



Linux Learning Centre

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Training & Certification

Programmes at LLC

LLC102: Essentials of Linux OS
LLC103: Linux System & Network Administration
LLC203: Linux Advanced Administration
LLC303: Linux System & Network Monitoring Tools
LLC104: Linux Internals & Programming Essentials
LLC105: Programming with Qt
LLC106: Device Driver Programming on Linux
LLC107: Network Programming on Linux
LLC108: Bash Shell Scripting Essentials
LLC109: CVS on Linux
LLC204: MySQL on Linux
LLC205: Programming with PHP
LLC206: Programming with Perl
LLC207: Programming with Python
LLC208: PostgreSQL on Linux
LLC209: Joomla CMS
LLC210: Drupal CMS
LLC403: Qmail Server Administration
LLC404: Postfix Mail Server Administration
LLC405: Linux Firewall Solutions
LLC406: Open LDAP Server Administration
LLC408: Samba Server Administration
LLC409: DNS Administration
LLC410: Nagios - System & Network Monitoring Software
LLC412: Apache & Secure Web Server Administration
LLC414: Web Proxy Solutions
LLC501: Programming with OpenGL
LLC504: Linux on Embedded Systems
LLC602: Linux Apache MySQL & PHP (LAMP)
RH033: Red Hat Linux Essentials
RH133: Red Hat Linux System Administration
RH253: Red Hat Linux Network & Security Administration
RH301: Red Hat Rapid Track Certification Course
RHS333: Red Hat Enterprise Security : Network Services
RH423: Red Hat Enterprise Directory Services & Authentication
RHS429: Red Hat Enterprise SELinux Policy Administration
RH318: Red Hat Enterprise Virtualization
RH401: Red Hat Enterprise Deployment & Systems Management
RH436: Red Hat Enterprise Clustering & Storage Management
RH442: Red Hat Enterprise System Monitoring & Performance Tuning
RH142: Linux Troubleshooting Techniques & Tools
RH184: Red Hat Enterprise Linux Virtualization
SUSE3071: SUSE Linux Enterprise Server Fundamentals
SUSE3072: SUSE Linux Enterprise Server Administration
SUSE3073: SUSE Linux Enterprise Server Advanced Administration

Programming with OpenGL

Course Overview

This course is tailor made for the wannabe 3D graphics enthusiast. The course initiates a person with 3D programming using OpenGL and provides a foundation of OpenGL concepts using which you can begin exploring the capabilities of OpenGL and write 3D enabled applications. At the end of the course you would be able to create 3D scenes, orient objects in the scene, place lights in the scene, apply texture and use transparent objects in the scene. The course has a hands on approach to teaching OpenGL in that the participants will take part in designing and implementing a C++ library on top of OpenGL to help create simple 3D scenes.

Pre-Requisites

Sound knowledge of C and C++. Knowledge of Qt, (LLC105) would be a plus point.

Basic knowledge of Trigonometry, Matrices and Algebra and other related math domains.

Target Audience

The course is targeted at developers who have not worked or worked little on 3D programming libraries. This course is a must for developers interested in learning about OpenGL and getting started with 3D Programming.

Course Material

The courseware includes a comprehensive collection of material useful as a course guide and further as a reference book for Programmers.

Post Training Support

Candidates can clarify any doubts on the topics covered in the course over email for a period of 30 days after the conclusion of the course.

Course Duration

Three Days: 10 am - 5.30 pm

Course Fee

Rs. 12,000/- (plus 10.3% service tax)

Mode of Payment

The course fee has to be paid completely in advance by cash / Credit-Debit Card / Cheque / Demand Draft payable in Bangalore City in favour of "**Linux Learning Centre Private Limited**". The registration can be forwarded along with the payment by hand or by courier.

Course Outline

Introduction
Getting Started with OpenGL
- What is OpenGL
- Materials provided in the course
- Your First OpenGL Program
- The QGLWidget Class
- The initializeGL() method
- The paintGL() method
- The resizeGL() method
- OpenGL Command Syntax
- Function Naming Convention
- Constants, Datatypes & Macro naming conventions
- OpenGL as a State Machine
- Libraries related to OpenGL
- Animations in OpenGL
Drawing Objects
- Describing a Solid Object: Geometry & Topology
- OpenGL Primitives
- Primitive Types
- Polygon construction rules
- Solid Object Examples
- Cube
- Cone
- Cylinder
- Drawing solid objects using GLUT Library
Coordinate Transformations
- Types of transformations
- Translation
- Scaling
- Rotation
- Matrix Representation of Transformations
- Vertex Matrix
- Translation Matrix
- Scaling Matrix
- Rotation Matrix
- Composition of transformation matrices
- Understanding transformations in OpenGL
- Eye Coordinates
- Viewing Transformations
- Modeling Transformations
- The Model View duality
- Projection Transformations
- Viewport Transformations
- Specifying Transformations in OpenGL
- Atom Example
Camera Manipulation
- Viewing in 3D
- Projection
- Parallel Projection Math
- Perspective Projection Math
- Model View Duality
- Atom Example Improved
- Parallel and Perspective Projections.
Lights, Color, Materials, depth test
- Representation of a color in OpenGL
- Specifying Color in OpenGL
- Shading
- The Color Cube
- Colors in the Real World
- Light Concepts and Categories
- Ambient Light
- Diffuse Light
- Specular Light
- Materials Concepts
- Surface Normals.
- OpenGL Lights and Materials.
- Spot Lights
- Drawing Curved Surfaces
- The glColorMaterial() function
Texture Mapping
- Specifying the texture
- Indicate how the texture is to be applied to each pixel.
- Enable texture mapping.
- Draw the scene, supplying both texture & geometric coordinates.
XModel: Simple C++ wrapper for OpenGL
OpenGL Based Toolkits
- Open Inventor
- OpenSG
- VTK