CREDIT SUISSE

JCP F2F May 2013 Zurich

JSR 354 – Money & Currency
Update

Anatole Tresch, Spec Lead JSR 354

15th May 2013

Agenda

- Introduction and History
- Short Overview
- Expert Group
- Publicity and Collaboration
- Schedule
- Participation and Transparency

Introduction and History

About this JSR

- Monetary values are a key feature to many applications
- Existing `java.util.Currency` class is strictly a structure used for representing ISO-4217 standard currencies.
- No standard value type to represent a monetary amount
- No support for currency arithmetic or conversion
- JDK Formatting features lack of flexibility

- Provide a flexible and extendible Java API for financial use cases.

Introduction

- Model a new API (former platform scope) with

    - an extended currency unit

    - an abstraction for monetary amounts, including algorithmic operations and functional extensions

- …and also for

    - Currency conversion

    - More customizable and flexible formatting

    - Extended Currency related Services, e.g.

        - historic currencies and currency namespace mapping

        - Regional aspects (countries, regions, groups)

Business Justification

Martin Fowler:

A large proportion of the computers in this world manipulate money, so it's always puzzled me that money isn't actually a first class data type in any mainstream programming language. The lack of a type causes problems, the most obvious surrounding currencies…
see
http://martinfowler.com/eaaCatalog/money.html

Eric Evans – Time and Money:

On project after project, software developers have to reinvent the wheel, creating objects for simple recurring concepts such as "money" and "currency". Although most languages have a "date" or "time" object, these are rudimentary, and do not cover many needs, such as recurring sequences of time, durations of time, or intervals of time. …
To be quite frank, their code isn't more than an academic POC, factories called dollars() or euros() are useless in real globally deployed frameworks, but he made a good point.

History

- Submitted by Victor Grazi (former Credit Suisse)
- Stages so far:
  - JSR Review: 05 Jan-06 Feb, 2012
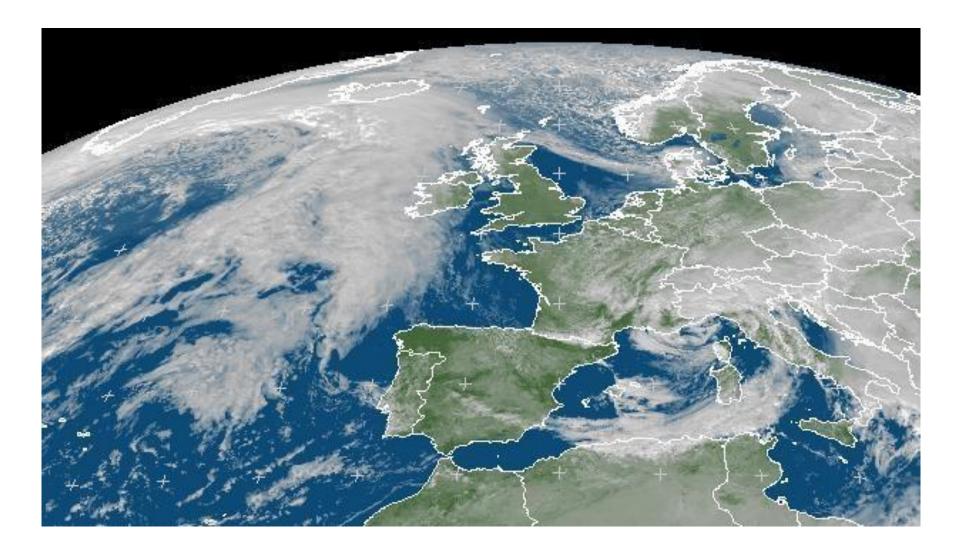 - JSR Review Ballot: 7-20 Feb, 2012
  - Spec Lead Change: 21 Dec 2012
  - JSR Renewal Ballot: 22 Jan-04 Feb, 2013
  - EDR: 01-31 May, 2013

Short Overview

Key Decisions and Features

- **Monetary Amount**
  - Contradictionary Requirements: Support different numeric representations!
  - Define inter-operability rules, when mixing representations
- **Enhanced Currency**
  - Support different namespaces, use ISO-4217 as default
  - Add optional validity properties (`getValidFrom,getValidUn`
  - Add additional properties (`isLegalTender,isVirtual`)
- **Finally**
  - Define interfaces for interop (`CurrencyUnit, MonetaryAmount`)
  - Provide immutable value types implementing the above (`MoneyCurrency, Money - ` based on `BigDecimal`)
- **platform scope only includes ISO support**

Key Decisions and Features (continued)

- **Forward-port Functional Interfaces:**
  - Model `MonetaryFunction` similar to SE8 `Function`
  - Model `MonetaryOperator` similar to SE8 `UnaryOperator`
- **Support operation chaining using** `MonetaryAmount#with(MonetaryOperator op)`
- **Implement Rounding as *MonetaryOperator***
- **Implement Conversion as *MonetaryOperator***

- **Use *Long* for timestamps (instead of *long* or threeten types)**

- **Manage less focused aspects as extensions or extras.**

Expert Group

The Expert Group

- EG is quite small, should be more representative, many silent EG members
- Participation or Support of Oracle would be important
    - To prepare for successful integration into SE
    - To know also Oracle's point of view on hot topics, e.g.
        - Optimal numeric representation
        - Extended formatting features (quite general concepts!)
        - Backwards Compatibility
        - Project Modularization and Packaging

- Communication mainly via public mailing list, TelCo and Google Hangouts
- Collaboration Tools
    - Google Doc
    - Doodle
    - JCP Site (including EG private area)
    - JSR Project Site (java.net)

Publicity and Collaboration

Publicity

- Presented on several conferences
  - Codemotion Rome, Berlin
  - Expert Days Berlin
  - JavaOne Moskau, India, Shanghai
  - GeeCon Krakau
  - … (more)
- CFP open for
  - Oslo, Madrid, München, Zürich
  - JavaOne San Francisco
- Twitter, Google+, Spec Lead's Blog (Blog: http://javaremarkables.blogspot.ch/)
- Planned to write articles on JavaMagazin, and also similar for English publication

Collaboration with other Community Groups

- Planned
  - JUG Switzerland (Zurich and Bern)
- Planned, but not yet done:
  - JUG Stuttgart
  - JUG Austria
  - …
- JUG Chennai started adoption

Schedule

Schedule

- Early Draft Review: 1-30 May 2013

- Public Review: July 2013

  - Depending on the feedback, also a second EDR may be useful

- Proposed Final Draft: September 2013

- Final Release: November 2013

- Java ME/Embedded 8 oder 9 not in (direct) scope

  Money is so important, and has almost no legacy in the JDK except `java.util.Currency`, that it should be supported by **all possible** platforms, except maybe JavaCard for now.

- Java SE 9: Early 2016

  Either a Maintenance Release or new version of this JSR shall be integrated with OpenJDK 9.

RI & TCK Development

■Reference Implementation basically functional for
  ■Core (currencies, amounts)
  ■Conversion (IMF, EZB)
  ■Formatting (maybe not feature complete)
  ■TODOs
    ■Testing
    ■Ensure Code Quality
    ■Implement Extended Features (e.g. numeric precision management, Region and Country support, non standard rounding)

■TCK not yet started (though some tests already exist)

Participation and Transparency

Participation and Transparency

- JCP page: http://jcp.org/en/jsr/detail?id=354
- Project Wiki: http://java.net/projects/javamoney/
- Source Code Repository:
  https://github.com/JavaMoney/javamoney
- Issue Tracker: https://java.net/jira/browse/JAVAMONEY

Mailing Lists or Forums

- Public Mailing List: jcurrency_mail@javamoney.java.net
- Discussions Archive:
  https://java.net/projects/javamoney/lists/jcurrency_mail/archive
- Public Forum:
  https://java.net/projects/javamoney/forums/message-forum

Q & A

???

CREDIT SUISSE