

CIW Application Developer Series – Course 1: Fundamentals of CGI Using Perl (March 2003)

Fundamentals of CGI Programming Using Perl is a 12-hour course that teaches students how to use Common Gateway Interface (CGI) Perl programs and scripts on a Web server. Students will learn how to write print-to-screen scripts, customize Web page hit counters, create and use business forms that interact with text files, manipulate data in a database, work with a relational database via Open Database Connectivity (ODBC), and explore Web server security issues related to CGI files.

Topics

Application Development Fundamentals

The Application Development Process
Platforms, Languages and Protocols
Client-side Versus Server-side
Scripting
Hypertext Transfer Protocol

Introduction to CGI and Perl

Web Architecture Overview
What Is CGI?
Why Use CGI?
What Is Perl?
Why Use Perl?

Creating a Simple Script

Key Concepts and Syntax
Scalar Variables in Perl

Perl Fundamentals

Accessing Environment Variables
Using CGI.pm to Access Environment Variables
The *if* Statement
Logical Expressions
Regular Expressions and Pattern Matching
Perl Arrays
Passing Values to Functions
Associative Arrays
Loops

Perl File Input and Output Capabilities

File IO Using File Handles
File Modes
Using Files in Scripts
Creating a Hit Counter

Controlling Processing and Output

Introduction to CGI.pm
Incorporating HTML into Perl using CGI.pm
Using CGI.pm to Access Form Data
Processing User-Entered Data
Using One File to Create and Process an HTML Form
Using Perl to Validate Form Input
Testing Your Script Offline

Saving User-supplied Data to a File

Saving Form Data to a File
Modifying Form Data
Pattern Matching Revisited

Reading a File

Introduction to Data Reading
Pattern Matching with Regular Expressions
Substitution

Introduction to Databases

Introduction to Database Programming
Four Steps to Interacting with Databases
Connecting to Databases
Structured Query Language
Quoting Revisited
Querying Table and Field Names
Web Database Query Example

Deleting and Inserting Database Records

Modifying Data in a Database
The *do* Method
Web Database Control Example

CGI Security Issues

Type of Attacks
Securing the CGI Script
Securing the Server
Securing Form Data
Securing Data Passed to Commands

Resources (Appendix)

Installing Apache Server
Installing Perl on UNIX and Win 32
Requirements Documents

Target Audience

Webmasters, software developers, application programmers, client/server developers, and desktop publishers.

Job Responsibilities

Create interactive Web pages using client- and server-side Web applications; access relational database systems from Web applications; implement applications using component technology; and create parameters for environment variables.

Prerequisites

Students must have CIW Foundations certification or equivalent experience, and have completed the Web Languages series (*JavaScript Fundamentals* and *Perl Fundamental*) or have a working knowledge of client-side scripting, JavaScript or VBScript.

Duration

12 hours