Rapid Application Development for GWT App Engine using EMF

Ed Merks
Cloudsmith, itemis

Accelerating up the Learning Curve

- Learning a new technology is always intimidating
  - New things generally seem complex and unintuitive
    - Why are all these things needed?
    - Why is it done like this?
    - Why isn't it done in this old familiar way?
- Good documentation helps, but real developers don't read it; they just dive right in
- Examples are essential
  - They provide a working starting point illustrating how it all hangs together

Swiss Army Knife

- Expressive languages
- Powerful frameworks
- Excellent tools
- A wealth of documentation
  - Introductory overviews
  - Reference material
  - Tutorials
  - Samples
- Helpful forums

Google Web Toolkit

- "Google Web Toolkit (GWT) is a development toolkit for building and optimizing complex browser-based applications."
- It's based on Java!
  - Reuse existing language skills
  - Reuse existing tool skills
  - Reuse some existing libraries
  - Learn new libraries
  - Learn new programming paradigms
    - Asynchronous client server communication

GWT for Eclipse

- GWT provides fantastic integration with Eclipse’s Java Development Tools
- Getting started is so easy!
  - Create a project
  - Launch it
  - Load it the browser
  - Debug client and server logic interactively
  - Deploy it to App Engine
- Demo…

Now What?

- It's little better than a "Hello World" example…
  - How to implement a real application?
  - How to design and store the data?
  - How to access the data asynchronously?
  - How to update the browser's views based on asynchronous arrival of data?
- There are more interesting examples…
- But it would be better to generate an application based on data from the programmer's domain of interest

Eclipse Modeling Framework

- Provides a simple way of describing data models
- Generates fully functional applications from those models
  - Eclipse Integrated Development Environment (IDE)
  - Eclipse Rich Client Platform (RCP)
  - Eclipse Rich Ajax Platform (RAP)
  - GWT
- Sports a powerful core runtime based on high performance abstract reflection

The Advantages of EMF

- Focus on designing the essential aspects of the data
  - Produce simple natural APIs rather than stilted denormalized forms
- Minimize time spent on repetitive coding
- Data instances are GWT serializeable
  - They can be used in service APIs
- EMF's Resource framework is based on Representational State Transfer, i.e., REST
  - Transparent integration with App Engine datastore

But I Hate Modeling!

- No you don’t
  - You model all the time, but call it something else
  - You just hate UML and equate the two
- I’ll show you what I mean
  - Demo time…

Conclusions

- GWT is awesome
- EMF makes it more awesome
  - Generates an interesting fully functional application based on your specific domain model
  - Let’s you focus on designing a natural data model
  - Supports REST
    - Transparent integration with datastore
    - A plastic alternative/complement to service APIs
  - Gets your specialized application up and running rapidly

References

- http://www.eclipse.org/emf
- http://code.google.com/webtoolkit/
- https://appengine.google.com/