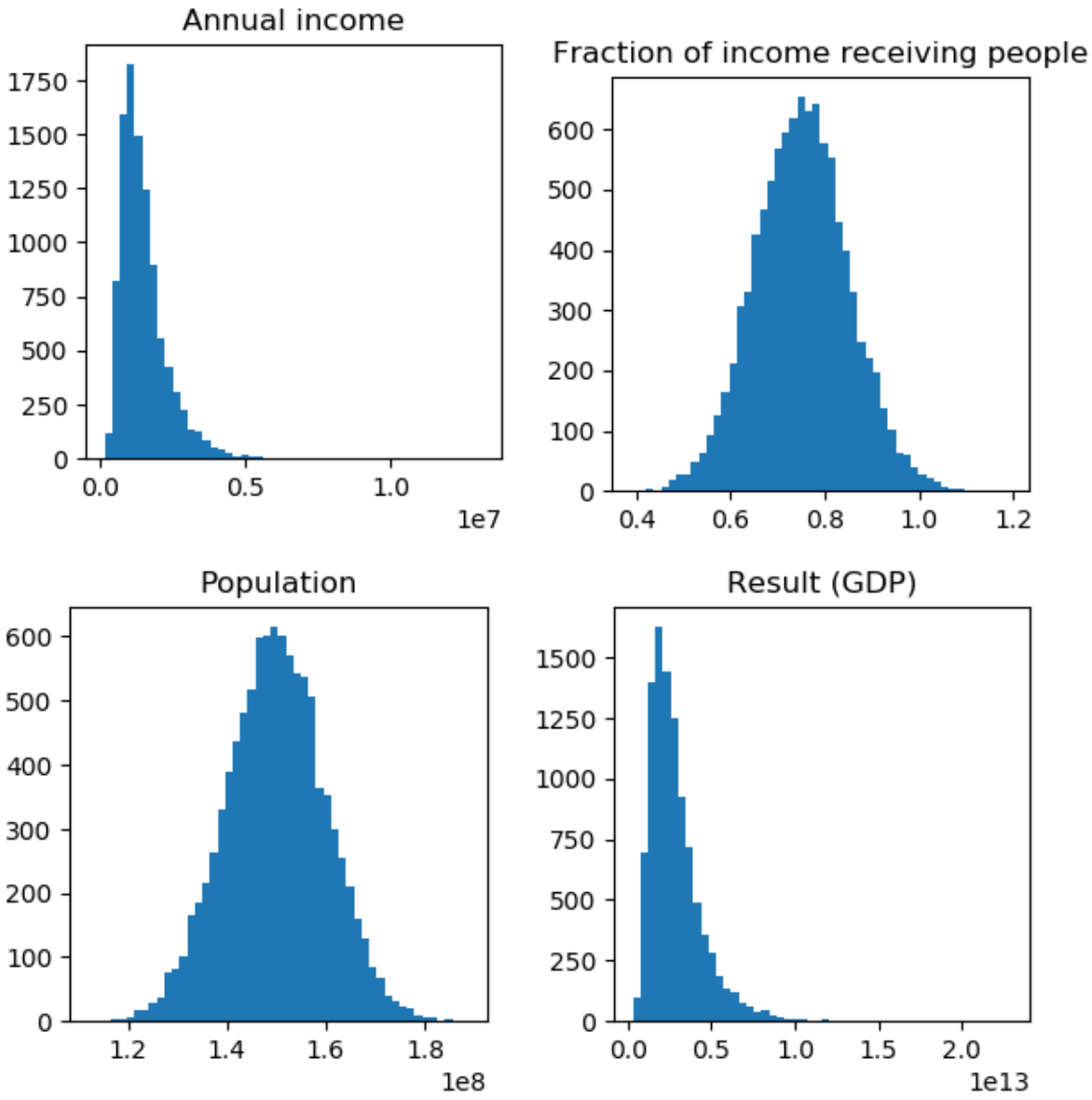
Use as a commandline tool

```
python gst.py ./default_model.py
```

Copy and modify `./default_model.py`. Run with your modified file. Profit?

Results for `default_model.py`

This model estimates GDP of Russia as GDP=$p * f * s/60$, where p is population, f is fraction of income receiving citizens, s is annual income in RUB. "/60" converts RUB to USD.



References

- https://en.wikipedia.org/wiki/Guesstimate
- https://en.wikipedia.org/wiki/Back-of-the-envelope_calculation
- https://en.wikipedia.org/wiki/Fermi_problem