

Ruby Programming Certification

Duration:

5 Days

What is the course about?

This course will introduce the fundamental concepts for the Ruby programming language. Ruby is an easy programming language to learn. It is popularly used by startups in developing web applications and for administering systems. Ruby was developed to make programmers happy and is popularly known for the Rails web application framework. Ruby is also the language used for developing Puppet, a systems automation software and Metasploit, a security assessment framework. This course is designed for both programmers and developers who want to get the fundamentals of programming in Ruby.

Duration

The course is full time and runs over 5 days. This course is primarily offered as a private course to a team, group or a company.

Programming Experience

This is a beginner's course and no prior programming experience is required. A good command of computer skills, the command line or the terminal is required.

Technical Skill

We primarily use Linux or Mac during the course. A Windows machine can also be used but some things might not work. So, technical knowledge on the Linux environment is required.

Private Training

This course is primarily offered as a private course. A minimum of 4 delegates is required to schedule the course. The course can be run on your premises or our premises. When run on your premises, the course costs R9 500 per delegate with a minimum of 4 delegates to schedule the course. The cost is R12 500 to run the course on our premises and training can be done in either Johannesburg, Durban or Cape Town. There is no fixed date the course will run, we work with your team to find suitable dates to run the course.

Course Topics

Introducing Ruby Programming language

- Ruby Language Overview
- Who is Using Ruby in Production
- Setting up the development environment
- Using Interactive Ruby Shell(irb)
- Hello World in Ruby
- Everything is an object in Ruby

Ruby Language Syntax

- Creating and using variables
- Using and commenting code

Number and Operators in Ruby
Ruby core language constructs

Ruby Operators

- Ruby Expressions
- Arithmetic Operators
- Shift or Append Operators
- Comparison Operators
- Booleans Operators
- Range Operators

Using Arrays

- Creating Arrays
- Accessing Array Elements
- Adding/Removing Items from an Array
- Iterating Over an Array
- Selecting Elements from an Array
- Reversing an Array
- Sorting Arrays
- Shuffling an Array
- Summing the Items of an Array
- More Array Methods
- Array Documentation

Ruby Strings

- String Literals
- String Methods
- Concatenating Strings
- Substituting Variables into String(String Interpolation)
- Reversing Strings
- Processing a String One Character at a Time
- Changing Case Strings
- Matching Strings with Regular Expressions
- Validating an Email Address
- Extracting Strings
- String Methods
- String Documentation
- String Exercises
- Range Operators

Ruby Hashes

- Creating Hashes
- Creating a Hash with Default Values
- Adding Elements to a Hash
- Using Symbols and Hash Keys
- Sorting Hash Elements
- Accessing Hash Elements
- Iterating Over a Hash
- Altering Hashes
- Merging Hashes

Searching a Hash
More Hash Methods

Working with Numbers

Creating Numbers
Numeric Alterations
Numeric Comparisons
Number Exercises

Ruby Date and Time

Date Classes
Printing Today's Date
Formatting Date
Waiting a Certain Amount of Time
Converting Bwtween Date and Times

Working with Conditionals

Creating Boolean values
Expression tests
Comparative operators

Ruby Constants

ARGF
ARGV
DATA
ENV
RUBY_*
STDERR
STDIN
STDOUT
TOPLEVEL_BINDING
TRUE/FALSE/NIL

Ruby Loops and Iterators

Loop Method
While Loop
Until Loop
While and Until Loops – Alternative Syntax
Ruby Iterator Methods

Functions and Methods

Defining and Calling Methods
Default Parameters
Initialize Method
Returning from a Method
Returning Multiple Values
Named and Variable Parameters
Method Aliasing
Un-defining a Method
Class Methods versus Instance Methods

Classes and Modules

- What are Classes
- Objects
- Class Properties
- Constructors
- Private Methods
- Protected Methods
- Checking Class or Module Membership
- Inheritance
- Modules
- Ruby Class Variables
- Ruby Class Variables
- Local Variables
- Instance Variables
- Global Variable

Errors and Exceptions

- What are Errors
- Catching Errors and Exceptions
- Raising Exceptions
- Creating Your Own Exceptions
- Throwing and Catching Exceptions

Ruby Input and Output

- File Input/Output
- File Access Modes
- Directory Modification
- Checking if a File Exists
- Checking File Access
- Deleting a File
- Changing Permissions on a File
- Writing to a File
- Reading Contents of File
- Comparing Files
- Redirecting Standard Input and Output
- Network Input/Output
- Higher Level Network Input/Output
- Using Networking Libraries
- Building a Chat Command Line App with WebSockets
- Writing and Reading Input and Output from other Programs

Advanced Ruby Features with Blocks, Procs and Lambdas

- Creating and Invoking a Block
- Writing Methods that Accept a Block
- Yield Operator
- Using Ruby Procs
- Using Lambdas

Meta Programming

Finding Object's Class and Super Class
Listing Object's Methods

Modules and Namespaces

Multiple Inheritances with Mixins
Extending Specific Objects with Modules
Mixing in Class Methods
Avoiding Naming Collision with Namespaces

Testing in Ruby

Types of Testing
Unit Testing
Integration Testing
Automated Testing
Behaviour Driven Development
Test Driven Development Testing
Introduction to Testing with Rspec

Internet Services

Getting Web Page Contents
Performing a DNS Query
Sending Email
Interacting with Remote Servers using SSH
Checking if a Server is Available with Ping

Using Libraries

Finding and Installing RubyGems
Developing APIs and Web Apps with Sinatra
Building Web Apps with Rails Gem
Some Popular RubyGems

Packing and Distributing Software

Automatically Running Tasks with Rake
Automatically Generating Documentation Creating a RubyGem
Distributing RubyGem

Deploying Ruby Apps on Heroku

Installing the Heroku Command Line Client
Installing git
Generating an SSH Key
Creating a Proc file
Creating a new app
Pushing to Heroku