GMap3 Wicket Component

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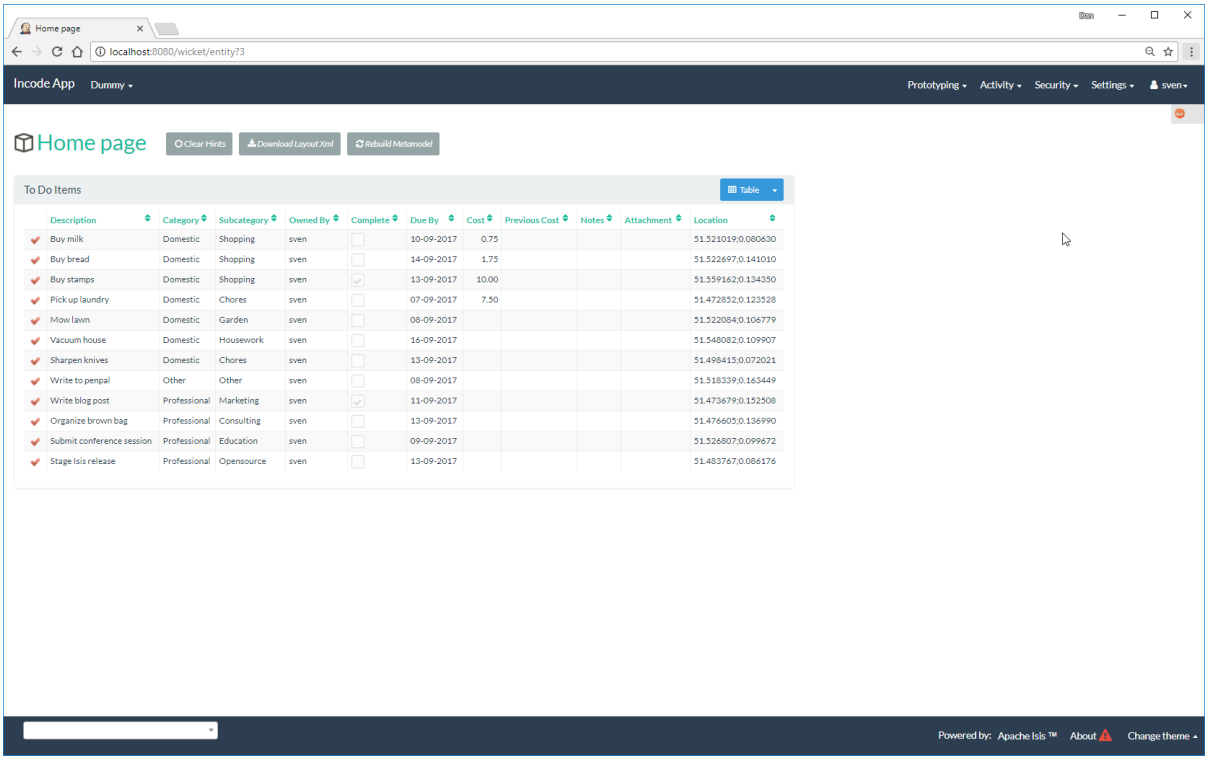
This component (`isis-wicket-gmap3`) allows an entity or collection of entities to be rendered within a map (using google's gmap3 API).

Screenshots

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

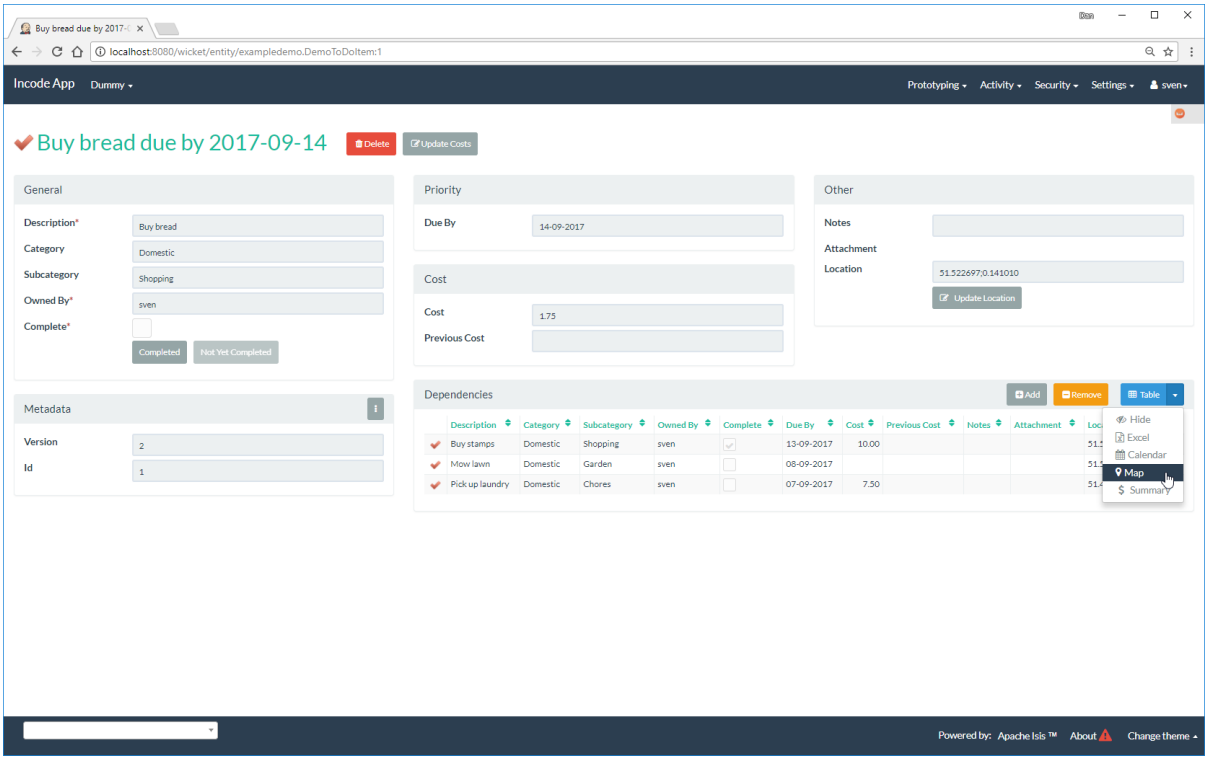
Note that the `isis.viewer.wicket.gmap3.apiKey` must be set to a valid value; this is most easily done using a system property.

A home page is displayed when the app is run:

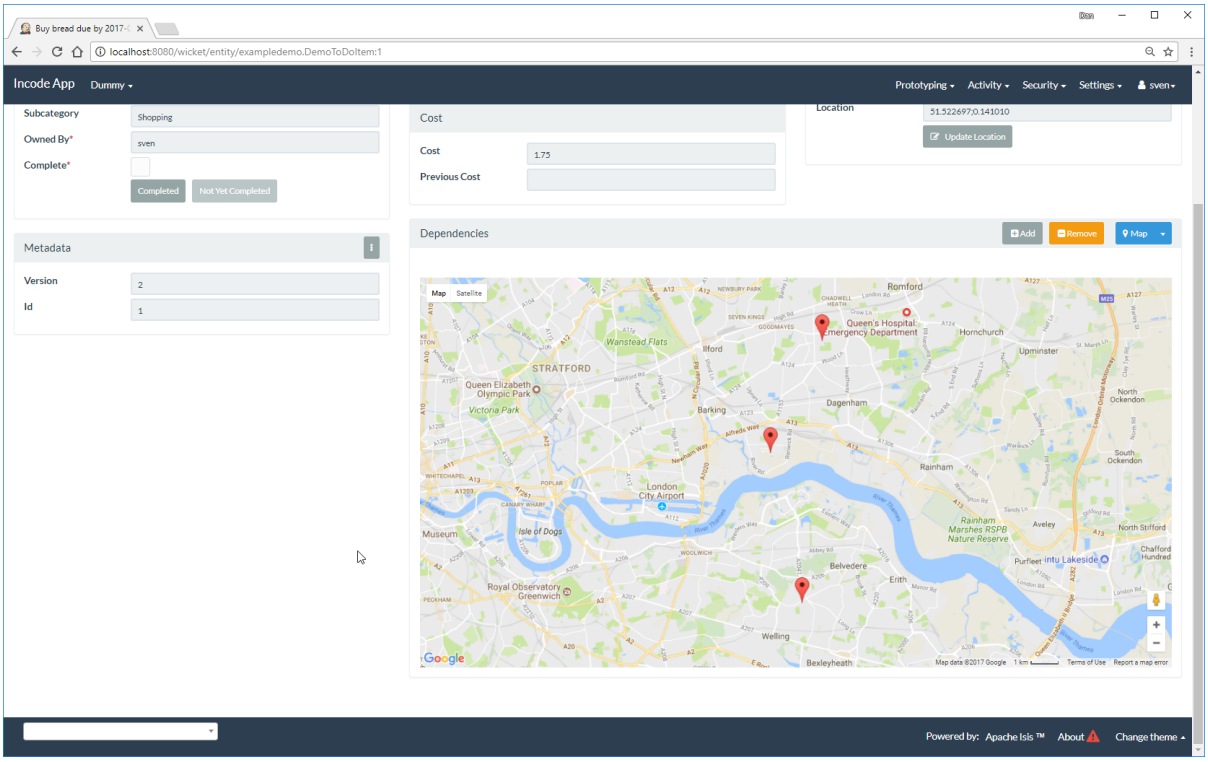


Parented collection as gmap

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:

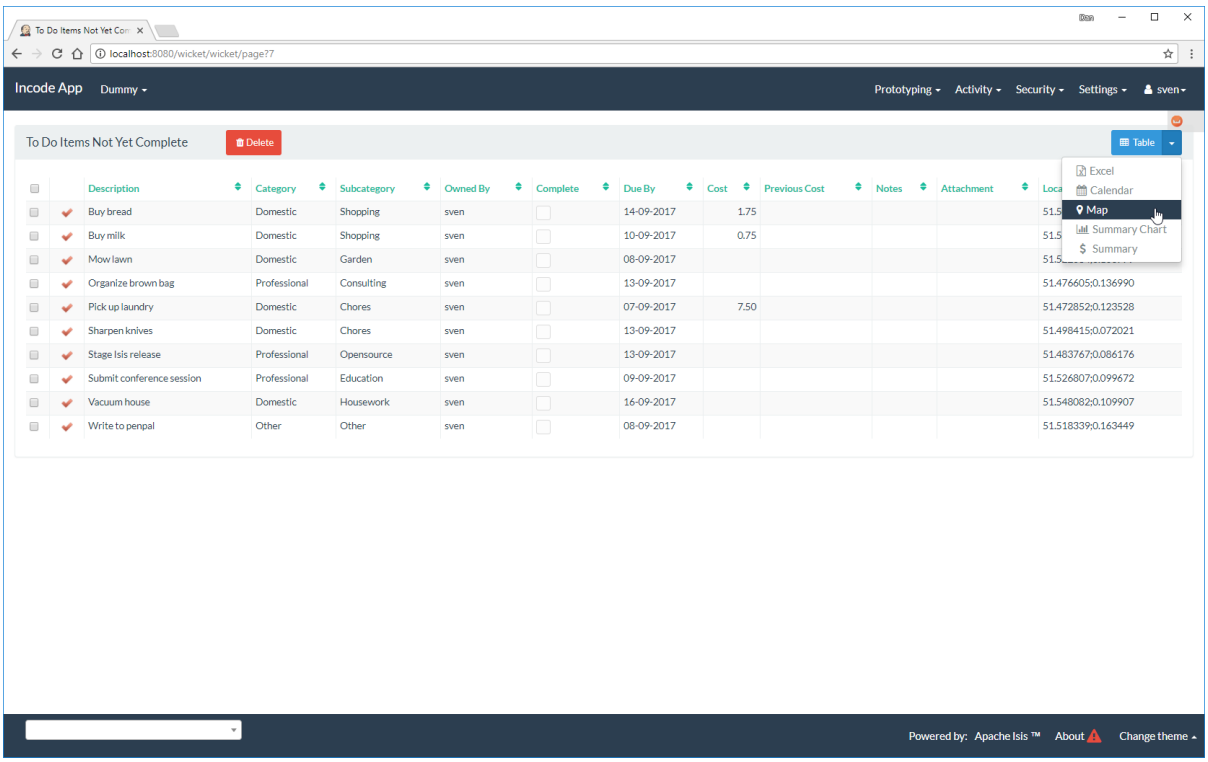


Update location using service

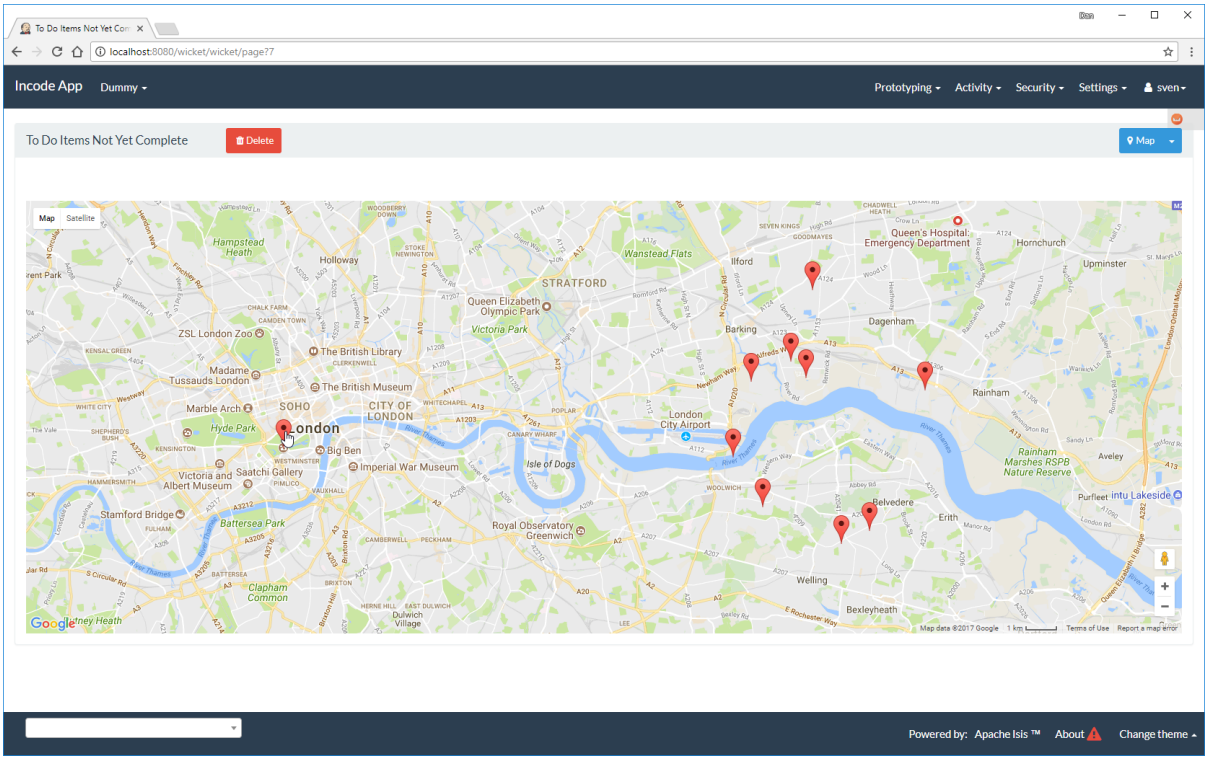
This module previously provided a "LocationLookupService". This has been removed, since the underlying gmap3 geocoding service requires an .apiKey. A similar `GeocodingService`, providing a superset of functionality, is available in commchannel module (though this may move into its own library in the 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 gmap3:

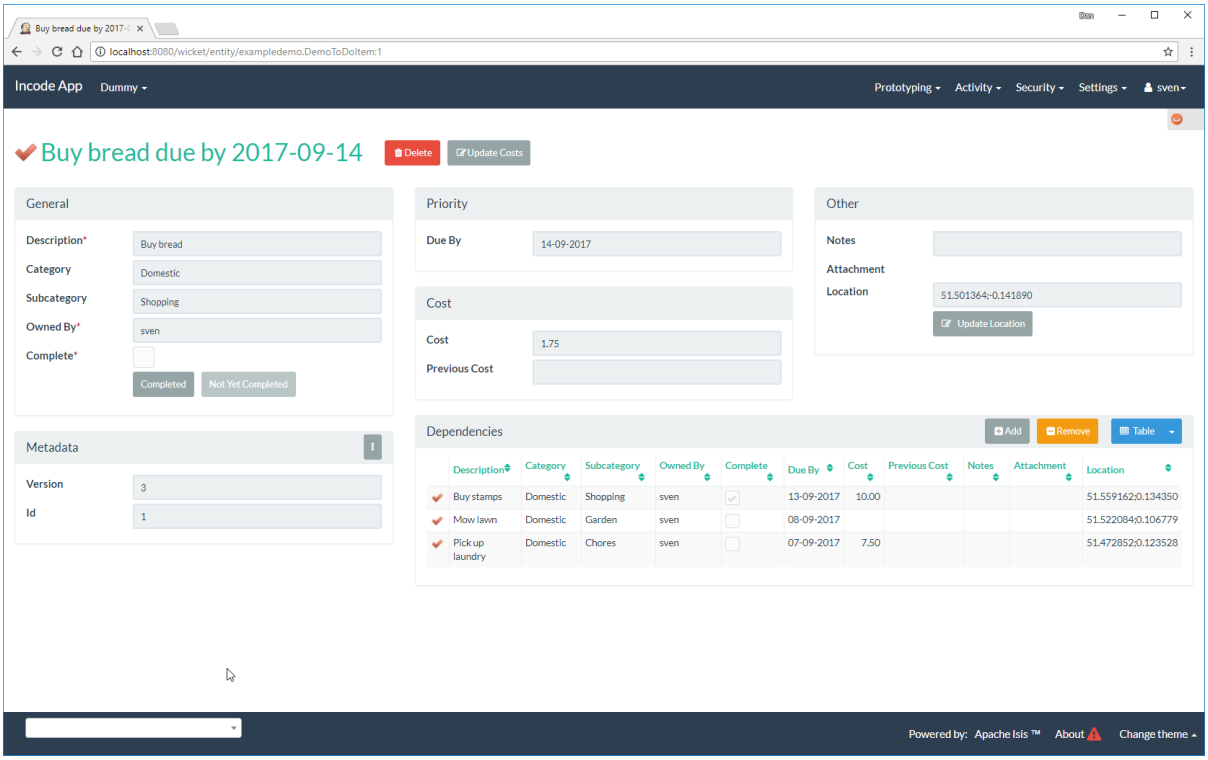


... which then renders the items in a map. Note the tooltips:



Click through

Clicking on a map marker drills down to the entity:


Buy bread due by 2017
localhost:8080/wicket/entity/exampledemo.DemoToDoItem:1
Incode App
Dummy
Prototyping
Activity
Security
Settings
sven
Buy bread due by 2017-09-14
Delete
Update Costs
General
Description*
Buy bread
Category
Domestic
Subcategory
Shopping
Owned By*
sven
Complete*
Completed
Not Yet Completed
Metadata
Version
3
Id
1
Priority
Due By
14-09-2017
Cost
Cost
1.75
Previous Cost
Other
Notes
Attachment
Location
51.501364;-0.141890
Update Location
Dependencies
Add
Remove
Table
Description
Category
Subcategory
Owned By
Complete
Due By
Cost
Previous Cost
Notes
Attachment
Location
Buy stamps
Domestic
Shopping
sven
13-09-2017
10.00
51.559162;0.134350
Mow lawn
Domestic
Garden
sven
08-09-2017
51.522084;0.106779
Pick up laundry
Domestic
Chores
sven
07-09-2017
7.50
51.472852;0.123528
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API & Usage

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:

```
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`:

```
public interface LocationDereferencingService {
    @Programmatic
    Object dereference(final Object locatable);
}
```

for example, one might have:

```
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`:

```
<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:

```
@Override
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`):

```
isis.viewer.wicket.gmap3.apiKey=XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX-XXXXXX
```

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