Guide for Incoming Genesys Students

Whether you are a third year undergraduate moving into the fourth year, or an MSc student coming to the University of Sheffield’s Department of Computer Science for the first time, you should be aware of the kind of work that will be required of you and make the proper preparations that will greatly help your progress at the company.

The software that Genesys produces is primarily web-based applications. The company makes these websites using the Ruby programming language, and the web-application framework, Rails. Students on the Genesys module will form teams with a variety of different roles, both technical (development, testing etc.) and non-technical (client liaison, project management etc.). However it is useful that all students have an idea about all of the aspects involved in Genesys, even if they do not necessarily apply to your chosen role. Obviously if you have a specific role in mind you can focus on the areas you will be using (ie: developers will want to look into Ruby and Rails). The list that follows is a collection of resources, which will be greatly useful to your time on this module. We advise you to familiarise yourself with these resources over the summer.

Interactive Ruby and Rails Tutorials

One of the easiest ways to grasp a new subject we feel is to try it out. The following resources are free interactive tutorials that you can go through in your own time using just your internet browser. They will not require any complicated set up so you can get going straight away.

Ruby
http://tryruby.org/
http://rubymonk.com/
http://koans.heroku.com/ (NB: These are for an older version than we will be using so some syntax will have changed. Most things however, still apply)

Rails
http://railsforzombies.org/

In order to progress with some of these you might find you want a little extra information. The links in the following sections will provide you with this.
Ruby

Ruby supports multiple programming paradigms, including functional, object oriented, imperative and reflective.

Core
Basic tutorial

Programming Ruby - an excellent introductory ruby book
http://pragprog.com/titles/ruby/programming-ruby

Additional
Learn to Program (2nd edition) [Beginner]
http://pragprog.com/titles/ltp2/learn-to-program

Metaprogramming Ruby [Advanced] *
http://pragprog.com/titles/ppmetr/metaprogramming-ruby

Rails

Rails is a full-stack, Web application, Model View Controller pattern framework optimized for sustainable programming productivity. It is crucial that you fully understand at least the MVC pattern, and familiarise yourself with Rails as much as possible.

Core
Agile Web Development with Rails (4th edition)

Rails guides – *A good place to start*
http://guides.rubyonrails.org/

Excellent video tutorials
http://railscasts.com/

Additional
Rails for Java Developers
http://pragprog.com/titles/fr_r4j/rails-for-java-developers

Rails for NET Developers
http://pragprog.com/titles/cerailn/rails-for-net-developers

Rails for PHP Developers
http://pragprog.com/titles/ndphpr/rails-for-php-developers
Security on Rails *
http://pragprog.com/titles/fr_secure/security-on-rails

Haml

Genesys projects also use HAML rather than HTML, this is not complicated if you are already comfortable with HTML. Take a moment to look through the differences.

Official haml website
http://haml-lang.com/

Twitter Bootstrap

The people over at Twitter released an open-source CSS framework called Bootstrap. It provides a grid system, responsive design facilities and a bunch of other useful components which we use a base for all of our projects.
http://getbootstrap.com

MVC

http://guides.rubyonrails.org/getting_started.html


RSpec

Genesys employs test-driven development, wherein the unit tests, or RSpec tests, are written first. Read about test-driven development and learn how to write RSpec unit tests.

Core

The RSpec Book: Behaviour Driven Development with RSpec, Cucumber, and Friends

Additional

Scripted GUI Testing with Ruby [Does not focus on web applications] *
http://pragprog.com/titles/idgtr/scripted-gui-testing-with-ruby
Software Engineering

Apprenticeship Patterns: Guidance for the Aspiring Software Craftsman *

http://www.amazon.co.uk/Apprenticeship-Patterns-Guidance-Aspiring-Craftsman/dp/0596518382

Version Control

Our development teams currently use the Git version control system to manage the changes a team makes to their code. This is a crucial aspect of software engineering and you should be familiar with at least the concept of version control, if not Git specifically.

You can try the basics of Git out in 15 minutes, by running through this online tutorial here: http://try.github.io/

Having a read over the Git documentation would be also be useful: http://git-scm.com/documentation