JSR 354 – Money & Currency
Update

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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, getValidUntil)
  - 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**

Update to JSR 354 - http://java.net/projects/javamoney

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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

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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

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Participation and Transparency

- 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