

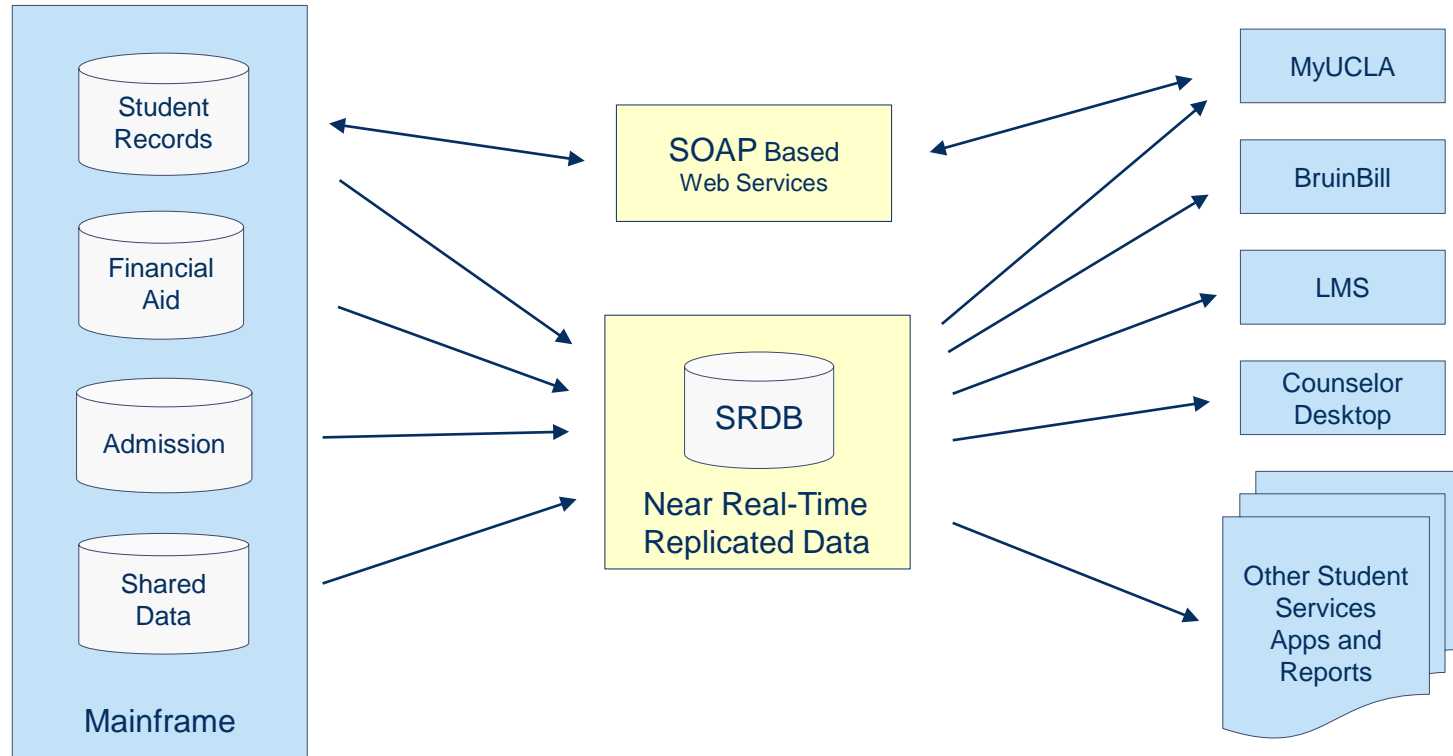
# Creating a REST API to Distribute Student Data for Departmental Applications

July 11, 2016

# *Student Records Database (SRDB)*

- Started in 1997 to Support Campus Demand for Student Data
- Source of Near Real-Time Student Data (5 minute Latency)
- Source of Blended Data
- Over 1500 Database Objects (Stored Procs, Views etc.)
- Major Component of Campus Infrastructure
  - Academic Support
  - Administrative Support
  - Operation/Production Support

# Current State of Data Distribution



Point to Point Solutions via SRDB and SOAP based Web Services

# *What is an API?*

API (application program interface) is a set of routines, protocols, and tools for building software applications

- Provides building blocks for graphical user interface
- Allows implementation in different ways without compromising the interface

# *What is a REST API?*

Representational State Transfer (REST) is a software architectural style.

<http://www.restapitutorial.com/lessons/whatisrest.html#>

- base URI
- standard HTTP methods (e.g., GET, PUT, POST, or DELETE)
- Internet media type for data (e.g., JSON, XML)
- hypertext links

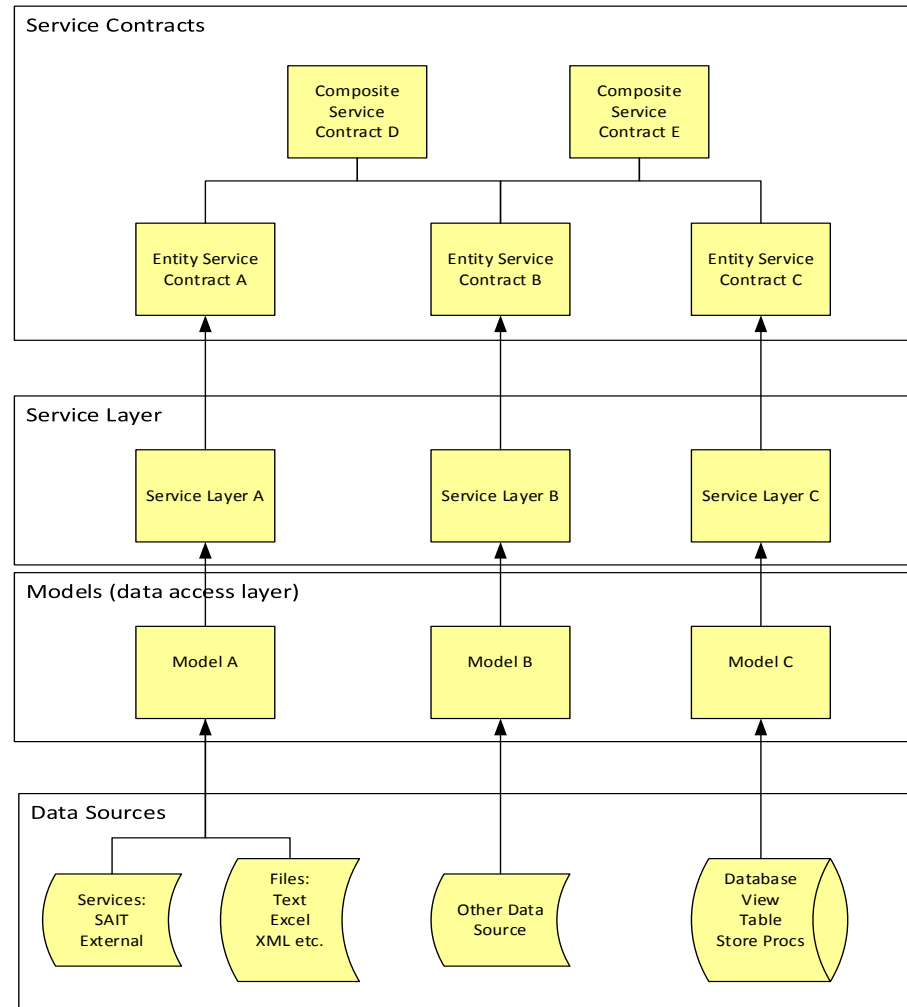
# *Service-Oriented Architecture (SOA)*

- **Service-Oriented Architecture:**
  - an architectural style that supports service-orientation
- **Service-Orientation:**
  - A way of thinking in terms of services (units of functionality)
- **Service:**
  - a logical representation of a repeatable business activity that has a specified outcome (e.g. Courses, Students, Rosters etc.)

# Service-Oriented Architecture

Services are composed of:

- Service contract layer
- Service logic layer
- Data layer



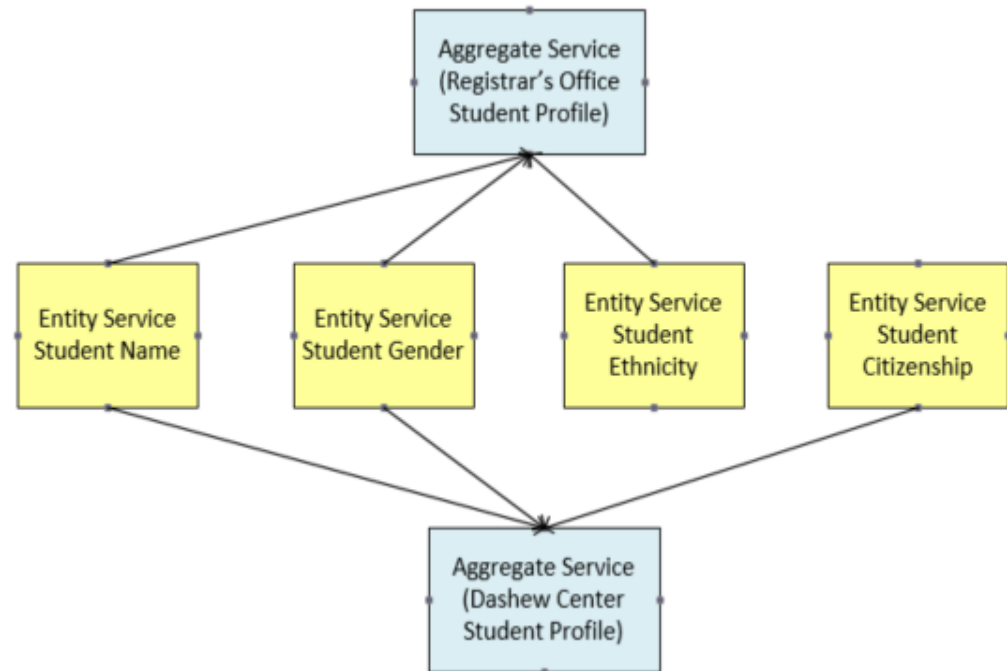
# Service-Oriented Architecture

- Utility Services:

- Based on non-business-centric functional contexts
- Example: Authentication, Authorization

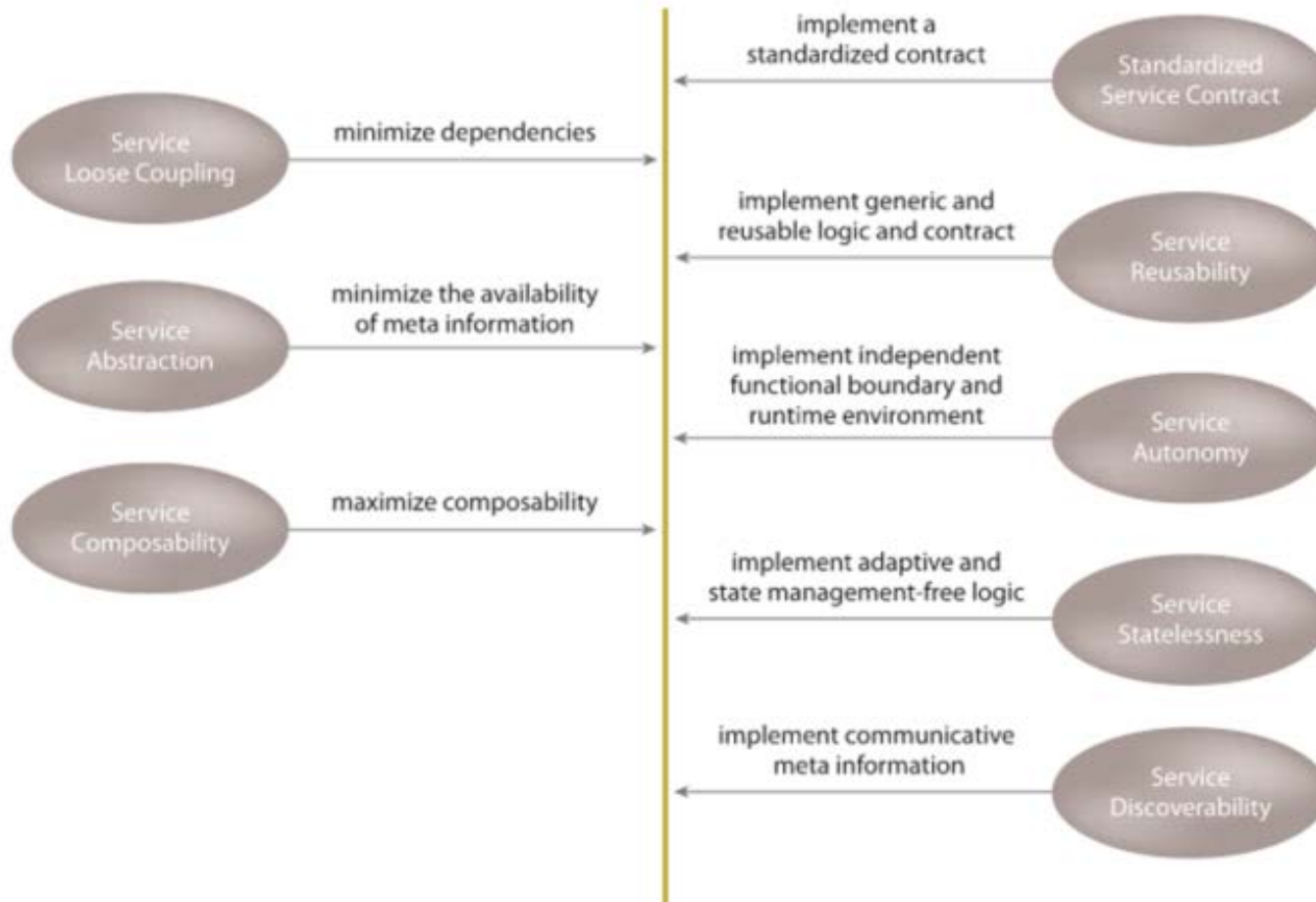
- Entity Services:

- Functional context derived from business entities
- Re-used in support of business processes
- Example: Student Ethnicity





# Service-Oriented Architecture



# RESTful API Demo