**Software Engineering Tools Lab**

**Assignment No-2**

**(Module 2- Software Development Frameworks)**

## **Name : Onkar Santosh Gavali**

## **Prn No. : 2019BTECS00037**

## **Name : Sadaf Najeem Mulla**

## **Prn No. : 2019BTECS00038**

**Ruby on Rails**

**1. Original author**

* David Heinemeier Hansson

**2. Developers**

* On the github, upto this data more than 4500 developers have contributed in RoR.(power of the open source)

**3. Initial release**

* August 2004

**4. Stable release**

* 6 January 2022

**5. Preview release**

* Till date, ruby on rails have 57 different releases (including minor and major updates), all releases information is available on there github page

**6. Repository (with cloud support )**

* <https://github.com/rails/rails>

**7. Written in (Languages)**

* It is written in the Ruby programming language and it also uses web standards like JSON or XML for transfer data and HTML, CSS and JavaScript for the user interface.

**8. Operating System support**

* Mac OS X, Linux, or Microsoft Windows operating systems

**9. Platform ,portability**

* It is a server-side web application development platform. Ruby is highly portable: It is developed mostly on GNU/Linux, but works on many types of UNIX, macOS, Windows, DOS, BeOS, OS/2, etc.

**10.Available in (Total languages)**

* It is written in the Ruby programming language and it also uses web standards like JSON or XML for transfer data and HTML, CSS and JavaScript for the user interface.

**11.List of languags supported**

* It supports multiple programming paradigms, including [procedural](https://en.wikipedia.org/wiki/Procedural_programming), [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming), and [functional programming](https://en.wikipedia.org/wiki/Functional_programming). According to the creator, Ruby was influenced by [Perl](https://en.wikipedia.org/wiki/Perl), [Smalltalk](https://en.wikipedia.org/wiki/Smalltalk), [Eiffel](https://en.wikipedia.org/wiki/Eiffel_(programming_language)), [Ada](https://en.wikipedia.org/wiki/Ada_(programming_language)), [BASIC](https://en.wikipedia.org/wiki/BASIC), and [Lisp](https://en.wikipedia.org/wiki/Lisp_(programming_language))

**12.Type (Programming tool, integrated development environment etc.)**

* Rails is a web application development framework written in the Ruby programming language.
* The Rails philosophy includes two major guiding principles:
  + Don't Repeat Yourself: DRY is a principle of software development which states that "Every piece of knowledge must have a single, unambiguous, authoritative representation within a system". By not writing the same information over and over again, our code is more maintainable, more extensible, and less buggy.
  + Convention Over Configuration: Rails has opinions about the best way to do many things in a web application, and defaults to this set of conventions, rather than require that you specify minutiae through endless configuration files.

**13.Website**

* <https://rubyonrails.org/>

**14.Features**

* Symbol garbage collector
* Module #prepend
* Keyword arguments
* Action Mailer
* Action view
* Turbolinks
* Action cable
* Actionpack Assertions
* Rails API
* Render from anywhere
* Rake command
* Customized library
* AJAX library

**15.Size (in MB, GB etc.)**

* We can download release zip file which is around 10-12 mb
* <https://github.com/rails/rails/releases/tag/v7.0.2>

**16.Privacy and Security**

* Open-source software development frameworks, such as Ruby on Rails, are considered highly secure, and this is often quite true. Rails (particularly its latest versions, starting from 4.0) offers a number of built-in tools for fending off the vast majority of threats. However, forewarned is forearmed: developers should fully understand what kinds of vulnerabilities a Rails application might have
* Common Ruby on Rails Security Concerns
  + Cross-Site Scripting (XSS)
  + Preventing SQL Injection in Ruby on Rails
  + Avoiding CSRF Vulnerabilities in Ruby
  + Preventing Logging Vulnerabilities in Ruby on Rails
  + Protecting Your Ruby on Rails Code With Veracode

**17.Type of software (Open source/License)**

* Open source software.

**18.If License- Provide details.**

* Ruby on rails have MIT open souce license
* <https://github.com/rails/rails/blob/main/MIT-LICENSE>

**19.Latest version**

* 7.0.2.2

**20.Cloud support (Yes/No)**

* Yes
* As for Ruby on Rails, the apps created on it can be deployed via such cloud platforms as [Heroku](https://www.heroku.com/), [Microsoft Azure](https://azure.microsoft.com/en-us/), and [Amazon Web Services S3](https://aws.amazon.com/s3/) – all dedicated, in this case, to storing user downloads.

**21.Applicability**

* Airbnb, GitHub, SlideShare, Dribbble, Bloomberg, CrunchBase, and Shopify (to name a few) have also trusted Ruby on Rails and used it in their applications.
* 34 companies among the worlds top companies using Ruby on Rails in 2021
  + Airbnb
  + Crunchbase
  + Ask.fm
  + Dribbble.com
  + GitHub
  + Fiverr

**22. Drawbacks (if any)**

* Runtime Speed and Performance
  + Top environments and frameworks (Node.js or Django) are somewhat faster than RoR
  + Twitter struggled to improve RoR’s performance that deteriorated after the social network became very popular.
* Lack of Flexibility
  + RoR is an opinionated framework with a lot of hard dependencies and modules included out of the box
* High cost of wrong decisions in development
  + Wrong architecture decisions during the initial stages of your project might cost you more in Rails than in any other framework

**Q2. Implement linear regression problem using Google colab (Perform preprocessing,**

**training and testing)**

Colab Link - <https://colab.research.google.com/drive/1uDPZkfb0DtoM5T8T2LakGipyEugKyw7-?usp=sharing>