Introduction to the Ruby Programming Language
4 days

Course Overview: The Ruby programming language is an object oriented scripting language. It has a built-in interpreter for testing programming elements, as well as having a very thorough web enabled framework (Ruby on Rails). This course will focus on the programming language itself. This class is 90% hands-on labs, and 10% Lecture. The students will not only engage in exercises that reinforce individual concepts, but also participate in a class project wherein they write a full featured application.

Duration: 4 days (5 days with Optional Database Connectivity Module)

Audience: The students should have an understanding of how a text editor works, and a strong desire to learn the Ruby programming language. A general understanding of higher level programming languages is helpful, but not required.

Course Topics:

- **How to put output to the screen**
- **How to take input from the user**
- **Variables**
- **Conditional Statements**
- **Flow Control**
- **Object Oriented Programming**
- **Database Connectivity (optional)**

Class Project Exercise:

This exercise has the students creating a menu driven application. The approximate time for this exercise is about 15 hours of class work.

Course Outline

I. **First Steps**
   - ***a.*** Hello World
   - ***b.*** The puts command
   - ***c.*** The gets command
   - ***d.*** Variables
   - ***e.*** Class Project Exercise

II. **Conditionals**
   - ***a.*** If statements
   - ***b.*** If-else statements
   - ***c.*** If-else if-else statements
   - **d.** Conditional Logic
   - e. Class Project Exercise

III. ***Flow Control***
   - ***a.*** for loops -- each
   - ***b.*** while loops
   - ***c.*** break statements
   - ***d.*** next statements
   - ***e.*** methods (functions)
   - ***f.*** case statements
   - ***g.*** Class Project Exercise

IV. **Object Oriented Ruby**
   - ***a.*** Creating Object Oriented Programs
   - ***b.*** Methods
   - ***c.*** Using Objects
   - ***d.*** Class Project Exercise

V. **Database Connectivity (Example code with MySQL) [Optional]**
   - ***a.*** Database connectivity overview
   - ***b.*** Connecting to a MySQL database
   - ***c.*** The Big Four (create,delete,update,insert) data

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