

# Ruby Fundamentals Workshop

## ABOUT RUBY

Ruby is a modern high-level scripting and programming language. What makes Ruby unique among alternatives is that it was designed specifically to **make programmers both productive and happy**.

In 2000, Yukihiro Matsumoto (known throughout the Ruby community as “Matz”) said:

For me, the purpose of life is, at least partly, to have joy. Programmers often feel joy when they can concentrate on the creative side of programming, so Ruby is designed to make programmers happy. I consider a programming language as a user interface, so it should follow the principles of user interface.

What does Matz mean by the principles of a good user interface?

- **Principle of Conciseness:** “I want computers to be my servants, not my masters. Thus, I’d like to give them orders quickly. A good servant should do a lot of work with a short order.”
- **Principle of Consistency:** “... a small set of rules covers the whole Ruby language. Ruby is a relatively simple language, but it’s not too simple. I’ve tried to follow the principle of ‘least surprise.’ Ruby is not too unique, so a programmer with basic knowledge of programming languages can learn it very quickly.”
- **Principle of Flexibility:** “Because languages are meant to express thought, a language should not restrict human thought, but should help it. Ruby consists of an unchangeable small core (that is, syntax) and arbitrary extensible class libraries....”

In addition to these design goals, **Ruby is cross-platform**, running on the most common operating systems — Windows, Mac OS X, Linux, and various forms of UNIX.

**Ruby has an extensive set of libraries**, largely open source, that can be leveraged into your own projects.

And, the **Ruby community** is famous for being **friendly and helpful**.

## ABOUT RUBY ON RAILS

Ruby is the foundation of the *Ruby on Rails* web development framework (becoming more and more known simply as *Rails*). Rails brought a new approach the creation of web applications — less code, less configuration, quick turn-around time, and integrated testing. **To fully leverage Ruby on Rails, a solid understanding of Ruby is necessary.**

## WORKSHOP DURATION

Three days

## PREREQUISITES

Participants should already be comfortable with one high-level programming language, such as Java, C#, C++, C, Python, Perl, etc.

## WORKSHOP GOALS

The goal of the workshop is to give each participant a solid foundation on which to quickly become a productive Ruby (and/or Rails) developer. Beyond the language’s basics, the features of Ruby that give it its distinct power are a core focus. These include:

- Object-oriented techniques to make code well-organized and maintainable
- The advantages of dynamic typing and open classes
- How blocks add clarity to thought and source code
- Efficient error-handling with exceptions
- Flexible numeric libraries to achieve precision and avoid under- and overflow
- Manipulating text with regular expressions

## WORKSHOP PRINCIPLES

This workshop is organized around three fundamental principles:

- New knowledge is built on prior knowledge.
- Learning is primarily achieved through **doing rather than listening**, so we integrate well-designed, realistic, focused exercises with presentation and discussion.
- A relaxed atmosphere enhances learning.

## WORKSHOP TOPICS

- Introduction and History (*very brief*)
- Language Basics
- Ruby Development Tool Set
- Console I/O
- String Type and Operations
- Numeric Types and Mathematical Expressions
- Boolean Expressions
- Conditional Constructs
- Arrays
- Loop Constructs
- Code Blocks
- Ranges
- Regular Expressions
- Symbols
- Hashes
- Methods
- Object-Oriented Programming
- Classes, Attributes, Methods
- Access Control
- Class Variables and Methods
- Inheritance
- Global Variables and Constants
- Formatted Textual Output
- File I/O
- Storing and Retrieving Structured Data with YAML
- Unit Testing with Test::Unit
- Leveraging Libraries
- RubyForge and RubyGems
- Packaging Programs and Libraries for Distribution

## MATERIALS PROVIDED

Each participant receives:

- A comprehensive course book containing all workshop slides (over 650)
- A CD containing workshop examples, exercise solutions, and other tools and reference materials as allowed by license
- A certificate of completion

## PUBLIC AND ON-SITE CLASSES

We offer both public classes, in which anyone can enroll, and on-site classes, so you can maximize convenience and minimize travel costs for your employees.

## ON-SITE CUSTOMIZATION

On-site classes provide the opportunity to customize the workshop to **your specific needs**. Please feel free to discuss customization of your on-site workshop both in terms of content and scheduling. For example, we can develop special material for your workshop, and we would be happy to schedule the workshop for partial days or across non-consecutive days.

## MORE INFORMATION

For more information please visit us on the web:

[www.LearnRuby.com](http://www.LearnRuby.com)

If you have questions or would like to discuss scheduling or workshop customization, please contact us:

[info@LearnRuby.com](mailto:info@LearnRuby.com)

**+1-213-325-1234**

We look forward to providing you with a rewarding educational experience!