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Sign up

PowerBuilder Core Training

3 days (21 hours)

Presentation

Master PowerBuilder and its core technology with this immersive training course designed for developers and technical managers wishing to modernize, maintain or upgrade existing applications.

You'll start by exploring the PowerBuilder environment and its fundamentals: PowerScript, visual objects, DataWindow and application structure. You'll learn how to manipulate data efficiently and build robust, modular interfaces.

You'll then delve into the art of design with DataWindow, the functional heart of PowerBuilder, learning how to manage interactions with the database, filters, sorts, conditional expressions and dynamic validations.

The course will also guide you towards modern challenges: REST service calls, application security, reusable components, interoperability with .NET thanks to SnapDevelop and .NET DataStore for a more scalable architecture.

Like all our training courses, this one is based on the latest stable version of PowerBuilder.

Objectives

- Understand PowerBuilder's fundamental architecture and key components
- Design, structure and maintain a modular, secure and scalable PowerBuilder application, applying best development practices.
- Master the DataWindow and its advanced features to manipulate, display and update data in a powerful, declarative way
- Be able to open a PowerBuilder application to modern services
- Adopt best practices in deployment, logging, versioning and maintenance to ensure the longevity of a PowerBuilder application base in production.

Target audience

- Back-end developers
- .NET developers

Prerequisites

- Basic knowledge of SQL

PowerBuilder Core training program

Introduction to PowerBuilder

- PowerBuilder overview
- Client/server architecture
- Workspace, projects, objects
- PBL and PowerBuilder objects
- PowerBuilder application life cycle

PowerScript language

- Data types
- Variables, conditions, loops
- Functions and procedures
- Object-oriented programming
  - Class creation and inheritance
  - Encapsulation, overloading
- System and custom events
- User function calls

DataWindow, the heart of PowerBuilder

- DataWindow vs. DataStore
- Creation via DataWindow Painter
- Data sources
- Expressions, filtering, sorting
- Conditional expressions
- DataWindowChild and linked objects
- Automatic binding
- CRUD
- Commit, rollback, transactions

Application structuring

- Window types (Main, Response, MDI)
- Navigation and controls
- Contextual and system menus
- User objects (NVO)
- In-house and reusable frameworks
- Error handling
  - Try/Catch/Throw in PowerScript
  - Centralized management strategies

Security and data access

- Authentication and authorization
- Dynamic element masking
- Controlled SQL access
- Application-side encryption
- Technical and functional logs
- User events

Interfacing and opening to the Web

- DLLs, COMs, system APIs
- Calls to third-party executables
- Consuming a Web Service
- Creating a REST API layer with SnapDevelop
- C# calls from PowerBuilder
- Migrating to .NET with .NET DataStore

Development tools

- PowerBuilder IDE
  - PBT, PBL and PBD files
  - Code generation and organization
- Debugging and maintenance
  - PowerBuilder Debugger
  - Debugging DataWindows

Deployment and administration

- P-code vs. Machine Code compilation
- Runtime and executable generation
- Local, file server, network
- PowerClient (automated deployment)
- Maintenance and versioning
  - PBL management
  - Application versions and patches

PowerBuilder modernization with .NET and Cloud

- Introduction to SnapDevelop
  - IDE for Web services/API REST
  - PowerScript? mapping C#
  - .NET DataStore
- Headless DataWindow
- Towards a hybrid architecture
- Maintaining a PowerBuilder core
- Logic deported to modern services

Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology, or to acquire specific business knowledge or modern methods.

Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

Teaching methods

Practical training: 60% hands-on, 40% theory. Training material distributed in digital format to all participants.

Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

Certification

A certificate will be awarded to each trainee who has completed the entire course.