Fake Data Library

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This module (`isis-module-fakedata`) provides a domain service that generates fake random data. The random values generated can then be used within unit and integration tests.

The module consists of a single domain service `FakeDataDomainService`. This can be injected into fixtures and integration tests just like any other domain service.

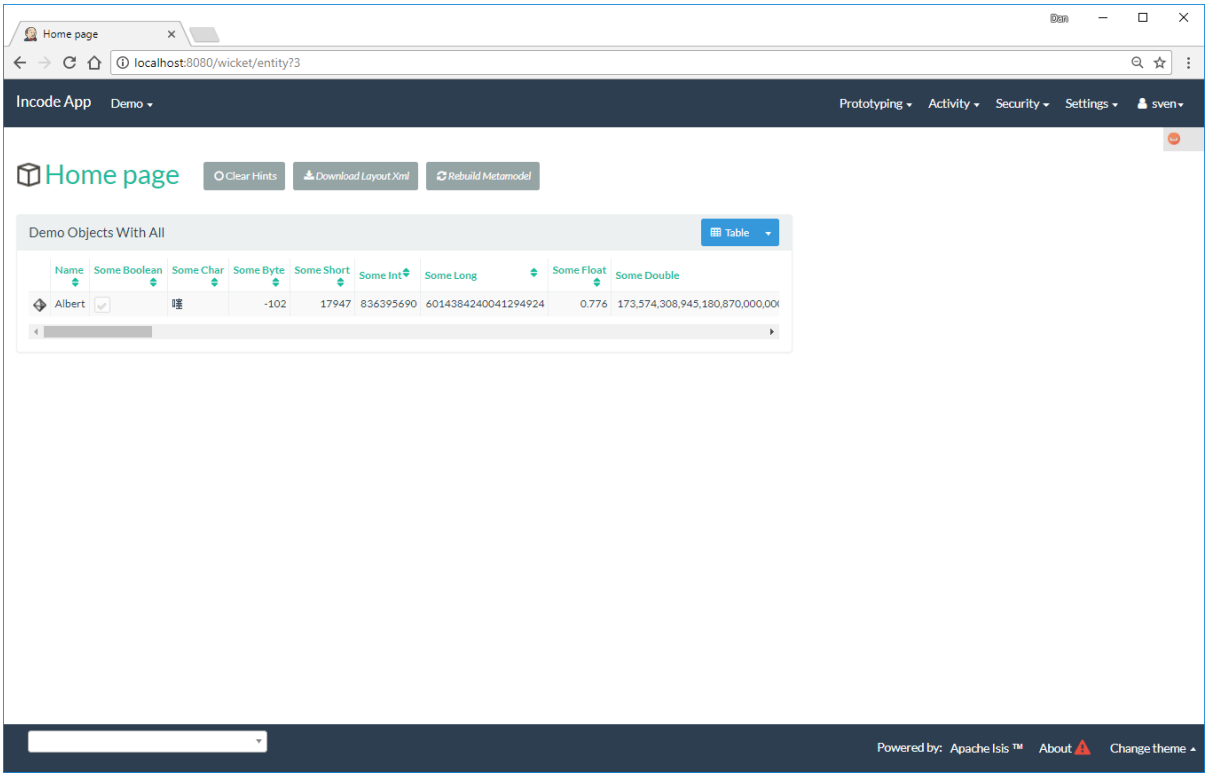
In addition, this module also acts as a useful regression suite for DataNucleus' persistence of value types (including our custom mappings of Isis' own value types).

Screenshots

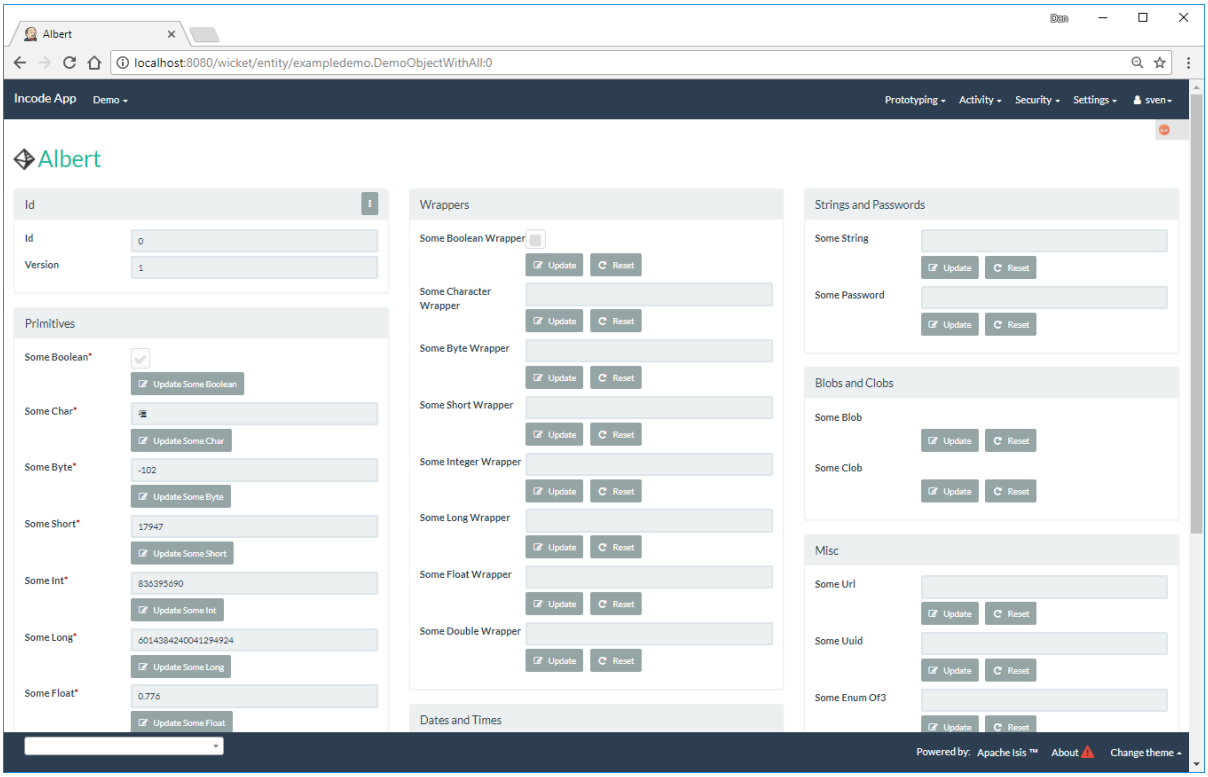
The module's functionality can be explored by running the quickstart with example usage using the `org.incode.domainapp.example.app.modules.ExampleDomLibFakeDataAppManifest`.

The example app consists of a single domain entity that has a property for each of the value types supported by Isis.

A home page is displayed when the app is run:



will return an example demo object:


Albert
localhost:8080/wicket/entity/exampledemo.DemoObjectWithAll:0
Incode App
Demo
Prototyping
Activity
Security
Settings
sven
Albert
Id
Id
0
Version
1
Primitives
Some Boolean*
Update Some Boolean
Some Char*
Update Some Char
Some Byte*
-102
Update Some Byte
Some Short*
17947
Update Some Short
Some Int*
836395690
Update Some Int
Some Long*
6014384240041294924
Update Some Long
Some Float*
0.776
Update Some Float
Wrappers
Some Boolean Wrapper
Update
Reset
Some Character Wrapper
Some Byte Wrapper
Some Short Wrapper
Some Integer Wrapper
Some Long Wrapper
Some Float Wrapper
Some Double Wrapper
Dates and Times
Strings and Passwords
Some String
Some Password
Blobs and Clobs
Some Blob
Some Clob
Misc
Some Url
Some Uuid
Some Enum Of3
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Fixtures and Integration Tests

Probably of more interest are the fixtures and integration tests that actually use the `FakeDataService`.

For example the `FakeDataDemoObjectUpdate` fixture script will update a demo object using the provided values (set as properties of the fixture script itself). However, if no value has been set by the calling test, then a random value, obtained from `FakeDataService`, will be used instead:

```
public class FakeDataDemoObjectUpdate extends DiscoverableFixtureScript {
```

```
private FakeDataDemoObject fakeDataDemoObject;
public FakeDataDemoObject getFakeDataDemoObject() { ... }
public void setFakeDataDemoObject(final FakeDataDemoObject fakeDataDemoObject) { ... }
```

```
...
private Boolean someBoolean;
public Boolean getSomeBoolean() { ... }
public void setSomeBoolean(final Boolean someBoolean) { ... }
```

```
private Character someChar;
public Character getSomeChar() { ... }
public void setSomeChar(final Character someChar) { ... }
```

```
private Byte someByte;
public Byte getSomeByte() { ... }
public void setSomeByte(final Byte someByte) { ... }
...
```

```
protected void execute(final ExecutionContext executionContext) {
```

```
...
this.defaultParam("someBoolean", executionContext, fakeDataService.booleans().any());
this.defaultParam("someChar", executionContext, fakeDataService.chars().any());
this.defaultParam("someByte", executionContext, fakeDataService.bytes().any());
...
```

```
// updates
final FakeDataDemoObject fakeDataDemoObject = getFakeDataDemoObject();
```

```
    ...
    wrap(fakeDataDemoObject).updateSomeBoolean(getSomeBoolean());
    wrap(fakeDataDemoObject).updateSomeByte(getSomeByte());
    wrap(fakeDataDemoObject).updateSomeShort(getSomeShort());
    ...
}
```

```
    @javax.inject.Inject
    private FakeDataService fakeDataService;
}
```

The `FakeDataService` can also be used within integration tests. For example, in `FakeDataDemoObjectsTest` a fake value is used to obtain a blob for update:

```
@Test
public void when_blob() throws Exception {
```

```
// given
Assertions.assertThat(fakeDataDemoObject.getSomeBlob()).isNull();
```

```
final Blob theBlob = fakeDataService.isisBlobs().anyPdf();
```

```
// when
updateScript.setFakeDataDemoObject(fakeDataDemoObject);
updateScript.setSomeBlob(theBlob);
```

```
fixtureScripts.runFixtureScript(updateScript, null);
```

```
nextTransaction();
```

```
// then
fakeDataDemoObject = wrap(fakeDataDemoObjects).listAll().get(0);
```

```
    Assertions.assertThat(fakeDataDemoObject.getSomeBlob()).isNotNull();
    Assertions.assertThat(fakeDataDemoObject.getSomeBlob().getMimeType().toString())
              .isEqualTo("application/pdf");
}
```

Note the use of `FakeDataService` in the "given" to obtain a PDF blob.

How to configure/use

Classpath

Update your classpath by adding this dependency in your project's `dom` module's `pom.xml`:

```
<dependency>
    <groupId>org.isisaddons.module.fakedata</groupId>
    <artifactId>isis-module-fakedata-dom</artifactId>
</dependency>
```

Check for later releases by searching [Maven Central Repo](http://search.maven.org/#search|ga|1|isis-module-fakedata-dom)).

For instructions on how to use the latest `-SNAPSHOT`, see the contributors guide.

Bootstrapping

In the `AppManifest`, update its `getModules()` method, eg:

```
@Override
public List<Class<?>> getModules() {
    return Arrays.asList(
            ...
            org.isisaddons.module.fakedata.FakeDataModule.class,
            ...
    );
}
```

API and Implementation

The `FakeDataService` defines the following API:

```
public interface FakeDataService {

    public Names name() { ... }
    public Comms comms() { ... }
    public Lorem lorem() { ... }
    public Addresses addresses() { ... }
    public CreditCards creditCard() { ... }
    public Books books() { ... }

    public Bytes bytes() { ... }
    public Shorts shorts() { ... }
    public Integers ints() { ... }
    public Longs longs() { ... }
    public Floats floats() { ... }
    public Doubles doubles() { ... }
    public Chars chars() { ... }
    public Booleans booleans() { ... }

    public Strings strings() { ... }

    public Collections collections() { ... }
    public Enums enums() { ... }

    public JavaUtilDates javaUtilDates() { ... }
    public JavaSqlDates javaSqlDates() { ... }
    public JavaSqlTimestamps javaSqlTimestamps() { ... }
    public JodaLocalDates jodaLocalDates() { ... }
    public JodaDateTimes jodaDateTimes() { ... }
    public JodaPeriods jodaPeriods() { ... }

    public BigDecimals bigDecimals() { ... }
    public BigIntegers bigIntegers() { ... }

    public Urls urls() { ... }
    public Uuids uuids() { ... }

    public IsisPasswords isisPasswords() { ... }
    public IsisMoneys isisMoneys() { ... }
    public IsisBlobs isisBlobs() { ... }
    public IsisClobs isisClobs() { ... }

}
```

where each of the returned classes then provides suitable methods for obtaining values within that domain of values.

For example, `Names` provides:

```
public class Names ... {
    public String fullName() { ... }
    public String firstName() { ... }
    public String lastName() { ... }
    public String prefix() { ... }
    public String suffix() { ... }
}
```

and `IsisBlobs` provides:

```
public class IsisBlobs ... {
    public Blob any() { ... }
    public Blob anyJpg() { ... }
    public Blob anyPdf() { ... }
}
```

and `Collections` API includes:

```
public class Collections ... {
    public <T> T anyOf(final Collection<T> collection) { ... }
    public <T> T anyOfExcept(final Collection<T> collection, final Predicate<T>
except) { ... }
    public <T> T anyOf(final T... elements) { ... }
    public <T> T anyOfExcept(final T[] elements, final Predicate<T> except) { ... }
    ...
    public <E extends Enum<E>> E anyEnum(final Class<E> enumType) { ... }
    public <E extends Enum<E>> E anyEnumExcept(final Class<E> enumType, final
Predicate<E> except) { ... }
    public <T> T anyBounded(final Class<T> cls) { ... }
    public <T> T anyBoundedExcept(final Class<T> cls, final Predicate<T> except) { ...
}
}
```

with similar methods for all the primitives

Known issues

None known at this time.

Dependencies

Maven can report modules dependencies using:

```
mvn dependency:list -o -pl modules/lib/fakedata/impl -D excludeTransitive=true
```

which, excluding Apache Isis itself, returns these compile/runtime dependencies:

```
com.github.javafaker:javafaker:jar:0.5
```

For further details on 3rd-party dependencies, see:

- DiUS/java-faker