Introduction

A First Course on PHP and
Apache web Development

Objectives

- At the end of this session, the participants should be able to:
  - Explain what Open Source Software is all about
  - List some reasons why Open Source Software is becoming popular
  - Explain the background of the Free Software Foundation and GNU GPL
  - Learn basic web development: to be able to create web pages using open source tools.
  - Acquire Apache and MySQL installation skills.

Prerequisites

- Basic PC and internet skills.
- Targeted audience: government employees, non-IT learners, educators and SMB.
- HTML

Training Outcome

- Awareness on the alternatives available for web development.
- Provide basic skills to get started on web development
- Create a simple web application.

Lab Requirements

- Hardware: Pentium III, 256 MB RAM, 20 GB HDD.
- Software: LAMPPIX
- Network: Basic LAN

Roadmap

- Introduction - LAMP.
- Installation: LAMP
- Syntax overview of SQL and PHP
- BREAK
- Exercises
  - “hello world” in PHP
  - CRUD functionality using SQL
  - Apache file management

The Apache Web Server

- An Open Source Web Server
- Available for a variety of platforms
  - Linux, Mac OS X, MS-Windows
- The Most Popular Web Server on the Internet
  - Apache is the most popular web server in the world, with nearly 70% of all web sites running Apache as of January 2006, according to the netcraft web server survey.
  - Why is it so popular? Because it's free, open-source, high-quality software. And you can run it on your Windows box at home!
  - http://httpd.apache.org/

MySQL

- “The World’s Most Popular Open Source Database”
  - More than five million active installations
- Now being used for mission critical applications by:
  - Yahoo!
  - Google
  - HP
  - NASA
- Available for many platforms
  - Linux, Mac OS X, MS-Windows, etc.
- http://www.mysql.com

PHP: PHP Hypertext Preprocessor

- General Purpose Scripting Language that makes creating dynamic web pages easy!
- The PHP interpreter allows for mixing of PHP and HTML
- http://www.php.net

Syntax Overview: SQL CREATE

- Create a new table within a database

CREATE TABLE *table_name*

(*column_name type*

[NOT NULL | NULL]

[DEFAULT *default_value*]

[AUTO_INCREMENT] [PRIMARY KEY]

) TYPE= *type_name* ;

Syntax Overview: SQL INSERT

- INSERT INTO table_name [(column1, column2...)] VALUES(value1, value2...)

- Example
  INSERT INTO lecturer VALUES (1,’Jack’)

Syntax Review: SQL SELECT

- SELECT *column1* [,*column2*]...

  FROM *table_name* [,*table_name2*]...

  [WHERE *condition*] [ORDER BY *column1* [,*column2*]...]
- Example

SELECT * FROM course

SELECT * FROM course WHERE lecturer_id = 2;

SELECT * FROM lecturer WHERE Name = ‘Jill’;

SELECT * FROM lecturer WHERE Name Like ‘J%’;

Syntax Review: PHP

- HTML with PHP code embedded in it
- PHP code is enclosed in

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

- Short form:

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

Syntax Review: PHP Variables

- Do not need declaration
- Starts with a “$” sign
- Example
  - `$a = 1000;`
  - `$b = 1.234;`
  - `$c = “Jack”;`
  - `$d = ‘Jill’;`

Syntax Review: Generated PHP

- Use the `print` or `echo` statement
- Example:

```
<HTML><BODY>
<?php
    print(“Hello world!”);
    print “Hello world!<br>”;
    echo “<h1>Hello world!</h1>”;
?>
</BODY></HTML>
```

Syntax Review: PHP Form Processing

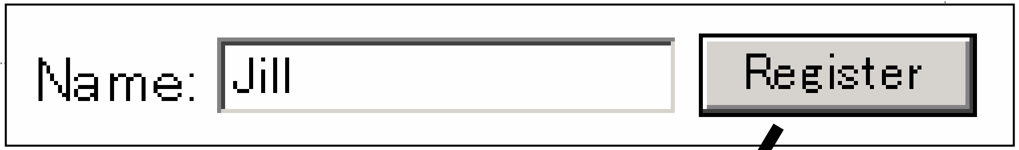
- Targeted server-side PHP program should handle the data
- The target PHP program is specified by `ACTION` attribute
- Three predefined array to access form data:
  - $_GET – submitted by GET method
  - $_POST – submitted by POST method

Syntax Review: PHP Form Processing

- Example

form.html

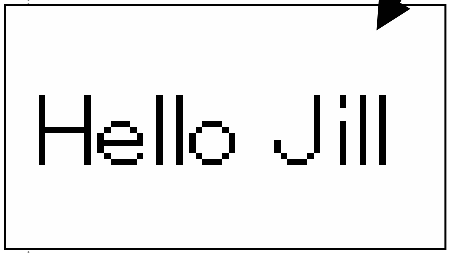
```
<form method="POST"  action="register.php">
Name: <input type="text" name="NameText">
<input type="submit" value="Register">
</form>
```



Name: Jill

register.php

```
<?php
  $name = $_POST['NameText'];
  print("Hello $name");
?>
```



Hello Jill

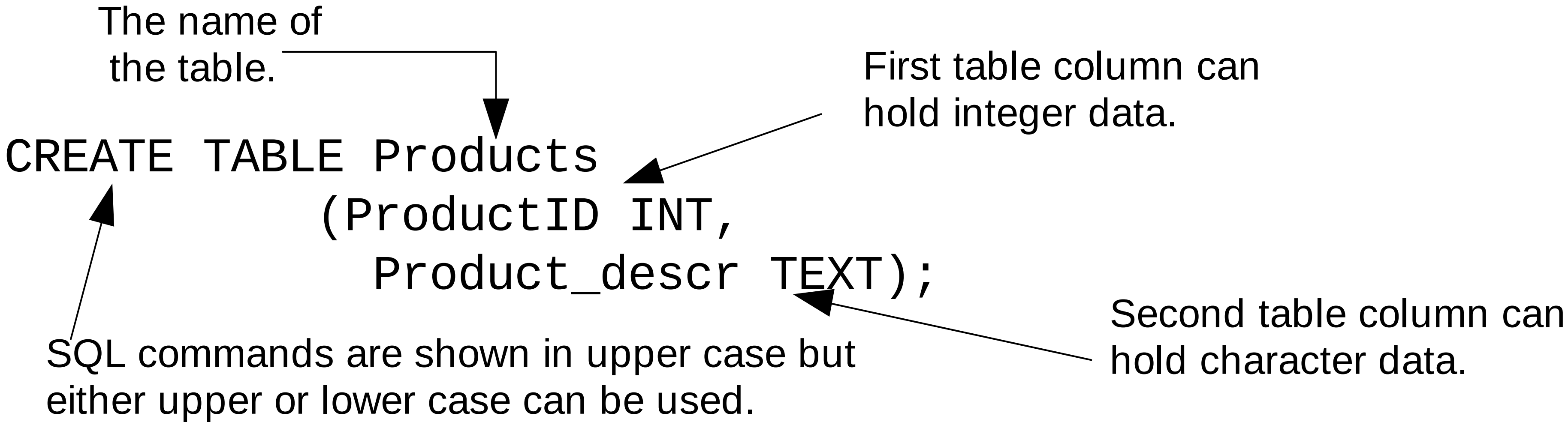
Exercise 1: Simple PHP

- One way to use PHP is to embed PHP scripts within HTML tags in an HTML document.

```
<html>
    <head>
    <title>HTML With PHP Embedded</title> </head>
    <body>
    <font size=5 color=”blue”>Welcome To My Page</font>
    <?php
        print ("<br /> Using PHP is not hard<br />");
    ?>
    and you can learn to use it quickly!
</body></html>
```

Exercise 2: Creating Your Database Tables

- Once the database instance is created you need to create your tables.
  - Use SQL CREATE TABLE command



The name of the table.

First table column can hold integer data.

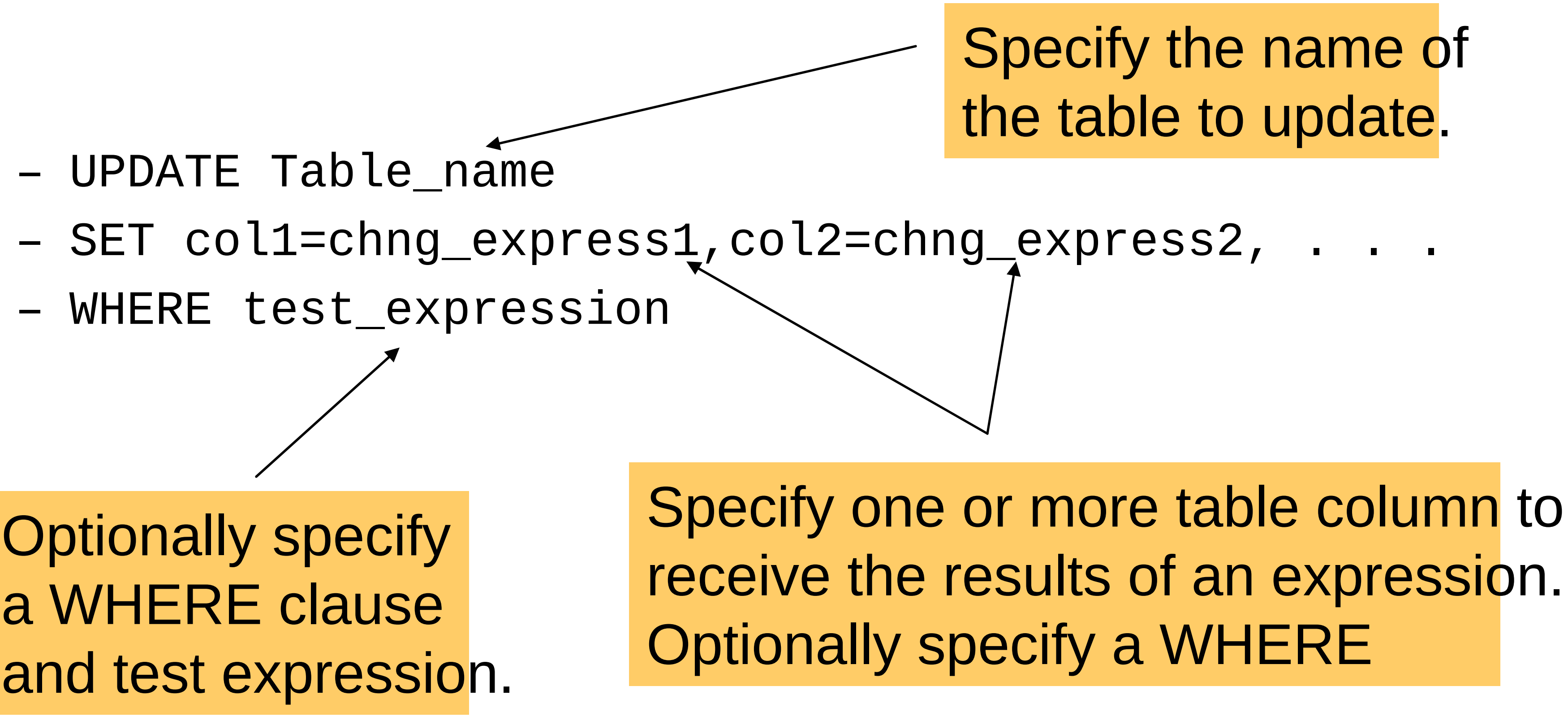
```
CREATE TABLE Products
          (ProductID INT,
            Product_descr TEXT);
```

Second table column can hold character data.

SQL commands are shown in upper case but either upper or lower case can be used.

Exercise 3: Updating a Database Record

- Use SQL UPDATE command when needing to update a database record:



  - `UPDATE Table_name`
  - `SET col1=chng_express1,col2=chng_express2, . . .`
  - `WHERE test_expression`

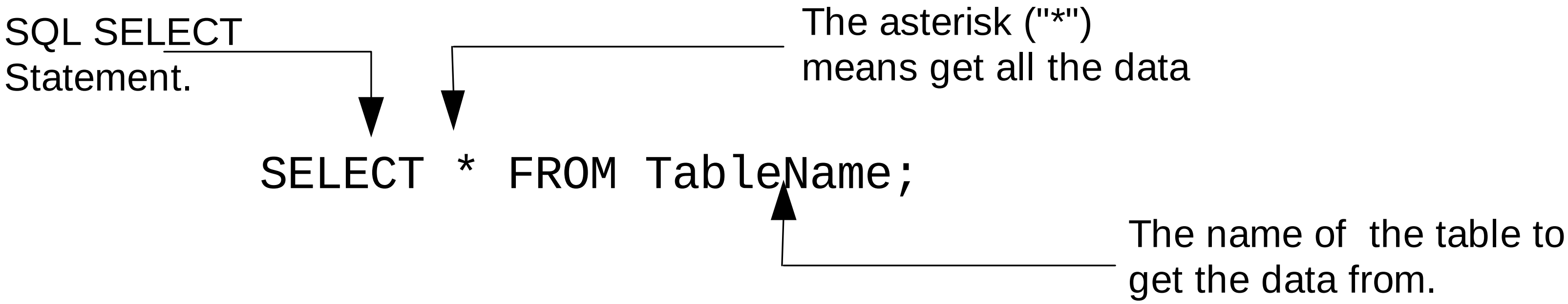
Specify the name of the table to update.

Specify one or more table column to receive the results of an expression. Optionally specify a WHERE

Optionally specify a WHERE clause and test expression.

Exercise 4: Retrieving Data

- To retrieve all data, use the following SQL command



SQL SELECT Statement.

The asterisk ("*") means get all the data

```
SELECT * FROM TableName;
```

The name of the table to get the data from.

- For example

```
1. $connect = mysql_connect('Localhost', 'phppgm',
   'mypasswd');
2. $SQLcmd = 'SELECT * FROM Products';
3. mysql_select_db('MyDatabase');
4. $results_id = mysql_query($SQLcmd, $connect);
```

Exercise 5: Apache File Management

- Apache Logs

- To see the content of the log file, say **access.log**.
- # cat /var/log/apache/access.log

Exercise 5 (cont’d)

- Configure PHP

-
  ```
  # cd /etc/apache
  # cat modules.conf
  ...
  LoadModule php4_module /usr/lib/apache/1.3/libphp4.so
  ```

-
  ```
  # cd /etc/apache/conf.d
  # cat php4.conf
  <IfModule mod_php4.c>
    AddType application/x-httpd-php .php .phtml .php3
    AddType application/x-httpd-php-source .phps
  </IfModule>
  ```

Help on the Internet

- http://linuxcommand.org
  - Linux command terminal
  - Tutorials and Linux shell scripts
- http://www.php.net
- http://www.linuxplanet.com
  - Online magazine / newspaper type of information on Linux
- http://www.linux.org
  - Linux history and information
  - Linux distributions
  - Downloadable applications
  - http://www.apache.org