

Ruby Course



e-Learning Course

Code with Elegance, Learn Ruby

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COURSE MODULES

Foundational Ruby Concepts

- **Introduction to Ruby:**

- oWhat is Ruby?
- oRuby's history and purpose
- oSetting up your development environment

- **Basic Syntax:**

- oVariables, data types, and operators
- oComments and code structure
- oInput and output

- **Control Flow**

- oConditional statements (if, else, elsif)
- oLoops (for, while, until)
- oliterators (each, map, select)

- **Data Structures:**

- oArrays: Creating, accessing, and manipulating arrays
- oHashes (dictionaries): Creating, accessing, and manipulating hashes
- ++oStrings: Working with text data

- **Object-Oriented Programming (OOP):**

- oClasses and objects
- oMethods and attributes
- oInheritance and polymorphism

Intermediate Ruby Concepts

- **Blocks and Procs:**

- o Understanding blocks and procs
- o Using blocks and procs in methods

- **Modules:**

- o Creating and using modules
- o Namespaces and organization

- **Regular Expressions:**

- o Pattern matching and searching
- o Using regular expressions in Ruby

- **File I/O:**

- o Reading and writing files
- o Working with different file formats



Advanced Ruby Concepts (Optional)

- **Metaprogramming:**

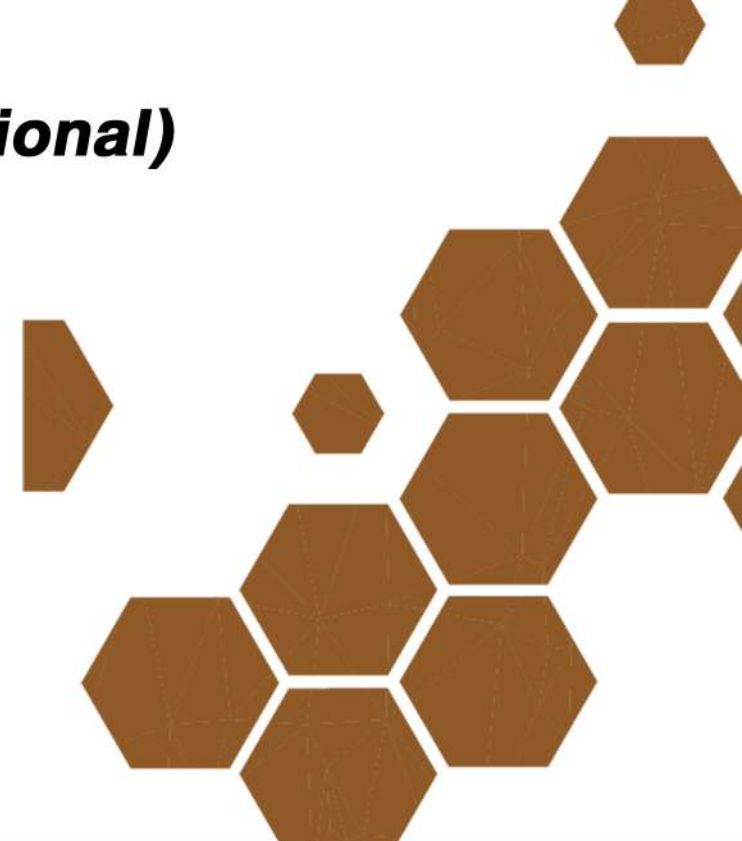
- oDynamic code generation
- oReflecting on Ruby code

- **Threads and Concurrency:**

- oRunning code concurrently
- oSynchronization and race conditions

- **Testing:**

- oWriting unit tests with RSpec or Test::Unit
- oAutomated testing and debugging



IV. Ruby on Rails (If applicable)

- **Introduction to Rails:**

- oWhat is Ruby on Rails?
- oMVC architecture
- oSetting up a Rails application

- **Model-View-Controller (MVC):**

- oUnderstanding the MVC pattern
- oWorking with models, views, and controllers

- **Routing and Views:**

- oDefining routes and controllers
- oCreating and rendering views

- **Databases:**

- oConnecting to a database
- oWorking with ActiveRecord

- **Web Application Development:**

- Building web applications with Rails
- Deploying Rails applications

Practical Projects and Exercises

- **Hands-on practice:**

- Small projects to reinforce learning
- Real-world scenarios and challenges

- **Graded assignments:**

- Assessments to evaluate understanding
- Feedback and improvement

Additional Resources

- **Recommended books and articles:**

- Further reading and learning materials

- **Online communities and forums:**

- Ruby and Rails communities for support and collaboration

- **Code repositories:**

- Ruby and Rails projects and examples