

# € TRAINING

Ruby Association Certified Ruby  
Programmer Gold version 3





# Ruby Association Certified Ruby Programmer Gold version 3

## Introduction:

This training program is designed to prepare participants for the certification exam only.

This advanced training program empowers participants to deepen their Ruby programming expertise, covering advanced topics such as metaprogramming, performance optimization, and Ruby's core libraries.

## Program Objectives:

By the end of this program, participants will be able to:

- Master advanced Ruby programming concepts and techniques.
- Understand metaprogramming and Ruby's dynamic features.
- Utilize Ruby's core and standard libraries effectively.
- Optimize Ruby code for performance and scalability.
- Prepare for the Ruby Association Certified Ruby Programmer Gold exam.

## Target Audience:

- Experienced Ruby Developers.
- Software Engineers looking to validate advanced Ruby skills.
- IT Professionals seeking Ruby Gold certification.
- Developers preparing for senior-level Ruby programming roles.
- Programmers aiming for the Ruby Programmer Gold certification.

## Program Outline:

### Unit 1:

#### Advanced Ruby Programming Concepts:

- Understanding Ruby's object model and object lifecycle.
- Singleton classes and metaclasses in Ruby.

- Advanced inheritance and polymorphism in Ruby.
- Using hooks like `method_missing` and `define_method`.
- Dynamic programming techniques and metaprogramming.

## Unit 2:

### Working with Ruby's Core Libraries:

- Deep dive into Ruby's core libraries String, Array, Hash, Enumerable.
- Efficient use of file handling and I/O operations.
- Understanding Ruby's threading and concurrency model.
- Working with Ruby's reflection and introspection features.
- Implementing custom enumerators and iterators.

## Unit 3:

### Memory Management and Performance Optimization:

- Understanding Ruby's garbage collection mechanism.
- Techniques for optimizing memory usage in Ruby applications.
- Profiling Ruby applications for performance bottlenecks.
- Optimizing code for execution speed and efficiency.
- Best practices for scalable Ruby application development.

## Unit 4:

### Advanced Error Handling and Testing in Ruby:

- Handling complex exception hierarchies.
- Defining custom exception classes.
- Writing robust unit tests with RSpec and Minitest.
- Advanced testing techniques: mocking, stubbing, and integration tests.
- Ensuring code quality and reliability in Ruby applications.



## Unit 5:

### Exam Preparation:

- Review of key concepts and skills.
- Sample exam questions and their potential answers.
- Exam format and structure overview.
- Resources for further study and practice.

Note: This program is designed to prepare participants for the certification exam only.