

Database Application Development

CISC437/637, Lecture #10

Ben Carterette

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Database Applications

- Most interaction with databases is through a higher-level application, not in the DBMS
 - A user working with an application can interact with a database without knowing anything about SQL, database schema, normal forms, functional dependencies, relational algebra, physical logic, ...
- General-purpose programming languages offer more flexibility than SQL for
 - Data manipulation and processing
 - Enforcing constraints
 - Presentation of data to the end user

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Software Tiers

- We can view a database application as consisting of three *tiers*:
 - 1. Database tier** comprising software that interfaces a host language to a database
 - 2. Application tier** comprising software written in the host language to accomplish application purpose
 - 3. Interface tier**, which provides the means for a user to work with the application

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Days & Times	Room	Instructor	Meeting Dates
MoWe 12:20PM - 1:10PM	Kirkbride Hall Room 006	Debra Yarrington	2/8/2010 - 5/18/2010

Section [021L-LAB\(9905\)](#) Status ●

Session Regular

Days & Times	Room	Instructor	Meeting Dates
Fr 11:15AM - 1:10PM	McDowell Hall Room 111	Staff	2/8/2010 - 5/18/2010

Section [310-LEC\(10573\)](#) Status ●

Session Regular

Days & Times	Room	Instructor	Meeting Dates
Th 5:00PM - 9:00PM	UD Acad Ct Dover T233	April Cleveland	2/8/2010 - 5/18/2010

▼ CISC 103 - Introduction to Computer Science with Web Applications

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Session Regular

Days & Times	Room	Instructor	Meeting Dates
Tu 6:00PM - 6:50PM	Memorial Hall Room 020	Staff	2/8/2010 - 5/18/2010

Database APIs

- A library with database calls – most modern languages have APIs for standard DBMS
 - Standardized interface (procedures/objects)
 - Construct SQL queries in language and pass through library procedures
 - Get results sets as objects that can be processed for nice display
- JDBC: Java API
 - Database-neutral: uses a driver to “translate” into the SQL flavor used by the underlying DBMS