This 2-day course describes how to write database-backed Web Applications using the Ruby on Rails (also pronounced RoR, or Rails) Framework. Students are taken through the various steps of creating a full-fledged Web Application. Topics include the MVC paradigm, object relational mapping, fill-in forms, sessions, validation techniques, testing, and various other Rails topics. This course covers the fundamental components of the Ruby Programming Language. Emphasis is placed on the object oriented aspects of Ruby. Topics include arrays, hashes, regular expressions, io, exceptions, modules, and applications areas.

Course Objectives:

- Download and install Rails along with various other products that allow one to write Rails applications.
- Understand the Model, View, Controller paradigm and how this applies to Rails application.
- Understand the directory structure of a Rails application.
- Build non-trivial database backed Web Applications.
- Understand the ActiveRecord classes and how they wrap database tables.
- Understand the interplay between various controller actions and .erb (embedded Ruby) files.
- Validate Model data.
- Use the Rails console to debug applications.

Audience: Developers, system administrators, or managers who need to write a Rails application or evaluate a Rails framework.

Prerequisites: Students who are familiar with Ruby Programming language, SQL database and have an understanding of HTML.

Number of Days: 2 days

1 An Overview of Ruby on Rails

What is Ruby on Rails?
Overview of Rails Components
Installing Rails
A Simple Rails Application
Starting the Rails Server
Static Pages Within a Rails Application
The Structure of a Rails Application
Generating a Controller
Rendering the View
Adding a Static Page
Dynamic Pages with Embedded Ruby
Using the render Method
Using the link_to Method

2 Rails and HTML Forms

A Basic HTML Form
Processing an HTML Form
Working with Form Data
Other Form Elements
Form Tag Helpers

3 Databases and Rails

Review of the MVC Architecture
Entities and Relationships
Databases and Models
Rails Database Conventions
Adding a Model
Database Migrations
The Rails Database Console
Creating a Rails View of a Database Table

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Scaffolding
RESTful Routes and Resources
4 Form Helpers and Validation
Introduction
Form Helpers and `form_for`
Processing Form Helpers
From Form to Database
Redirection
Data Validation
Validation Helpers
The presence Validator
The numericality Validator
The uniqueness Validator
The length Validator
The format Validator
Custom Validation Methods
The errors Object
Displaying Validation Errors in the View
5 Adding Style to an Application
Styling
Rails and Sass
Cascading Style Sheets
6 Users
Introduction
Configuring an Application for Sessions
Registering Users
The Register Action
The flash Hash
Validating the Registration
Logging in
Logging Out
Protected Pages
Filters
7 Putting It All Together
Introduction
The Business Application
Database Terminology
Linking Two Models
Adding Tasks
The Database Tables
Displaying Employee Tasks
Deleting a Task
Listing Employees and Tasks
Migrations
Editing a Record