Data Dev

Build a Database

teacher's quick-start tutorial



















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Session Outline

- Explore Basics of SQL
- Create a SQL Database
- Query Database using SQL
- Write a Simple PHP Webpage
- Develop PHP / MySQL Examples

SQL

How do you say **SQL**?

```
/εs.kjuːˈεl/
OR
/ˈsiːkwəl/
```

Structured Query Language

- programming and managing data in RDBMS
- ubiquitous database language

SQL

SQL functions fit into broad categories:

Data definition language

create database objects: tables, indexes and views define access rights to database objects

Data manipulation language

includes commands to INSERT, UPDATE, DELETE and retrieve (SELECT) data within database tables

Basic Query Structure

```
SELECT column1, column2, ... FROM table_name;
```

```
column1, column2, .... are the field names table_name ... is the table name
```

Exanded Query Structure

```
SELECT column1, column2, ...
FROM table_name
WHERE predicate/condition
ORDER BY columnX;
```

column1, column2, are the field names table_name ... is the table name predicate/condition ... allows us to filter our results order by ... ASC or DESC

SQL Keywords (a few of them)

AND/OR

ALTER

AS

BETWEEN

CREATE

DELETE

DROP

EXISTS

GROUP BY

HAVING

JOIN

LIKE

ORDER BY

SELECT

TRUNCATE

UNION

UPDATE

WHERE

UML

 The Unified Modeling Language is a general-purpose, developmental, modeling language in the field of software engineering, that is intended to provide a standard way to visualize the design of a system.

MODELING

Hands-On Exercises

Using Cloud9's PHP/MySQL Workspace Template:

- **IDE** exploration (using phpMyAdmin)
- Database creation
- Table creation
- Data insertion
- Query execution

https://github.com/mplyler/dev.catalyst-data.dev

PHP Basics

PHP (recursive acronym for PHP: Hypertext Preprocessor) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

PHP Syntax

A PHP script starts with <?php and ends with ?>:

```
<?php
// PHP code goes here
?>
```

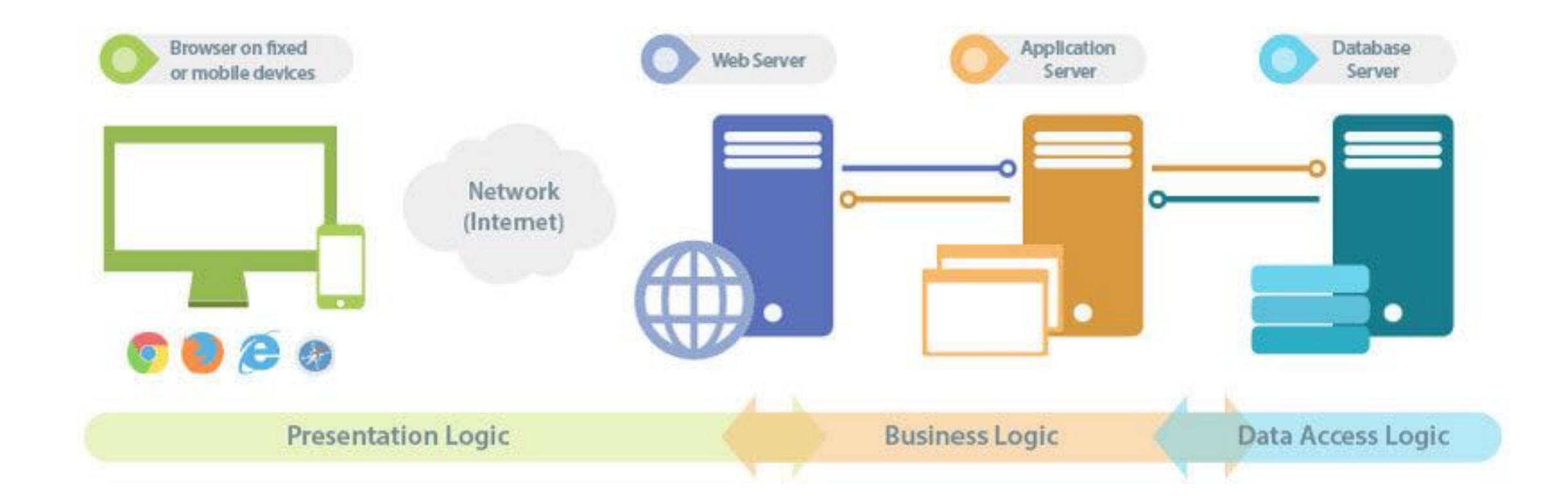
PHP Syntax

```
<!DOCTYPE html>
<html>
<body>
<h1>Basic PHP Page</h1>
<?php
 echo "Hello World!";
?>
</body>
```

PHP Syntax Facts

- php scripts can be added anywhere in the document
- keywords, classes and functions <u>are not</u> casesensitive
- variable names <u>are</u> case-sensitive
- variables start with \$, followed by name (cannot start with a number)

Web Server Diagram



Hands-On Exercises

Using Cloud9's PHP/MySQL Workspace Template:

- Hello World
- Connect to Database
- Simple Data Submission
- Form Submit (with "AJAX" functionality)

https://github.com/mplyler/dev.catalyst-data.dev

The Next Steps

- Build on Basic Examples
- Challenge Yourself to Create a Small Project
- Develop a Balanced Approach:
 80% Preparation/Planning
 20% Coding

Questions?



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