

API Design

How to find the best practices?

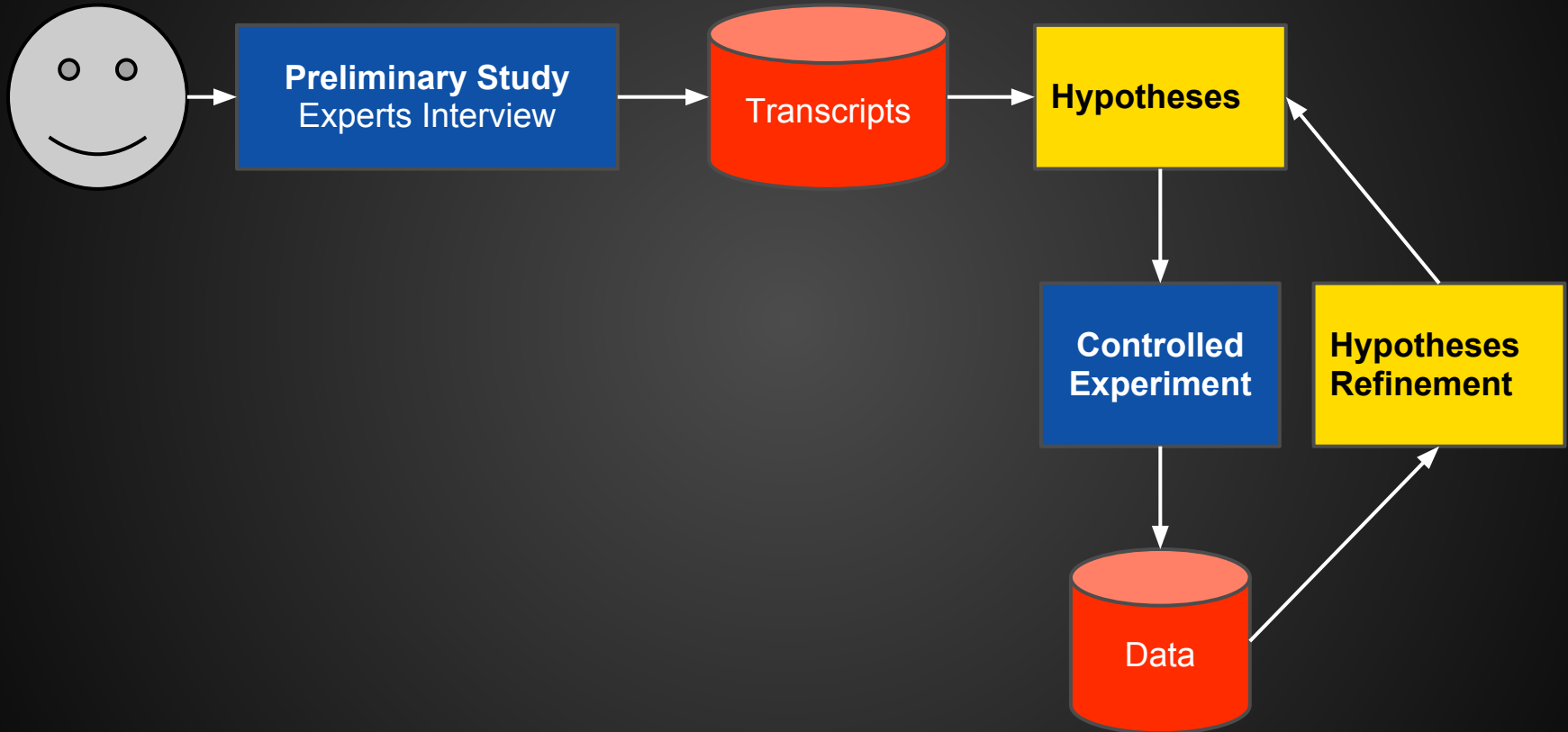
Motivation

Learning an API is hard

It takes time

Wrong understanding of an API can lead to bugs and/or be frustrating

Overall Process



Preliminary Study

What could be the best practices?

Qualitative interviews, e.g.

- experts in the particular field
- experienced end-users

Triangulation via population according to technical background (Linux kernel vs. Java vs. .NET developers.)

Preliminary data

Transcriptions: Isolate problems and preferences according to technical background.

Analysis of interviews may be used to form initial hypotheses

Assumption from preliminary study

Artificial assumption:

Preliminary study shows that the type/format of documentation impacts comprehension in terms of:

- learning
- ease of use
- maintainability of code using API

Hypothesis

- Do having javadoc improve the time to learn the API?
- Do having tutorials improve the time to learn the API?
- Do having both improve the time to learn the API?

Controlled Experiments

4 Treatments (Javadoc, Tutorial, Javadoc + Tutorial, no documentation).

Participants population : students (~ 40).

Random assignment of treatment to each participant.

Measure time required to perform a task involving the use of a particular API.

Repeat the experiment w/ several APIs.

Summary

