



Mashup Fundamentals and Applied Mashup using KML and Google Maps



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Oktober 12, 2011



IMT4892 Digital Workflow



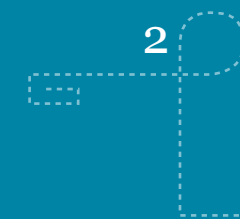
CC: BY-NC-SA



<http://www.ansatt.hig.no/kjellr/imt4892>



WHERE WE ARE NOW



WEEK	TOPIC
33	-
34	Course Introduction
35	A Brief History of Computing and an Introduction to Unix
36	Devices and data formats, wrappers and compressors
37	Tools for transforming common datatypes
38	Moving data, remote processing and workflow automation
39	Workflow automation, part 2, Cron
40	Intellectual property rights (IPR), including Creative Commons
41	Mashup fundamentals and applied mashup using KML and Google Maps
42	XML Fundamentals, part 1
43	XML Fundamentals, part 2
44	Academic planning and writing
45	Project, week 1 - project outline delivery
46	Project, week 2 - work
47	Project delivery/presentation
48	-
49	Exam

ASSIGNMENTS FROM LAST WEEK?

- Project proposals?
 - MusicXML (Supervisor Ivar)
 - VideoConcatenate (Supervisor Kjell Are)
 - ?
 - ?
 - ?
 - ?



© TODAY'S GOAL

After this lecture and its activities, you should be able to:

- Identify the core elements of a KML file
- Know some of the possibilities included in the KML file format
- Be able to build a simple KML file and extend existing ones
- Mashup own data with digital maps using calls to Google Maps



MASHUP

- Mix of two or more data sources to build new service
- How can I make one?
 - Through APIs
 - Web mashup (example: YouTube)
- KML is foundation for other geo-referenced formats:
 - KHARMA: <https://research.cc.gatech.edu/polaris/>
 - openARML: <http://www.openarml.org/wikitude4.html>

KML FORMAT

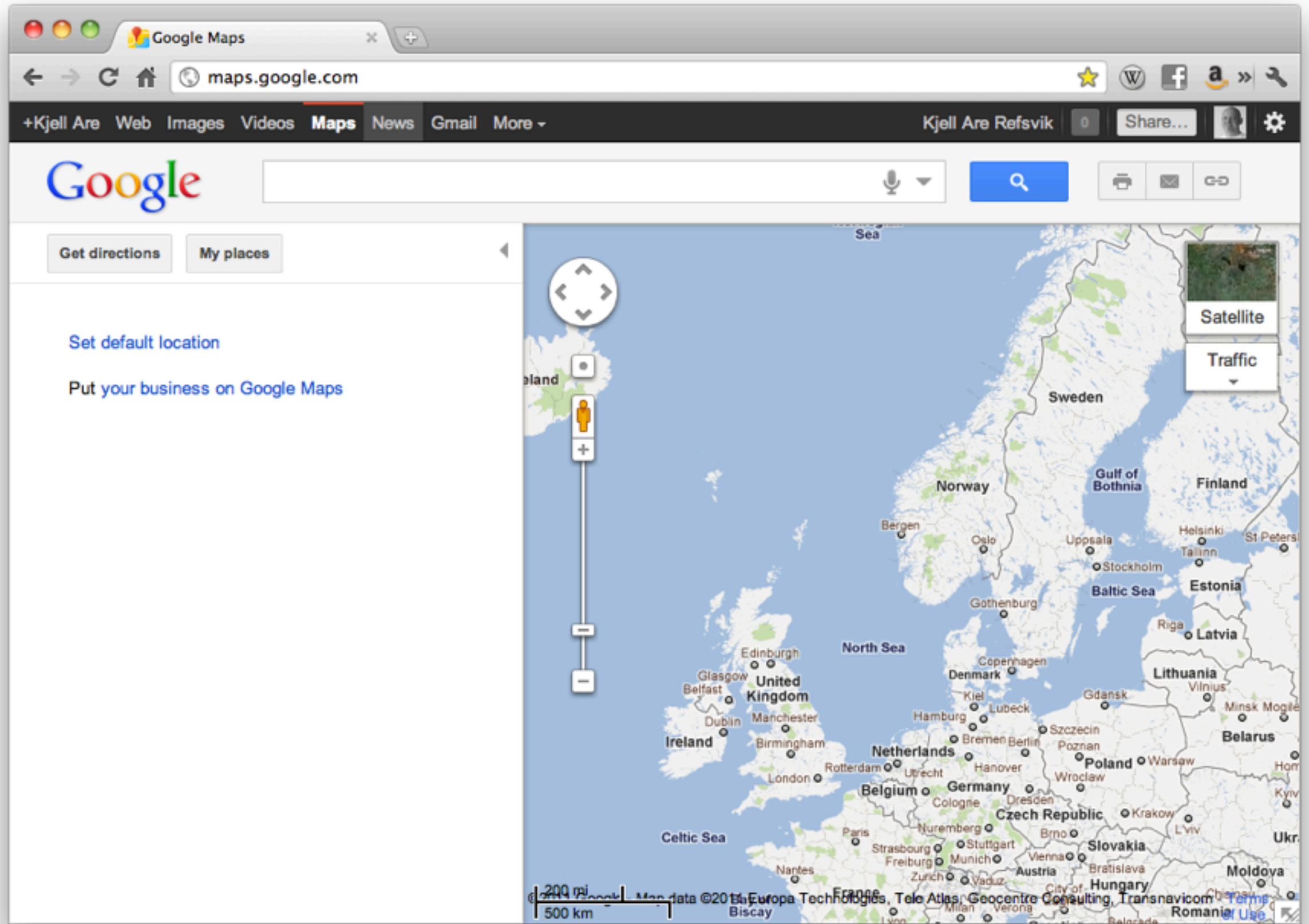
- KML, open file formats for embedding your data onto maps
- Acquired by Google and later given to a consortium to maintain as an open file format for geographic overlay data
- Can be done manually in a text editor or automated as a script
- It is a good training exercise to create a script that uses geodata in your files to place objects on a map
- UNIX strong in text processing, so using it to create KML files makes sense

```
20110815_innlandsuniv.kml
1 <?xml version="1.0" encoding="UTF-8"?>
2 <kml xmlns="http://www.opengis.net/kml/2.2">
3 <Document>
4   <name>Innlandsuniversitetet</name>
5
6   <Placemark>
7     <name>Høgskolen i Gjøvik</name>
8     <description>
9       <![CDATA[<a href="http://www.hig.no">www.hig.no</a>]]>
10    </description>
11    <Point><coordinates>10.68334410841293,60.79009723298694,0</coordinates></Point>
12  </Placemark>
13
14  <Placemark>
15    <name>Høgskolen i Lillehammer</name>
16    <description>
17      <![CDATA[<a href="http://www.hil.no">www.hig.no</a>]]>
18    </description>
19    <Point><coordinates>10.421906,61.151229,0</coordinates></Point>
20  </Placemark>
21
22  <Placemark>
23    <name>Høgskolen i Hedmark, Elverum</name>
24    <description>
25      <![CDATA[<a
26      href="http://www.hihm.no/Hovedsiden/Campus-Elverum">http://www.hihm.no/Hovedsiden/Campus-Elverum</a>]]>
27    </description>
28    <Point><coordinates>11.5580572762177,60.8854798030363,0</coordinates></Point>
29  </Placemark>
30  <Placemark>
```

Line: 7 Column: 40

Plain Text

Tab Size: 4



The screenshot shows a web browser window with the following content:

- Browser Tab:** Galdos Systems Inc. KML Vali
- Address Bar:** kmlvalidator.com/validate.htm
- Page Header:** KML validator ^{beta} and galdos systems inc.
- Validation Details:**
 - File:** http://www.ansatt.hig.no/kjellr/misc/20110815_innlandsuniv.kml
 - Validated On:** 2011-10-11
 - Status:** The KML file is valid and complies with best practices.
- Summary Statistics:** A light blue box contains three green circles, each with the number '0', representing:
 - Errors:** 0
 - Recommendations:** 0
 - Suggestions:** 0
- Feedback:** "We welcome your [feedback!](#)" and "[Source KML Content](#)" with a downward arrow.
- Action:** A blue button labeled "Validate Another KML File".
- Message:** "Congratulations! Your KML file complies with the requirements and recommendations of the OGC KML 2.2 Standard."

Innlandsuniversitetet - Goog x

maps.google.com

Kjell Are Refsvik

Share...

Google

http://www.ansatt.hig.no/kjellr/misc/20110815_innlandsu

Get directions My places

Displaying content from www.ansatt.hig.no
 The content displayed below and overlaid onto this map is provided by a third party, and Google is not responsible for it. Information you enter below may become available to the third party.

Innlandsuniversitetet

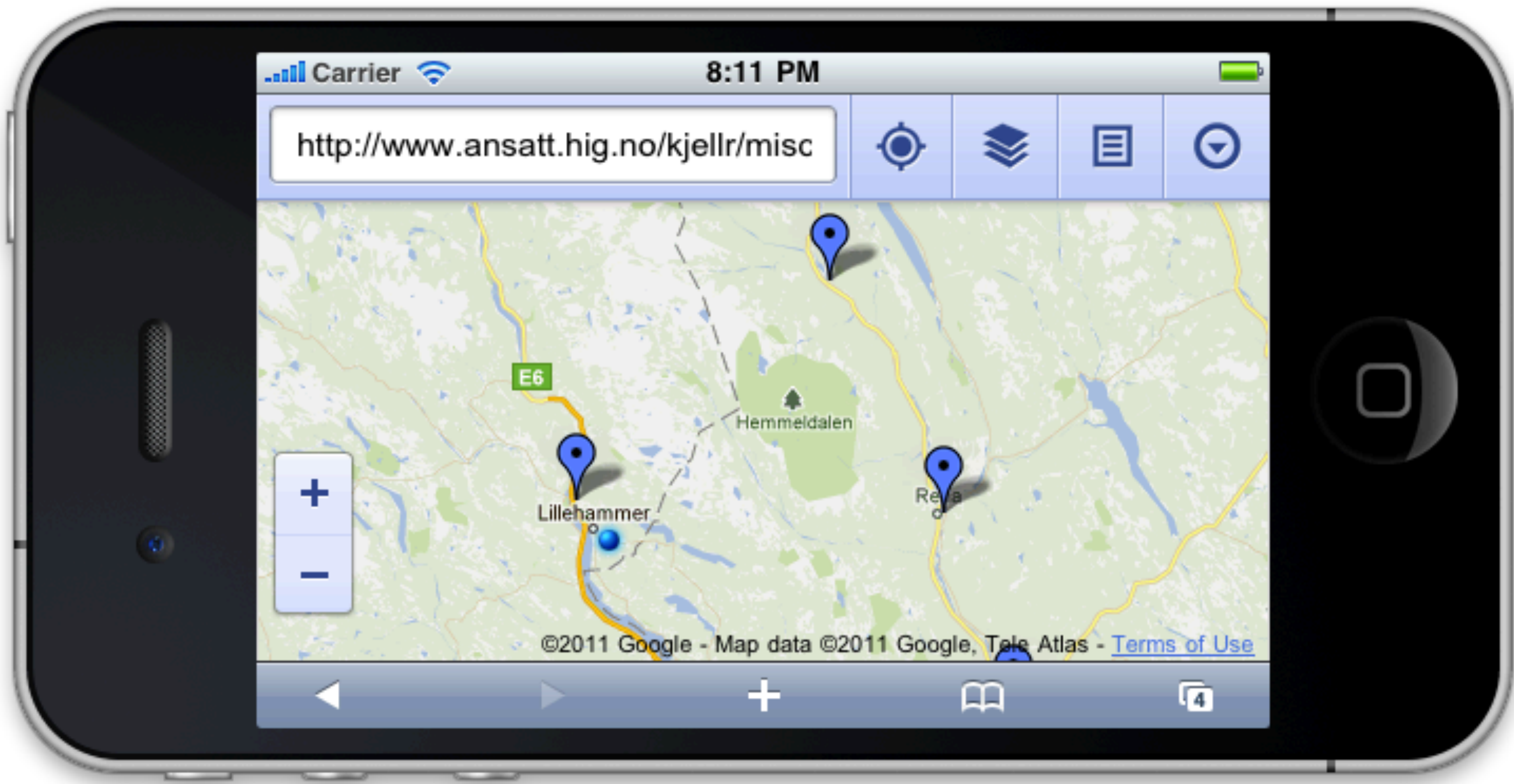
- Høgskolen i Gjøvik
www.hig.no
- Høgskolen i Lillehammer
www.hig.no
- Høgskolen i Hedmark, Elverum
http://www.hihm.no/Hovedsiden/Campus-Elverum
- Høgskolen i Hedmark, Rena
http://www.hihm.no/Hovedsiden/Campus-Rena
- Høgskolen i Hedmark, Evenstad
http://www.hihm.no/Hovedsiden/Campus-Evenstad
- Høgskolen i Hedmark, Hamar
http://www.hihm.no/Hovedsiden/Campus-Hamar

Høgskolen i Hedmark, Evenstad
<http://www.hihm.no/Hovedsiden/Campus-Evenstad>
 Directions Search nearby Save to map more

Satellite Traffic

20 mi
20 km

©2011 Google - Map data ©2011 Google, Tele Atlas - Terms of Use Report a problem



KML EXAMPLES

- <http://maps.google.com/maps?q=http://www.ansatt.hig.no/kjellr/misc/innlandsuniv.kml>
- <http://maps.google.com/maps?q=http://www.ansatt.hig.no/kjellr/misc/gjovik.kml>
- <http://www.ansatt.hig.no/kjellr/misc/gjovik.png>
- http://www.ansatt.hig.no/kjellr/misc/hig_lillehammer.kml
- http://www.ansatt.hig.no/kjellr/misc/20100417_tour.kml
- http://maps.google.com/maps?q=http://www.ansatt.hig.no/kjellr/projects/pilgrim/20100724_final_track.kml

KML PROJECTS

- http://www.ansatt.hig.no/kjellr/imt4951/projects/20091202_imt4951_askedal/report.pdf
- http://www.ansatt.hig.no/kjellr/imt4951/projects/20091202_imt4951_bjerkelund/report.pdf
- http://www.ansatt.hig.no/kjellr/imt4951/projects/20091202_imt4951_bjerkestrand/report.pdf

POSSIBLE PROJECT

- Script that takes a folder of images and creates a KML-file based on the geo-data inside the image files

- ```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://www.opengis.net/kml/2.2">
<Document>
 <name>Innlandsuniversitetet</name>

 <Placemark>
 <name>Høgskolen i Gjøvik</name>
 <description>
 <![CDATA[www.hig.no]]>
 </description>
 <Point>
 <coordinates>10.68334410841293,60.79009723298694,0</coordinates>
 </Point>
 </Placemark>

</Document>
</kml>
```



## RESOURCES

- [http://en.wikipedia.org/wiki/Web\\_1.0](http://en.wikipedia.org/wiki/Web_1.0)
- [http://en.wikipedia.org/wiki/Web\\_2.0](http://en.wikipedia.org/wiki/Web_2.0)
- [http://en.wikipedia.org/wiki/Mashup\\_\(web\\_application\\_hybrid\)](http://en.wikipedia.org/wiki/Mashup_(web_application_hybrid))
- <http://en.wikipedia.org/wiki/Kml>







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