

What is RockPY?

A Python library for rock physics, to be used in conjunction with the EFFORT Gateway.



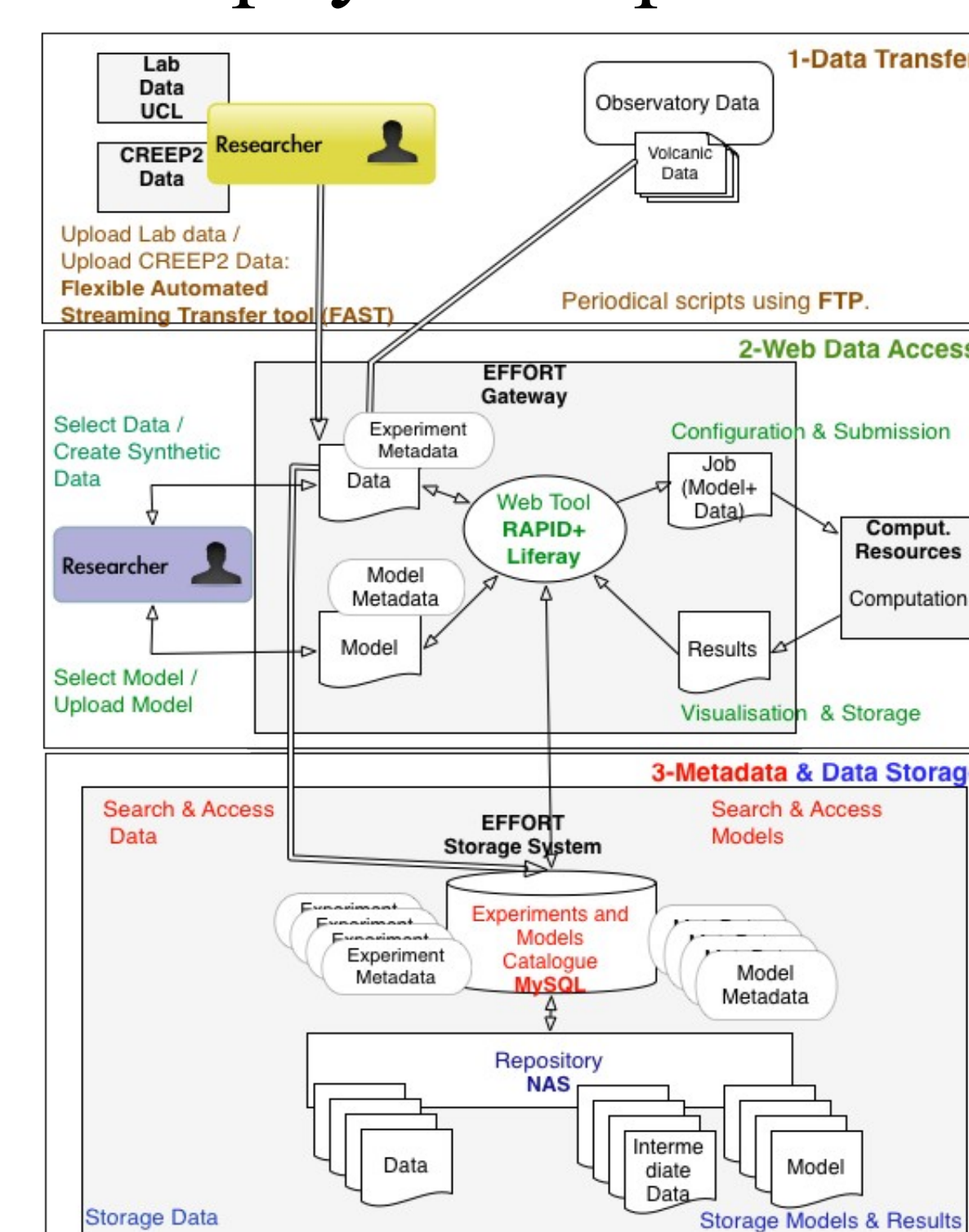
Allows researchers to share models, observations and analyses for brittle rock fractures from volcanoes, glaciers and laboratory experiments.

Eruption of Mount Etna from 2011

RockPy is the first library made specifically for rock physicists. The library gives researchers a quick, yet fully programmable way to analyze EFFORT's data.

What is EFFORT?

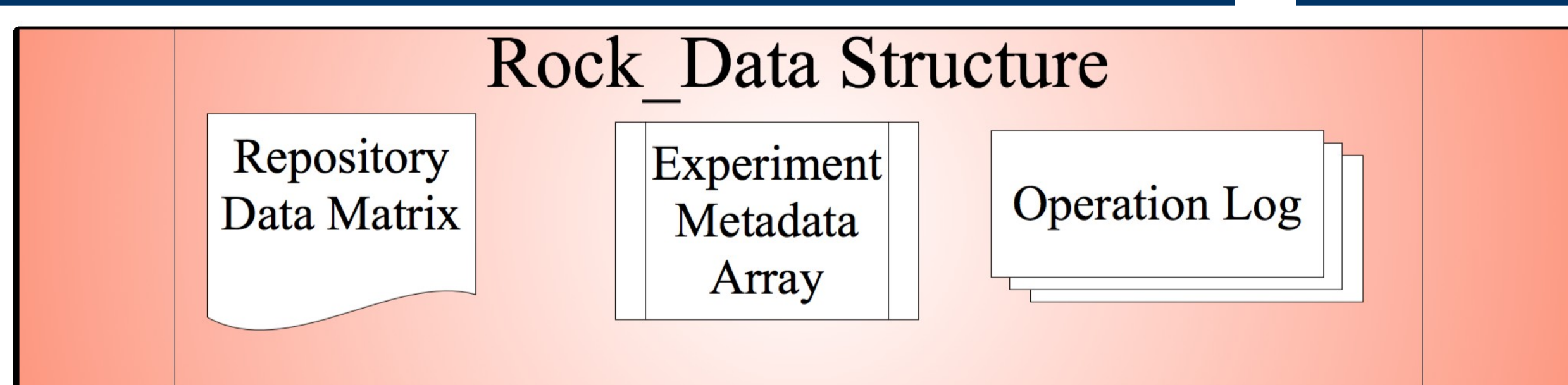
Exploring Failure Forecasting in Real Time. Effort is a project that allows data and metadata from rock physics experiments to be shared.



EFFORT has a web portlet in which users can visualize experimental and synthetic rock physics data. RockPy was built to give researchers more control over the processing of the data stored in EFFORT.

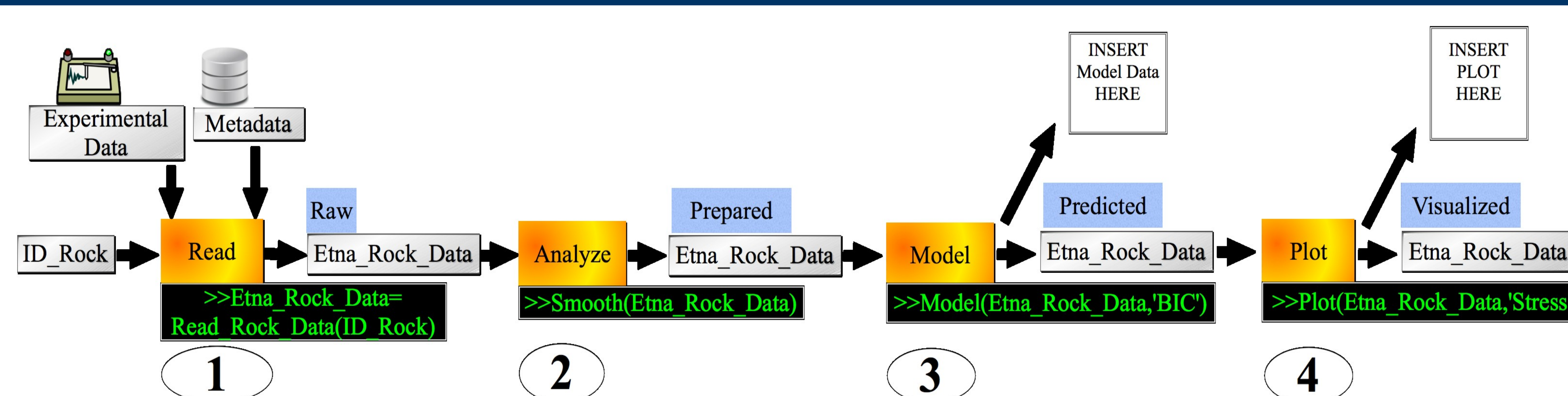
Effort Gateway: <http://http://effort.is.ed.ac.uk:8080/>

Structure of Rock Data

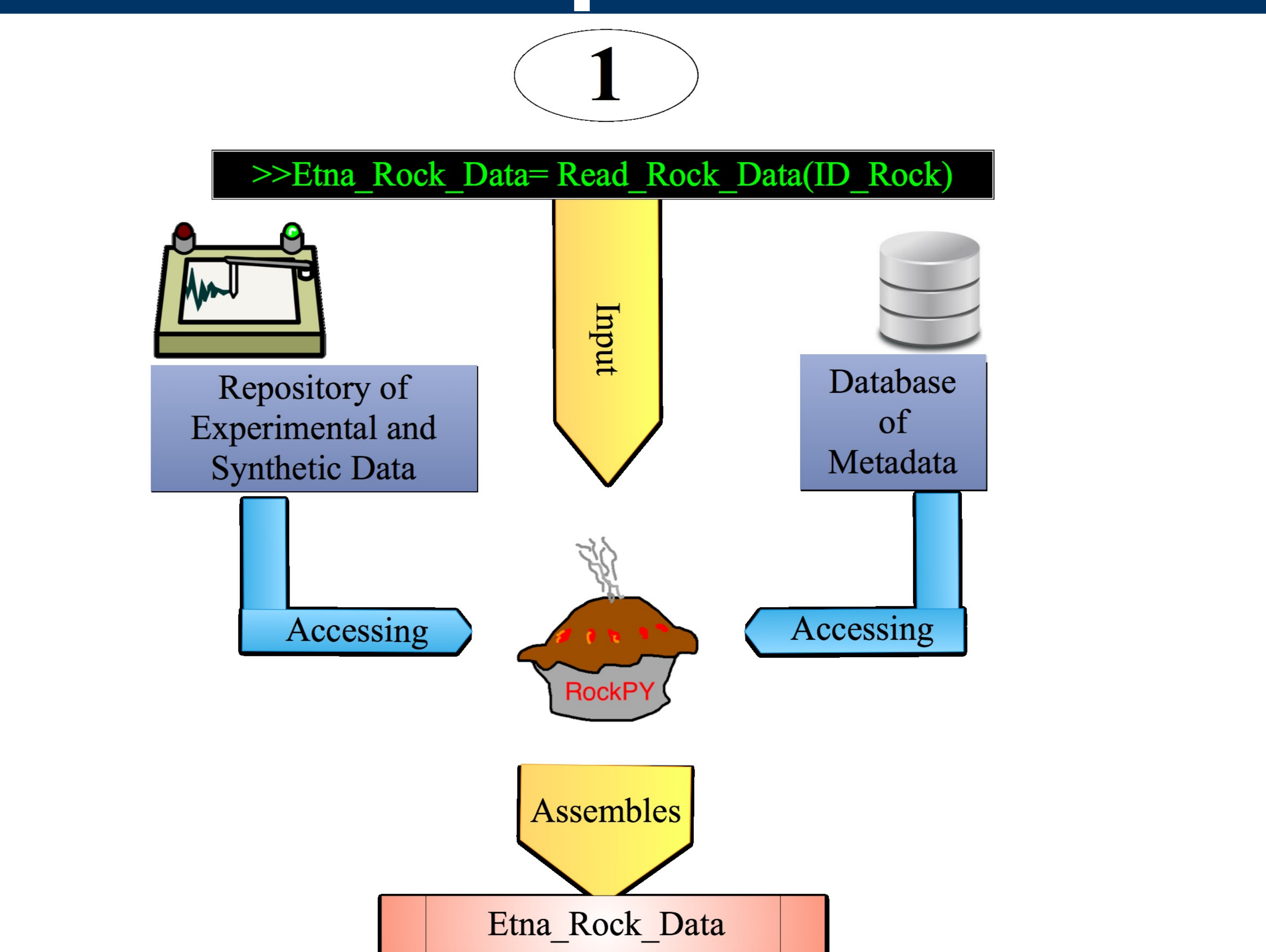


- Repository Data Matrix- Collections of observations
- Experiment Metadata Array- How, why and what of data's origin
- Operation Log- Records of researcher's work

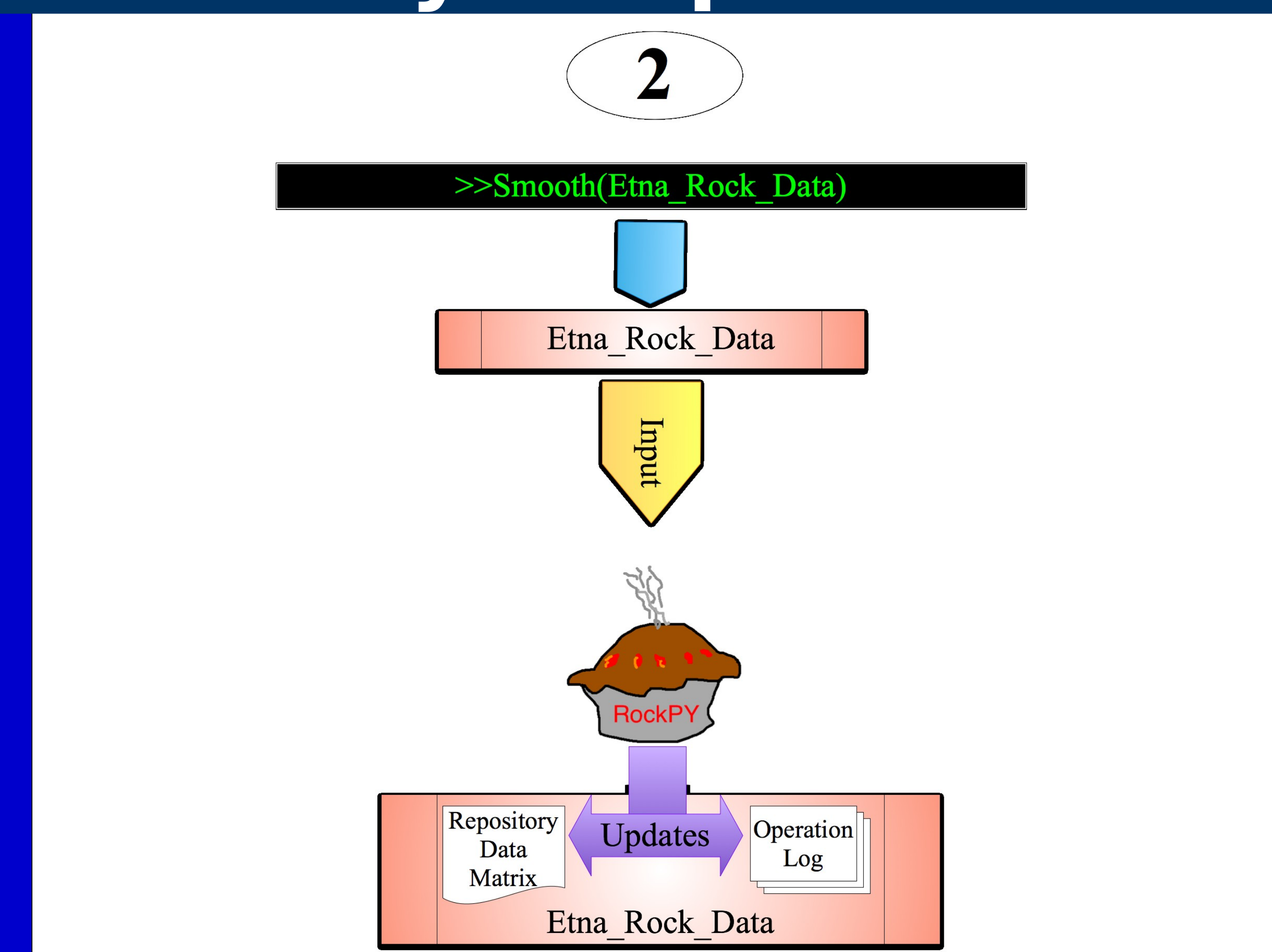
Sample Workflow



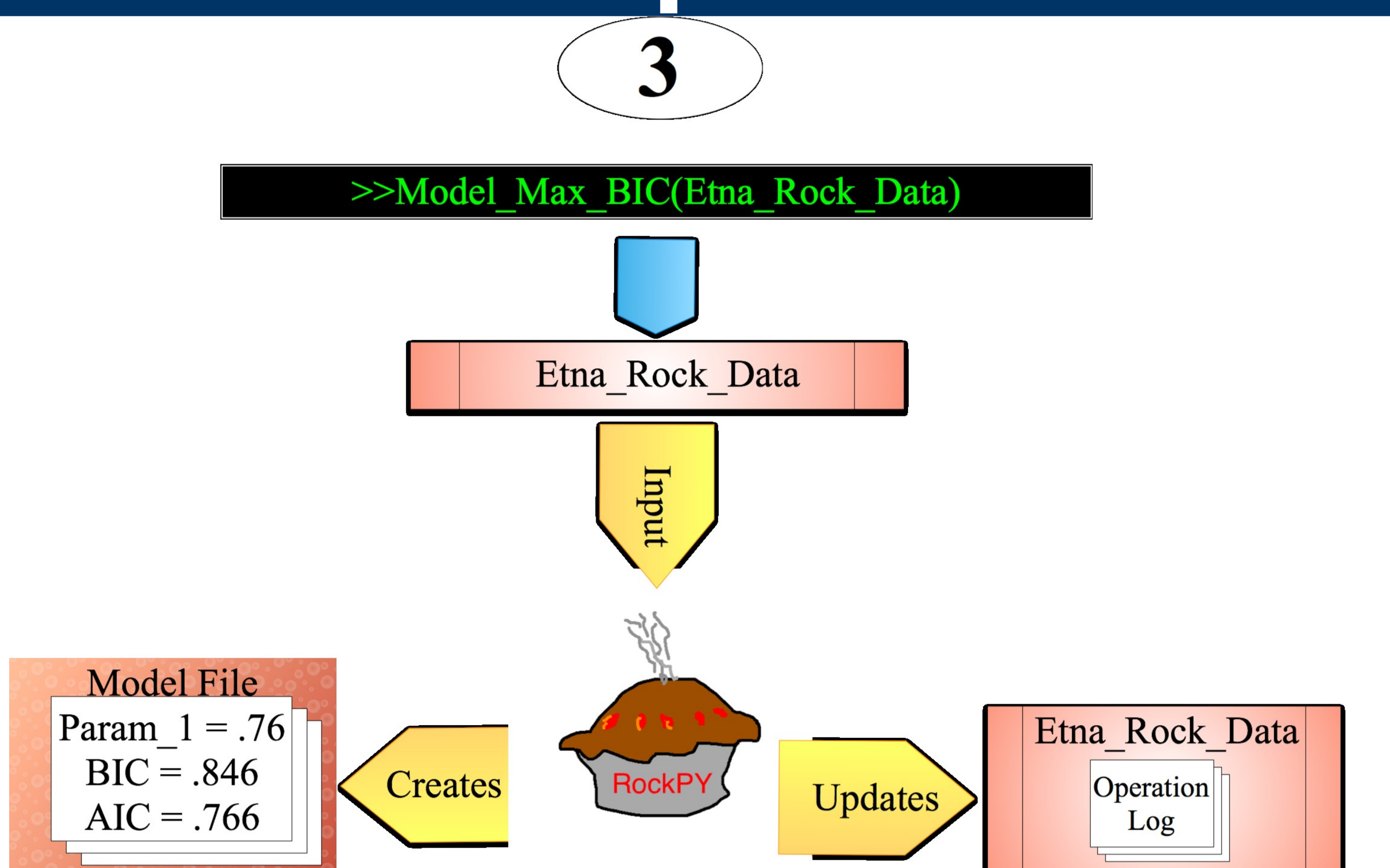
Read Operations



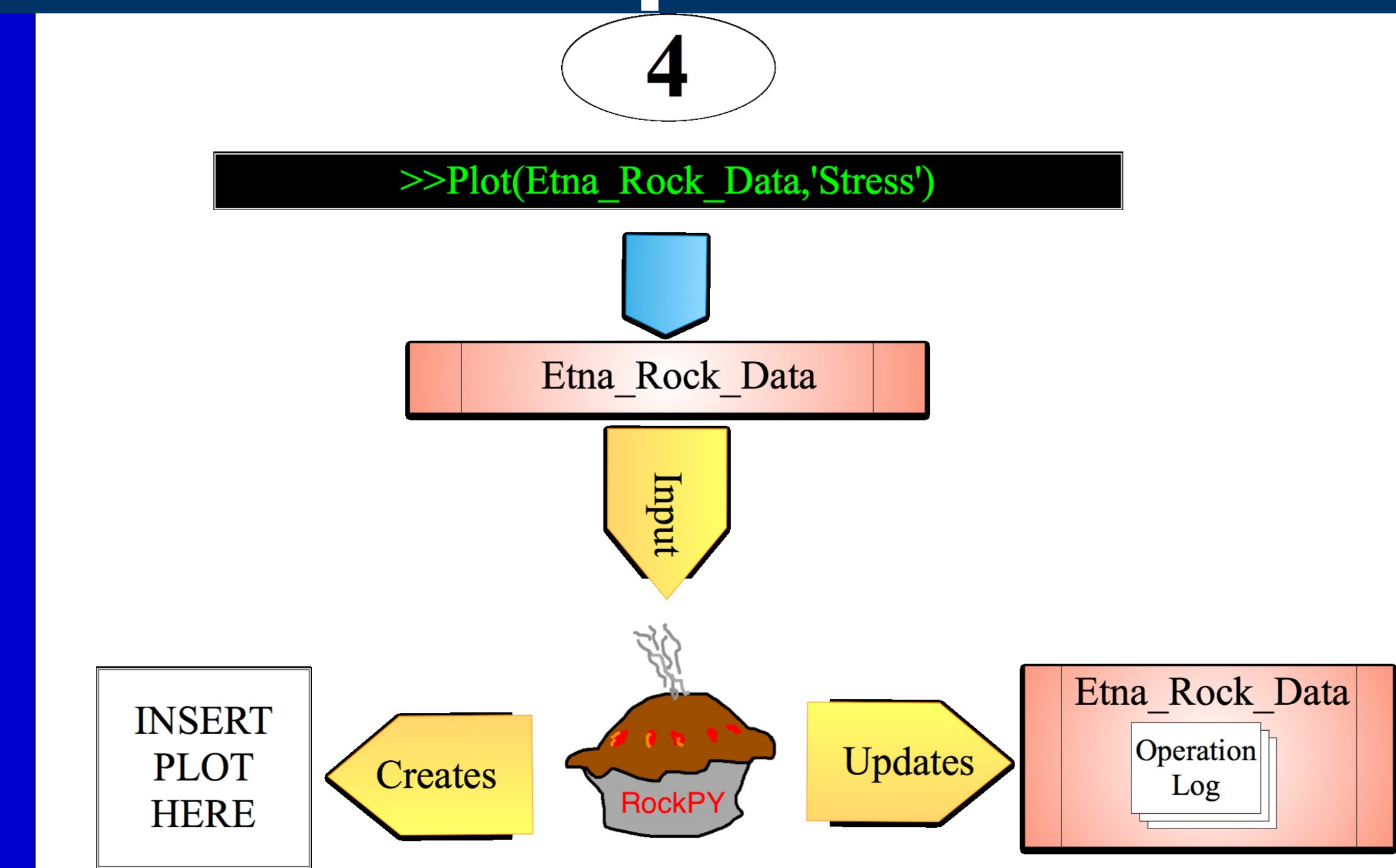
Analyze Operations



Model Operations



Plot Operations



Achievements

- A library of operations that enable researchers to access the EFFORT database with minimal data-mining and technical knowledge
- Flexible, modular design that enables users to create unique workflows to process their data and produce journal quality results
- To be continued....

Future Goals

- Creation of an interface that allows researchers to share workflows created to analyze observations from specific instruments and to make corrections for specific types of plots.
- Implementation of additional Model, Analyze and Plot Operations so that researchers will have more ways to obtain pertinent results from the data in EFFORT.
- To be continued...

References

A Bell, I Main, M Atkinson, R Filgueira, P Meredith, S Boon "Steps towards enhanced use of Rock Physics Data and Models" [In Prep]
<http://secondary.esbergen.eu/files/2011/12/mount-etna-eruption-2011-video.jpg>

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