Updated 20/06/2023

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Elixir : Programming language
3 days (21 hours)

Presentation

Elixir is a dynamic, functional language designed for building scalable, maintainable applications. Elixir takes advantage of the Erlang VM, known for its low-latency, distributed and fault-tolerant systems, as well as being successfully used in web development and embedded software. It's a relatively recent language that is already used by companies such as Pinterest, Discord and others. Like all our training courses,
it will introduce you to the latest stable version and its new features (Elixir v1.12 at the time of writing).

Objectives

- Understanding the basics of the Elixir language
- Start writing applications
- Find out about more advanced features

Target audience

Developers, Project Managers

Prerequisites

Basic knowledge of Git and basic knowledge of a programming language other than HTML and CSS. Notions of programming language.

Elixir training program

Part 1: Introduction to Elixir

- Specific features of functional languages
- Introducing Erlang

- What is Elixir?
- Elixir installation
- Elixir-related tools
- Erlang cog
- Elixir's strengths
- When to use Elixir

Part 2: Programming basics

- Syntax and best practices
- Basic types and variables
- Data structures
- Control flows and operators
- Modules and functions
- Anonymous functions
- Recursivity
- Pattern Matching
- Immutability and pipes

Part 3: Project organization

- Creating and organizing an Elixir project
- Mix configuration
- Documenting your code
- Dependencies
- Unit testing
- Introduction to deployment
- Monolith, services and micro-services
- Umbrella application presentation

Part 4: Process & application

- Notion of synchronous and asynchronous
- Detailed process analysis in Erlang
- Start with Process
- Run an asynchronous task with Task
- Store and share data with Agent
- Creating a process tree with Supervisors
- Access any process via the Registry
- GenServer, for client-server relations

Part 5: Introduction to other elements

- Typespecs

- Behaviors
- Streams
- Protocols
- Sigils
- Error handling

Part 6: Introduction to Phoenix

- Introducing Phoenix
- Setting up, creating and organizing a project
- Roads
- Controllers
- Logic modules
- Views and templates
- Ecto, Structure and database

New functions

- Code preloading
- Configuration and customization
- Multiple broadcasts
- Management scripts
- Stand-alone

Companies concerned

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

Teaching methods

Practical course: 60% Practical, 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.

Sanction

A certificate will be issued to each trainee who completes the course.