

CGI Programming Using Perl

Course Duration: 24 Hours

Course code: GCI

1. Course Overview

The CGI Programming Using Perl course focuses on building dynamic, interactive web applications using Perl and the Common Gateway Interface (CGI). This course explains how Perl scripts interact with web servers to process user input, generate dynamic web content, and connect backend logic with frontend interfaces. Learners will gain practical exposure to form handling, session management, database connectivity, and web security using Perl CGI.

2. What you'll learn?

By the end of this course, learners will be able to:

- Understand the CGI architecture and web request lifecycle
- Configure and execute Perl CGI scripts on a web server
- Handle HTML forms, GET and POST methods
- Generate dynamic web pages using Perl
- Manage cookies and sessions
- Validate user input and handle errors securely
- Integrate Perl CGI with databases
- Implement basic web security practices
- Debug and deploy CGI-based Perl applications

3. Target Audience

This course is ideal for:

- Perl programmers entering web development
- Web developers working with backend scripting
- System administrators managing web servers
- Legacy application developers maintaining CGI-based systems

- Students and IT professionals learning server-side programming

4. Pre-Requisites

To get the most out of this course, learners should have:

- Knowledge of basic Perl programming
- Understanding of HTML fundamentals
- Familiarity with web concepts (HTTP, client-server model)
- Basic knowledge of Linux/Unix environment (recommended)

5. Course content

Module 1: Introduction to CGI and Perl

- Overview of CGI architecture
- Role of Perl in server-side scripting
- Client-server interaction model
- Setting up Perl CGI environment

Module 2: Web Servers and CGI Configuration

- Understanding web server basics
- Configuring CGI in Apache
- File permissions and security
- Testing CGI scripts

Module 3: Perl CGI Script Structure

- Anatomy of a CGI program
- HTTP headers and content types
- Generating HTML output using Perl
- Debugging CGI scripts

Module 4: Handling User Input

- HTML forms and form elements

- GET vs POST methods
- Retrieving and processing form data
- Input validation techniques

Module 5: Using CGI.pm Module

- Introduction to CGI.pm
- Form handling using CGI.pm
- Parameter parsing
- Generating HTML with CGI.pm

Module 6: Cookies and Session Management

- Understanding cookies
- Creating and retrieving cookies in Perl
- Session handling techniques
- Maintaining user state

Module 7: Database Integration

- Connecting CGI scripts to databases
- Using DBI with Perl CGI
- Executing queries securely
- Displaying database-driven content

Module 8: File Uploads and Downloads

- Handling file uploads
- Managing file storage
- Downloading files securely
- Validation and error handling

Module 9: Security in CGI Applications

- Common CGI security risks

- Input sanitization
- Preventing command injection and XSS
- Secure coding best practices

Module 10: Deployment and Real-World Applications

- Deploying Perl CGI applications
- Performance considerations
- Logging and monitoring
- Real-world CGI-based web application examples

