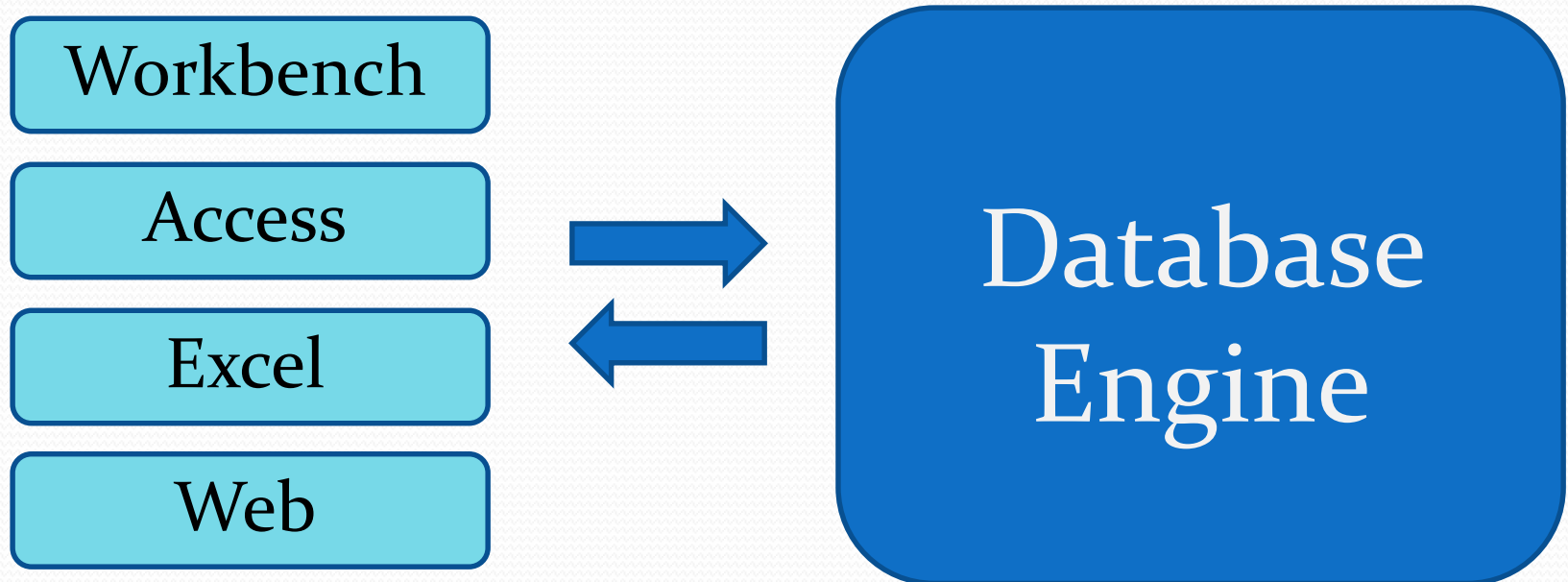# Distributed Databases

Promiscuous Server-based DBMS

- A server-based database management system allows many users (clients) to interact simultaneously, increases processing power, and reduces bandwidth.

Workbench

Access

Excel

Web

Database Engine

The WiderNet Wikipedia Database

SERVER

        Host: sils-wnegdemo.ad.unc.edu

   Username: unc

   Password: widernet

CLIENTS

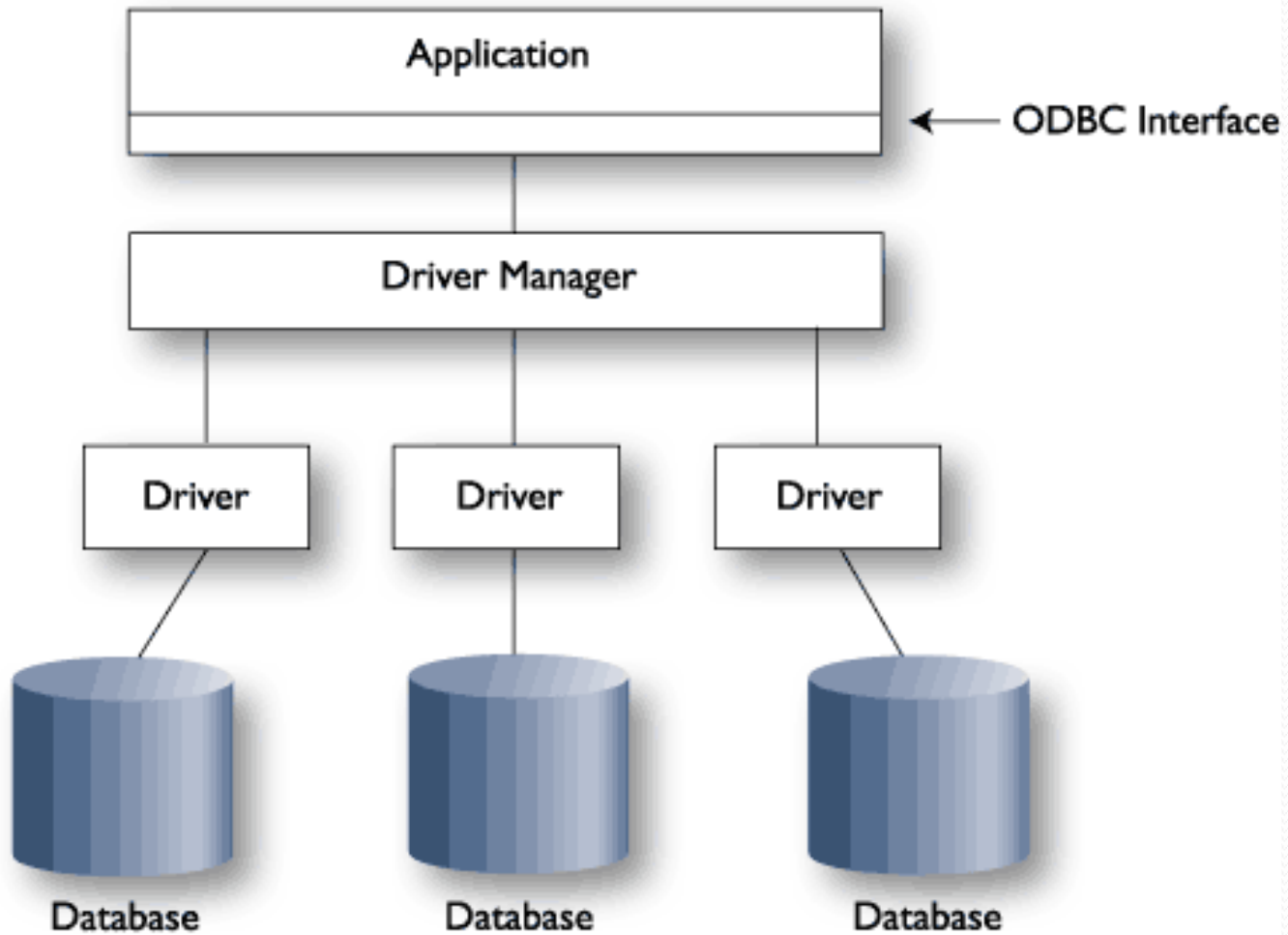   MySQL Workbench

        Excel

        SSH Command Line

        Web interface (phpMyAdmin)

        Etc.

ODBC - Open Database Connectivity

- Standard programming language middleware
- Relational and non-relational databases
- Translation layer
- CLI, JDBC, iODBC all based on ODBC
- Universal standard for cross-platform data access
- An ODBC-compliant application works with any DBMS that has a driver installed. (And almost every serious DBMS has a ODBC driver.)
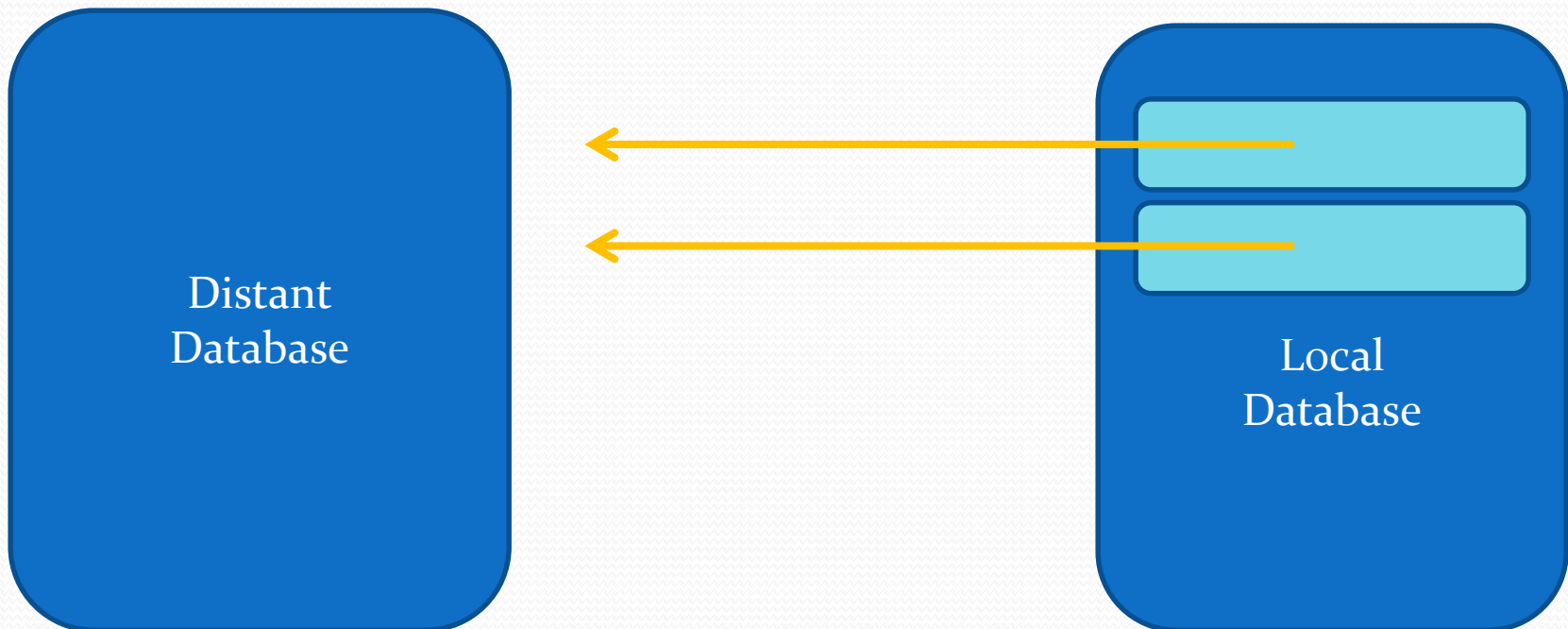- Buyer's assurance.

Distributing Storage

- Data is stored on one or more servers
- Edge technology
- Enterprise databases stored on multiple servers
- Redundancy
- Less-used data stored "nearline"
- [Google Data Center](#) video

Federation

- Data is stored on master server(s)
- Child servers maintain "views"
- Only structures and relationships stored locally

Distant Database

Local Database

Cloud Databases

- Upsides
  - Database storage and maintenance is centralized
  - Easier to deploy a new database
  - Lots of creative applications with easy collaborations
  - Saves bandwidth… yada, yada
- Downsides
  - Where's Waldo's data? Who's looking for it?
  - Tracking browsing, trading, and users
  - Lots of evil applications with easy collaborations
  - Increases bandwidth usage

Lightbeam Demo

- Who's zoomin' who?
- Firefox add-in to track the trackers

Databases Dominate!!!

She who has the best database wins…