suchismita patnaik - 07:12 PM

Q: How are DSL features helpful in connecting to more than one application on different languages

A: DSL can be viewed as syntax given to a domain. Internally, one way or another, they are wrappers on concepts. Since wrappers help in adaptation of interfaces, platform-specific aspects can be abstracted. So to conclude: DSL -> platform-independent wrappers -> platform-specific wrappers -> concepts.

suchismita patnaik - 07:13 PM

Q: Which tier architecture does it follow?

A: Difficult to imagine in a flat scheme. I guess they are orthogonal, because architecture layers are domains in themselves. MVC, for example, as an architectural pattern, has three tiers. DSLs can be devised for each - models, controllers and views.

Jordan Koppole - 07:11 PM

Q: How is parallel execution achieved? Can you show a sample?

A: I can see two aspects for the first question - 'how' refers to the DSL translation aspect and/or underlying implementation aspect.

DSL translation aspect: In case the external DSLs designer has full control and s/he can devise syntax and semantics quite close to actual domain of interest, s/he can introduce constructs that can be analyzed for opportunities of parallelization. Graph theory can be useful here. In case of internal DSLs, it is bit tricky. One has to take shelter under wrappers. Wrappers can be a powerful, less elegant and cheaper solution.

Underlying implementation aspect: It is very implementation specific. A parallel execution can (transparently) be achieved through threads or message-passing on single machine or across multiple machines. An example of such abstraction and implementation is not with me. However I can cite OpenWFEru's construct 'concurrent_iterator' which can spawn threads behind and take care of actual mechanism. For more info, visit http://openwferu.rubyforge.org/

Chetan Arya - 07:12 PM

Q: Isn’t UML a DSL itself (with non-English symbols!)?

A: Precisely. It is DSL for the domain of modeling, albeit a visual DSL. There is a textual alternative also, if I remember, called as Human Usable Textual Notation (HUTN).

Chetan Arya - 07:13 PM

Q: DSL + Message Passing != Scalability? True/ False?

A: True. 'DSL + Message passing + K = Scalability'

'K' can vary across domains, systems and approaches and stages in evolution (say maturity of software system).

suchismita patnaik - 07:19 PM

Q: Is it Database independent?

A: Surely. You can read about ActiveRecord of Rails for more info.

Abbas Meeran - 07:15 PM

Q: How do you compare the external DSL like Groovy and Jpython with RUBY

A: Groovy and Jython (I think) are separate languages on their own. Only common thing between Groovy, Jython and Ruby (JRuby to be precise) is that they all can run on Java Virtual Machine.

Ramakrishnan S - 07:18 P

Q: What are the considerations for debugging DSL applications?

A: For external DSLs, it is still a problem. Tools (possibly like ANTLRWorks) can provide good support, but it many not be sufficient. So it is like debugging your own compiler or interpreter (developers of GCC can share their internal best practices). For internal DSLs, the host language tools are a saviour. If the host language is C++/Java/Ruby, you are lucky because there are plenty of tools.

vipul lonkar - 07:18 PM

Q: What type of guideline should one follow while writing DSL so that it will not hamper performance?

A: No black and white solution. Follow good design practices. Internal DSLs are wrappers that can have a slight penalty. Unless critical (like real-time systems), it is negligible. In case of compiled external DSLs, one needs to generate efficient code (difficult to generalize 'efficient code' here). Interpretation is costlier. Arguably, in best cases, it boils down to performance of internal DSLs.

Paritosh Nagda - 07:32 PM

Q: At what level does it provide security since you use name framework designing?

A:

Ketan Shah - 07:19 PM

Q: Is it possible to create DSL using Java?

A: Yes. Internal DSLs are well-written libraries. External DSLs can be written using compiler tools (like jcups, antlr, etc).

Anant Joshi - 07:21 PM

Q: Are there any standardization practices followed when DSL's are constructed or is it quite specific to the application?

A: It is still an evolving field of computer science, so I think it is yet to reach there.

Arti Pande - 07:21 PM

Q: Should DSLs get rid of "noise of syntax" so it is close to a natural language? Which DSL has this feature?

A: The quick answer is Yes. Being closer to domain (I would take it as an alias of 'natural') is more important than being English-like. To achieve it, use of punctuation needs to be reduced (look up some complex Perl/Lisp code versus Ruby code). Any good DSL should have this feature.

utkal samal - 07:19 PM

Q: Is it faster than existing languages like java

A: See a question above.

arun kumar m s - 07:22 PM

Q: What about the risks in development cycle using a DSL in a project (a new language)?

A: Trade-offs among three aspects need to be balanced: Learning curve for domain-experts, productivity improvements after their learning and cost of development and maintenance.

Arti Pande - 07:32 PM

Q: Which one is more powerful Internal DSL or External DSL?

A: External DSLs can provide a lot of power in domain-specific abstractions, initially. However the more mature they become and as the scope of domain increases, they tend to break. The possible reason is that more programming-style features become relevant after a threshold. This is where internal DSL's are useful, because the complexity gap is reduced. Ruby can play an important role to bridge this gap by incrementally exposing programming-style features. See "External DSL vs. Internal DSL Smack Down" for more info.

vipul lonkar - 07:32 PM

Q: Can we call a DSL writtten in ruby into a Java Program using JRuby?

A: No. I think Java calling Ruby is not yet possible (please verify from JRuby home page). But JRuby can help call Java from Ruby. Since typically Ruby programs are developed as DSLs, this should suffice.

Arti Pande - 07:33 PM

Q: Is internal DSL more likely to be constrained by limitations of the language in which it is implemented?

A: Yes. But languages like Lisp provide powerful features that can morph host language to the needs of the domain. In general, this constraint is valid.

Abbas Meeran - 07:34 PM

Q: Does the external DSL evolve for the future requirements?

A: Yes.

Ajith V L - 07:34 PM

Q: Learning the DSL would take additional time and it will also be specific to the domain. So how feasible is it to construct DSL?

A: Please see above.

Q: How close is Ruby to .NET in terms functionalities and features it offers to developers?

A: I don't know .NET. But you can check 'IronRuby', an implementation of Ruby that runs in CLR .NET.

Arti Pande - 07:13 PM

Q: For whom is DSL best suited? Programmers or Domain / Business Analysts?

A: Domain-experts. If the domain is database access, then SQL is DSL for it.

Niranjan Sarade - 07:14 PM

Q: MDA Distilled - what is the full form?

A: It is a book. 'MDA' stands for Model-driven Architecture.

Karthik Palanivelu - 07:14 PM

Q: Do we have any IDE for Ruby?

A: Netbeans, Eclipse, RubyMine.

Abbas Meeran - 07:14 PM

Q: Does the internal DSL evolve for future requirements?

A: Yes, because they are (rather need to be) well-written libraries.

Naveen D - 07:14 PM

Q: 1. The whole Idea of using Ruby is because the language is as generic as possible.

Does it not contradict to talk about DSL?

A: Ruby (like any other programming language) can be a choice to write internal DSLs. Internal DSLs can cope up with increased scope of domain after some maturity, where external DSLs break. See “External DSL vs. Internal DSL Smack Down” for more info.

Karthik Palanivelu - 07:14 PM

Q: As far as I understood, this DSL will be useful only when the user of our application is going to write a program/query the database for a desired output. Is that right?

A: Not quite limited to this. Imagine a medicine practitioner is using DSL to write prescriptions which machine can directly process.

Karthik Palanivelu - 07:15 PM

Q: The example of visulaization can be done in any language already existing. What's the advantage of using DSL/Ruby here?

A: Simplicity of Ruby syntax and semantics exposed through this syntax.

Karthik Palanivelu - 07:15 PM

Q: Are the words/keywords "every", "days" are all predefined in ruby?

A: No. They are methods (as described in presentation).

Abbas Meeran - 07:18 PM

Q: If the DSL is becoming commercial, how will the future be for programmers?

A: Interesting. Programmers hopefully, will be writing commercial DSLs.

Niranjan Sarade - 07:28 PM

Q: Does building DSL with ruby require a deep knowledge of meta-programming?

A: Good question. It is not needed. But equally, it is not difficult to use meta-programming features of Ruby after a while.

Rohan

Abbas Meeran - 06:57 PM

Q: What is the difference between Internal DSL and External DSL

A:Internal DSLs are particular ways of using a host language to give the host language the feel of a particular language. This approach has recently been popularized by the Ruby community although it's had a long heritage in other languages.

External DSLs have their own custom syntax and you write a full parser to process them. There is a very strong tradition of doing this in the Unix community.

Paritosh Nagda - 07:11 PM

Q: Which type of projects are developed in this language?

A: There is no limitation on the kind of projects that can be developed using Ruby. Rich desktop applications, web applications, mobile application, system utilities – it's all possible. At the moment Web applications are the rage with Ruby because of the fantastic web application framework called Rails (http://rubyonrails.org)

mahesh talekar - 07:08 PM

Q: Do we have the concepts of pointers in Ruby?

A: Nope. No pointers in Ruby.

KrishnaKanth B N - 07:10 PM

Q: I understand that DSLs are more expressive than OO languages. But when do we need to go for DSLs?

Pravin Mohite - 07:10 PM

Q: Does Ruby have all OOAD concepts?

A: Yes. Ruby is totally Object Oriented. The call "2.days()" is a very good example where even the basic integers are objects and its possible to call a method 'days' on a number

Amol Jadhav - 07:10 PM

Q: Isn't testability important while *using* DSL?

A: While writing a DSL, the DSL itself would be well tested. Usage of DSLs normally reduce the amount of code in the solution because of the rich language that DSLs bring to the solution. An important side effect of this is that we reduce the number of likely bugs in the solution that we are building. But as usual, testability is an important aspect with any software that you build.

Chetan Arya - 07:11 PM

Q: Isn't DSL implementation in RUBY easy just because it allows for adding properties to base classes? Can we replace Ruby with any other language too?

A: You can easily replace Ruby with any language to build DSLs. It's just that the language features of Ruby make it a nice language to write DSLs which are terse and easy to read.

mahesh talekar - 07:16 PM

Q: Can we define our own libraries in Ruby?

A: Yes you can.

Ravindra Naik - 07:20 PM

Q: Are there any instances of Ruby's usage for business domains like insurance or banking, health care, etc?

A: Thoughtworks is currently developing one of the largest Inventory Management projects in the world using Ruby.

arun kumar m s - 07:19 PM

Q: Is python as good?

A: Python is also a very good language to use for DSL development because of its Dynamic features.

utkal samal - 07:17 PM

Q: Does ruby supports IOC

A: There are multiple IOC solutions for Ruby. Copland is one of them - http://copland.rubyforge.org/api/

utkal samal - 07:18 PM

Q: Is Ruby platform independent and how does it do that?

A: Yes - there are various interpreters for Ruby. Incluing on the Mobile platform (Symbian). You could also use JRuby (http://jruby.codehaus.org/) which allows you to use Ruby on the JVM, and JVMs are available for almost every platform.

Amit Punpale - 07:31 PM

Q: What kind of learning curve is involved in Ruby? Is it easy to pick up the concepts of Ruby?

A: It's very very simple. There are a lot of ruby tutorials out on the internet. The Pickaxe book (Programming in Ruby) is a very good book to start out with.

Abbas Meeran - 07:33 PM

Q: Can any ruby program can be exposed as a REST service

A: Yes. ActiveResource is a library which can be used to expose REST services. Wrest (http://github.com/kaiwren/wrest/tree/master) is another very good library which is under active development

KrishnaKanth B N - 07:37 PM

Q: Which application servers can be used for web development in Ruby?

A: There are multiple solutions out there. Passenger (http://www.modrails.com), Mongrel (http://mongrel.rubyforge.org/) are some good solutions

Ashok Kumar Rajendran - 08:32 PM

Q: When the code base is large, with static typing and static analysis is it easy to refactor your code and catch errors early? How does Ruby help refactoring in a large code base due to its dynamic nature?

A: At the moment we have some very basic tools for refactoring in Ruby. But this is fast changing with IDEA (which has given us the fantastic IDE - IntelliJ) releasing RubyMine, and IDE for Ruby. Refactoring tools were first built for Smalltalk (which is a dynamic language). I'm sure we would have good IDE support for the ruby language very soon.