



Apache Isis



*Introducing...
Apache Isis*



Ubiquitous Language



With a conscious effort by the team, the domain model can provide the backbone for that common language

*Eric Evans,
Domain Driven Design*

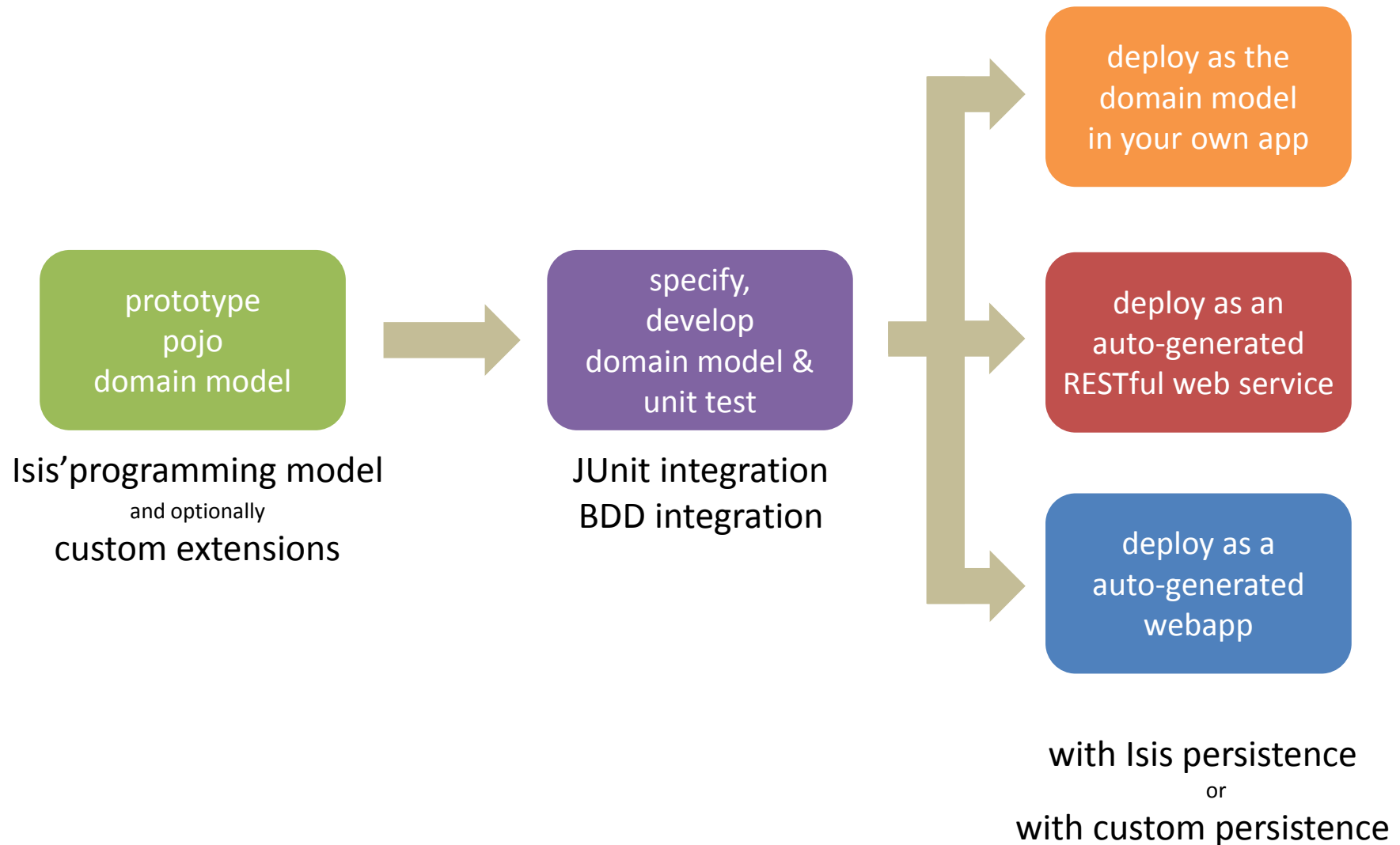


What is Apache Isis?

- Apache Isis is a Java framework for writing domain-driven applications
- You develop your domain objects...
... and Isis does the rest
- As a consequence
 - you only focus on the domain
 - you can prototype or develop apps very quickly
 - you ~~don't~~ can't put business logic outside the domain
- Isis is extensible and customisable
 - programming conventions
 - security, user interface, persistence



Isis Use Cases





Isis apps are just pojos

```
Claim.java x
package org.nakedobjects.examples.claims.dom.claim;

import java.util.ArrayList;

public class Claim extends AbstractDomainObject {

    // {{ Description
    private String description;
    @MemberOrder(sequence = "1")
    public String getDescription() {
        return description;
    }
    public void setDescription(String description) {
        this.description = description;
    }
    // }}

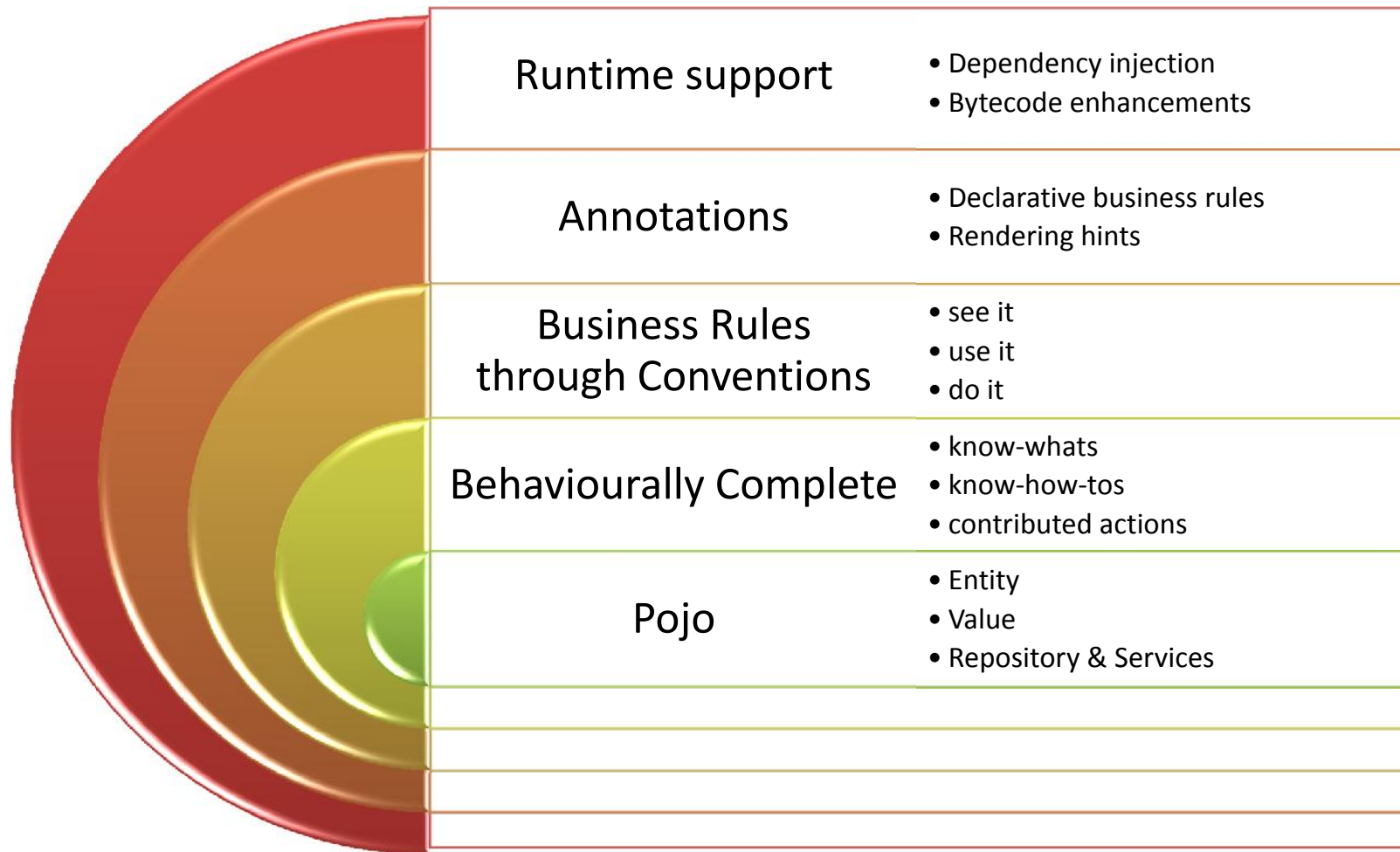
    // {{ Date
    private Date date;
    @MemberOrder(sequence = "2")
    public Date getDate() {
        return date;
    }
    public void setDate(Date date) {
        this.date = date;
    }
    // }}

    // {{ Items
    private List<ClaimItem> items = new ArrayList<ClaimItem>();
    @MemberOrder(sequence = "6")
    public List<ClaimItem> getItems() {
        return items;
    }
    public void addToItems(ClaimItem item) {
        items.add(item);
    }
    // }}

    // {{ action: Submit
    public void submit(Approver approver) {
        setStatus("Submitted");
        setApprover(approver);
    }
    public String disableSubmit() {
        return getStatus().equals("New") ? null : "Claim has already been submitted";
    }
    public Object[] defaultSubmit() {
        return new Object[] { getClaimant().getApprover() };
    }
    // }}
}
```



The Isis Programming Model





So, what does the app look like?

- [Isis Online Demo](#)



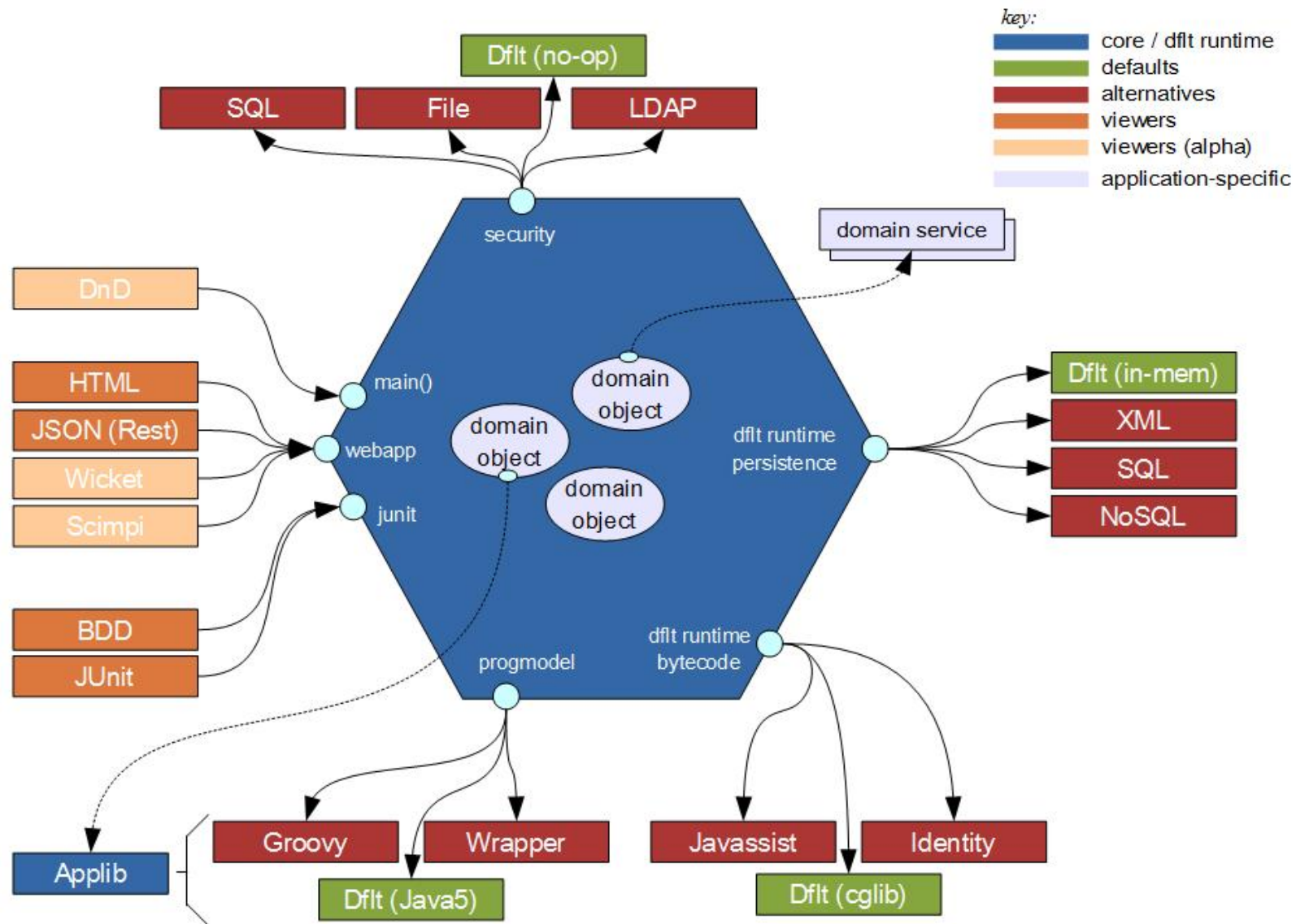
- Maven archetype

```
mvn archetype:generate  
    -D archetypeGroupId=org.apache.isis.support  
    -D archetypeArtifactId=quickstart-archetype
```

\\
\\



Apache Isis' Architecture





Resources

- Apache Isis Incubator website
 - <http://incubator.apache.org/isis>
 - links to the mailing list
 - <mailto:isis-users@incubator.apache.org>
 - links to the wiki and to JIRA
 - describes how to use Isis' quickstart archetype
- Isis Online Demo
 - <http://mmyco.co.uk:8180/isis-onlinedemo>
- Restful Objects spec
 - <http://restfulobjects.org>
 - as implemented by the json (REST) viewer



Naked Objects

- An Architectural Pattern
 - automatically renders domain objects in an OOUI
 - fits in with the hexagonal architecture
- A Principle
 - all business functionality is encapsulated on the core business objects
 - “problem solver, not process follower”
- A natural bed-fellow for Domain-Driven Design
 - rapid prototyping & development





Don't Repeat Yourself

- The UI representations correspond directly with the underlying domain object model
- So, for instance:
 - objects instances exposed as icons
 - object properties / collections exposed in forms
 - object methods exposed as menu items
 - eg `Claim#submit(Approver)`
 - repositories/domain services exposed as desktop icons
 - eg `ClaimRepository, EmployeeRepository`





The DSP: Why?

Strategic Agility

Respond to
unforeseen
changes in
business
requirements

Operational Agility

Provide
clerical
officers with
greater
flexibility to
solve
customers'
problems

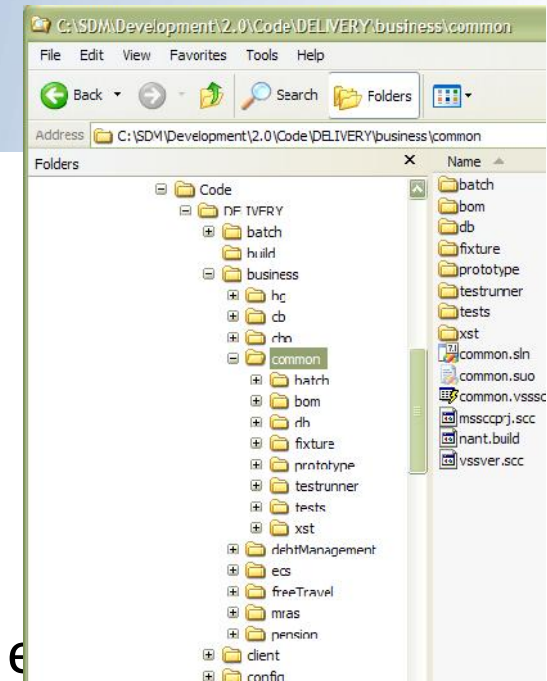
Technical Agility

Accommodate
changes in
technology



The DSP What?

- Platform for the future generation of business systems
 - the common BOM (a shared kernel)
 - a technology platform
 - UI, remoting, bespoke ORM, ...
- Specific applications replacing & extending e administration systems:
 - State pensions, Free Travel, Household Benefits, ECS, ...
 - Overpayment/Debt Management system, Medical Referrals, ...
- Integration with other systems, technologies and dept^s
 - BizTalk messaging, batch, scanning, barcodes, ...
 - Central Printing, SMS, other media, ...





Why the DSP's Naked Objects system makes for an interesting story:

Domain-driven design

- One of the purest examples of domain-driven design for a large-scale transactional business application, anywhere in the world
- Extreme re-use and sharing of objects between applications
- Enables easy modification in response to changing business requirements

Agile Development

- Possibly the first large-scale application of agile development within the public sector, anywhere in the world

Empowered Users

- A rich user interface to a core transactional business system

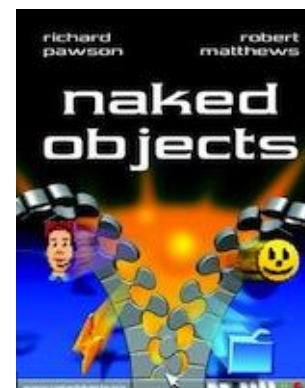
Powerful & Productive Environment

- User interfaces 100% auto-generated from the underlying business objects
 - with no custom coding to write or to maintain
- More opportunity to explore domain than otherwise possible



Naked Objects Resources

- Richard Pawson's original thesis on Naked Objects
 - <http://incubator.apache.org/isis/Pawson-Naked-Objects-thesis.pdf>
- Richard Pawson and Rob Matthew's book
- Dan Haywood's book
 - <http://www.pragprog.com/titles/dhnako>
- Naked Objects MVC
 - <http://nakedobjects.net>
 - also implements the Restful Objects spec



Pragmatic
Programmers

Domain-Driven Design
Using Naked Objects

