LEARN. DO. EARN

ACADGILD

FULL STACK WEB DEVELOPMENT

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- **AcadGild** is a technology education start-up which provides online courses in latest technologies.

ANDROID DEVELOPMENT

BIG DATA DEVELOPMENT

FRONT END DEVELOPMENT (WITH ANGULARJS)

CLOUD COMPUTING

- **AcadGild** was started by IIT/IIM alumni.
- **Our aim** is to provide millions of high school graduates, college graduates and working professionals, skills to make them ready for jobs.

Course Objectives

- **Get introduced to Ruby**
  - Understand the basics of Ruby
  - Get familiar with Object Oriented Programming
  - Understand Data Types, Classes, Operators, Loops etc.
  - Learn to interact with different databases like Mongo, SQLite etc.
  - Build a complete application using Ruby and other web technologies learnt earlier.
- **Feel the power of Ruby on Rails**
  - Understand the need and importance of a framework.
  - Learn fundamentals of MVC architecture.
  - Start building your own blogging platform.
  - Add features to your project.
  - Understand various debugging techniques for RoR.
  - Understand Routing, Template, Active record and other key RoR concepts

Course Modules

Sl No	Course Modules
1	Introduction to Ruby and Rails
2	Ruby Basics
3	Web Application Fundamentals
4	Scaffolding
5	Database
6	Active Record
7	Action Controller
8	Action View
9	Action Mailer
10	Digging Deeper
11	Deployment

Session 1 – Introduction to Ruby and Rails

Agenda – Introduction to Ruby and Rails

Sl No	Agenda Title
1	Introduction to Ruby and Rails
2	Why Ruby?
3	Ruby Trivia
4	Rails Trivia
5	Ruby Philosophy
6	Rails Philosophy
7	Web Application
8	Web Application Framework
9	Ruby on Rails Installation
10	MVC Architecture
11	MVC Detailed Architecture

Introduction to Ruby on Rails

- **Ruby on Rails** is an open-source web framework for developing database-backed web applications according to the Model-View-Control pattern.
- **Rails** encourages the use of web standards such as JSON or XML for data transfer and HTML, CSS and JavaScript for display and user interfacing.
- **Ruby** is the programming language used to manipulate the framework.
- **Rails** is the framework that provides the necessary infrastructure.
- **Rails** is written in **Ruby**.

Why Ruby?

- **Ruby** is Productive and Fun.
- The **Ruby** programming language was designed to make programmers productive and happy.
- **Ruby is Fundamental to Rails**.
- The **Ruby on Rails** framework (often simply referred to as Rails) allows developers to create powerful, dynamic web applications quickly and easily.
- **Rails** itself is written in Ruby and writing a Rails application consists primarily of writing Ruby code.
- *So a solid understanding of Ruby is necessary to develop clean, efficient, bug-free Rails applications*.
- **Ruby** is easy to learn.
- **Ruby** is open source and has rich libraries.
- **Ruby** is very easy to extend and is truly object-oriented.
- **Ruby** has less coding with fewer bugs.

Ruby Trivia

- Ruby was released in 1993.
- It was designed by **Yukihiro Matsumoto**.
- It's mainly influenced by the predecessors Perl, Smalltalk, Eiffel, Ada and Lisp.

Rails Trivia

- Is written in Ruby.
- Creator of Ruby on Rails is David Heinemeier Hansson in July 2004.

Ruby Philosophy

Ruby philosophy:

- Ruby is a programming language that was designed for better productivity and fun for the programmers.

Ruby Vs other Programming Languages:

- Ruby is an interpreted language (No compile step necessary)
- Ruby is an Object Oriented language.
- Everything is an object (No primitives)
- Very simple English like syntax.
- Less coding

Rails Philosophy (contd.)

Convention over configuration(COC):

- COC means that the developer should specify unconventional aspects of the application only.
- Through this the developer needs to make less decisions, gain simplicity and the code's flexibility is also not lost.
- Ruby on Rails conventions guides you to less code and repetition.

Don't Repeat Yourself (DRY):

- DRY means that information can be found in a single and common location where the developer can reuse the code.
- This reduces repetition of all kinds of information.
- If applied correctly modifying any single element does not require any change in other logically unrelated elements.

Web Application

- A web application is any software that runs in a web browser.
- Since these applications are accessed only through web browsers they are created by browser supported programming languages like HTML, CSS, and JavaScript.

Components of Web Applications:

- *For any dynamic web applications following are the crucial components:*
  - Database
  - Web/App Server
  - Server Side Programming Language
  - Test Framework
  - Mailer Components
  - Service Layer

Web Application Framework

Web Application Framework:

- A web application framework is a software framework that is designed to support the development of dynamic websites, web applications and web services.
- The framework aims to alleviate the overhead which is associated with common activities to b performed in web development like:
  - Defining and Configuring Database
  - Setting up the server
  - Accessing the various components
  - Caching related
  - Security based
  - User interface and third party libraries to be loaded

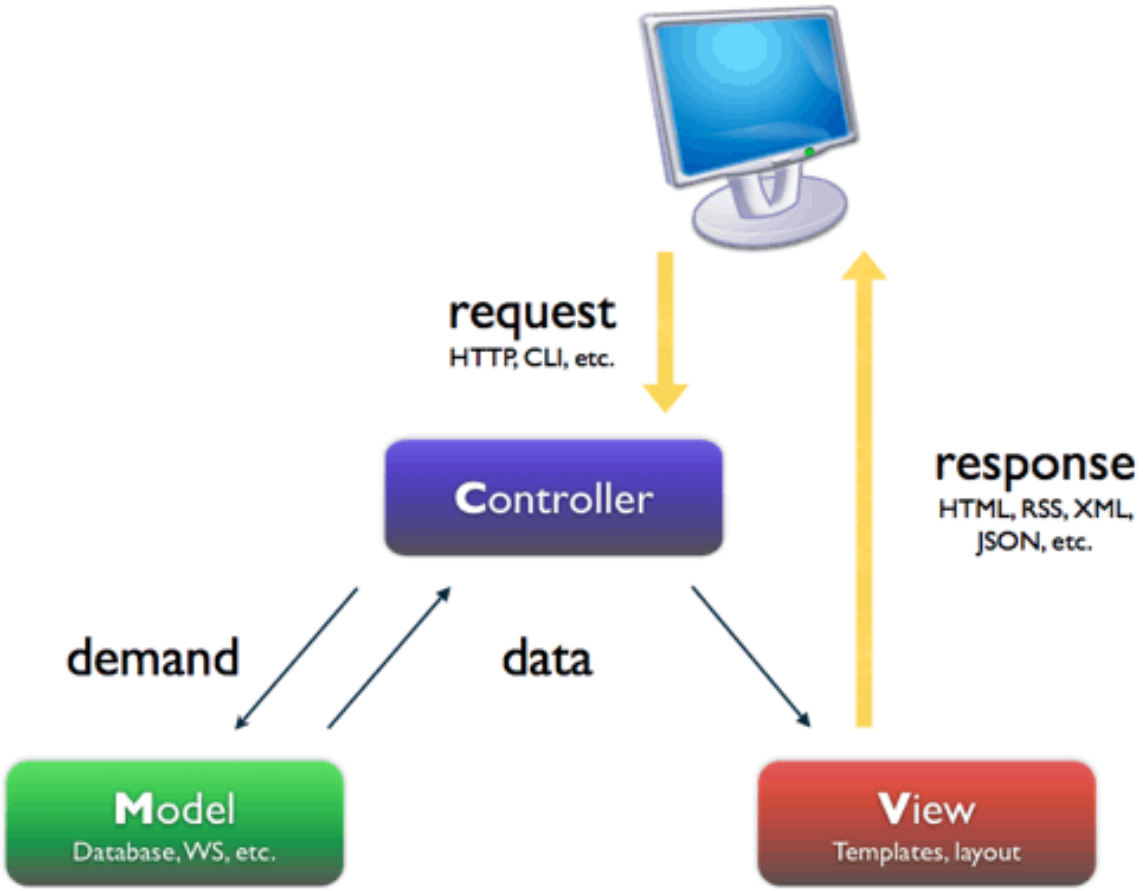
Ruby on Rails Installation

- To develop a web application using Ruby on Rails Framework, install the following:
  - Ruby - DevKit
  - The Rails - > Gem installs Rails
  - A Web Server - WEBrick
  - A Database System – SQLite3
  - Text Editor

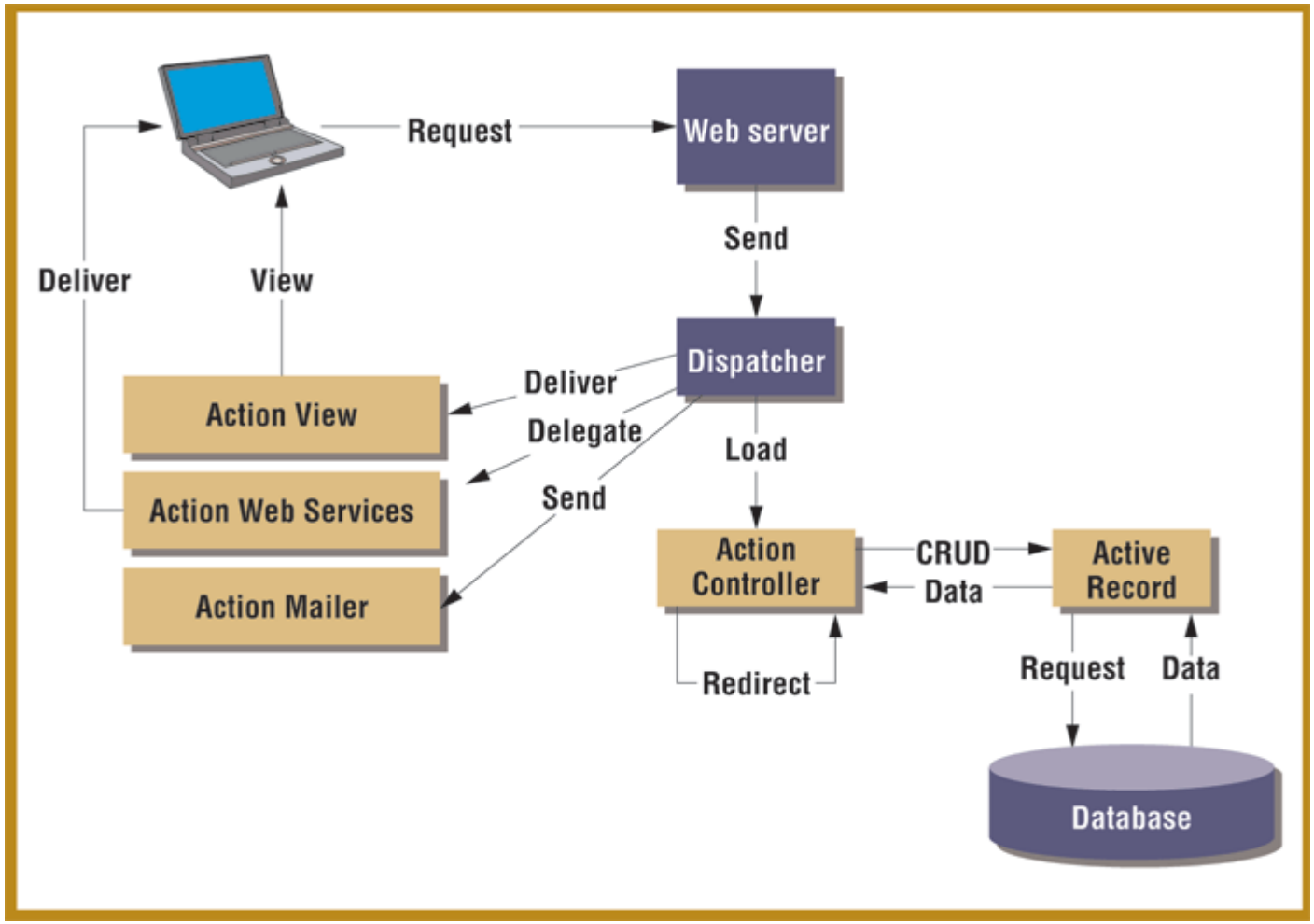
MVC Architecture

- Rails applications are implemented using the Model-View-Controller (MVC) framework.
  - Model will be denoted as ActiveRecord.
  - View will be denoted as ActionView.
  - Controller will be denoted as ActionController.

MVC Architecture



MVC detailed Architecture



Lets Discuss Assignments

Assignment

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