GMap3 Wicket Component
Table of Contents

Screenshots .................................................................................................................. 2
  Parented collection as gmap ......................................................................................... 2
  Update location using service ....................................................................................... 3
  Standalone location as gmap ........................................................................................ 4
  Click through ................................................................................................................ 4
API & Usage..................................................................................................................... 6
  Rendering objects on a map .......................................................................................... 6
  LocationDereferencingService ...................................................................................... 6
How to configure/use ........................................................................................................ 8
  Classpath ....................................................................................................................... 8
  Bootstrapping ................................................................................................................. 8
  Configuration Properties ............................................................................................... 8
Known issues .................................................................................................................... 9
Dependencies .................................................................................................................. 10
This component (isis-wicket-gmap3) allows an entity or collection of entities to be rendered within a map (using google’s gmap3 API).
Screenshots

The module’s functionality can be explored by running the quickstart with example usage using the org.incode.domainapp.example.app.modules.ExampleDomWktGmap3AppManifest.

Note that the isis.viewer.wicket.gmap3.apiKey must be set to a valid value; this is most easily done using a system property.

A home page is displayed when the app is run:

![Home page screenshot]

Parented collection as gmap

The todo item's collection contains a list of Locatable entities (also todo items); this is indicated through a button to switch the view:
Clicking the button shows the same entities on a gmap3:

Update location using service

This module previously provided a "LocationLookupService". This has been removed, since the underlying gmap3 geocoding service requires an .apiKey. A similar GeocodingService, providing a superset of functionality, is available in commchannel module (though this may move into its own library in the future, see #57).
Standalone location as gmap

Invoking an action that returns a list of Locatable entities also results in the button to view in a gmap:

... which then renders the items in a map. Note the tooltips:

Click through

Clicking on a map marker drills down to the entity:
Buy bread due by 2017-09-14

Priority

Due By: 24-09-2017

Cost

Cost: 3.75

Previews Cost

Notes

Other

Attachment Location: 1101E514-5010B8

Dependencies

- Buy bread
  - Category: Domestic
  - Subcategory: Shopping
  - Owner By: John
  - Complete: No
  - Due By: 03-09-2017
  - Cost: 10.00
  - Previous Cost: 12.00
  - Notes: None
  - Attachment Location: 1101E514-5010B8

- Buy bread
  - Category: Domestic
  - Subcategory: Garden
  - Owner By: Jane
  - Complete: No
  - Due By: 02-09-2017
  - Cost: 5.00
  - Previous Cost: 6.00
  - Notes: None
  - Attachment Location: 1101E514-5010B8

- Buy bread
  - Category: Domestic
  - Subcategory: Laundry
  - Owner By: Alice
  - Complete: No
  - Due By: 01-09-2017
  - Cost: 2.50
  - Previous Cost: 3.00
  - Notes: None
  - Attachment Location: 1101E514-5010B8
Rendering objects on a map

Make your entity implement `org.isisaddons.wicket.gmap3.applib.Locatable`, such that it provides a `Location` property of type `org.isisaddons.wicket.gmap3.applib.Location`.

This property will need to be annotated as `@javax.jdo.annotations.Persistent`.

For example:

```java
import org.isisaddons.wicket.gmap3.cpt.applib.Locatable;
import org.isisaddons.wicket.gmap3.cpt.applib.Location;

public class ToDoItem implements Locatable {
    ...
    @javax.jdo.annotations.Persistent
    private Location location;

    @MemberOrder(name="Detail", sequence = "10")
    @Nullable
    public Location getLocation() {
        return location;
    }
    public void setLocation(Location location) {
        this.location = location;
    }
}
```

You should then find that any collections of entities that have `Locatable` properties (either returned from an action, or as a parented collection) will be rendered in a map.

**LocationDereferencingService**

Sometimes the domain object that implements `Locatable` will be a supporting object such as an `Address`, belonging to a `Customer`, say. When the location marker is clicked in the map, we would rather that the UI opens up the `Customer` rather than the associated `Address` (in other words, saving a click).

This requirement is supported by providing an implementation of the `LocationDereferencingService`:

```java
public interface LocationDereferencingService {
    @Programmatic
    Object dereference(final Object locatable);
}
```
for example, one might have:

```java
public class LocationDereferencingServiceForAddress implements LocationDereferencingService {
    @Programmatic
    public Object dereference(final Object locatable) {
        if (!(locatable instanceof Address)) {
            return null;
        }
        final Address address = (Address) locatable;
        return address.getCustomer();
    }
}
```

Note that there can be multiple implementations of this service; the component will check all that are available. The order in which they are checked depends upon the `@DomainServiceLayout(menuOrder=...)` attribute.
How to configure/use

Classpath

Add the component to your project's dom module's pom.xml:

```xml
<dependency>
  <groupId>org.isisaddons.wicket.gmap3</groupId>
  <artifactId>isis-wicket-gmap3-cpt</artifactId>
</dependency>
```

Check for later releases by searching Maven Central Repo.

Bootstrapping

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

```java
@override
class GetModules {
  public List<Class<?>> getModules() {
    return Arrays.asList(
      ...org.isisaddons.wicket.gmap3.cpt.applib.Gmap3ApplibModule.class,
      ...};
  }
}
```

Configuration Properties

gmap3 API Key

In order to use the component an API key is required. See the google documentation for instructions as to how to do this; a free key (with quite generous daily limits) can be used.

Configure the key in WEB-INF/viewer_wicket.properties (or WEB-INF/isis.properties):

```properties
isis.viewer.wicket.gmap3.apiKey=XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX-XXXXX
```

The commchannel module also requires the same configuration, though under a different configuration property.
Known issues

None known at this time.
Dependencies

Maven can report modules dependencies using:

```
mvn dependency:list -o -pl modules/wkt/gmap3/impl -D excludeTransitive=true
```

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

- org.jdom:jdom:jar:2.0.2
- org.wicketstuff:wicketstuff-gmap3:jar:7.8.0
- org.apache.httpcomponents:httpclient:jar:4.5.2

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

- 42Lines/wicket-fullcalendar

In addition to Apache Isis, this component depends on:

- wicketstuff/core (gmap3 component)
  which integrates the Google Maps Javascript API
- JDOM
- Apache HttpComponents