



Summer Term 2011

Softwareentwicklung in der Geoinformatik Praxis

Assignment 2

Basic Functionality – Object-oriented Programming

Bernd Resch

06 April 2011



HOME STUDY !!!

- <http://www.tutorialspoint.com/java/index.htm>
 - ◆ Java Basics

Java ::: Assignment 2 Geotools

- Create a class “CoordinatesTransformer”, which transforms the WGS84 position *47.788901 N, 13.060209 E* to UTM33N
 - ◆ Use GeoTools 2.7.0 (<http://www.geotools.org>)
→ geotools-2.7.0-bin.zip
 - ◆ GT2 contains several jar archives, which you will have to include into your project

Java ::: Assignment 2 Geotools

- Hints:
 - ◆ EPSG properties file (containing WKTs)
http://svn.osgeo.org/geotools/tags/AFTER_JTS1.6/plugin/epsg/src/org/geotools/referencing/crs/epsg.properties
 - ◆ WGS84 = EPSG:4326
UTM33N = EPSG:32633
 - ◆ The use of WKTs (Well-known Texts) for CRSs is recommended

Java ::: Assignment 2 Geotools

- Step 1: find a possible solution/approach
 - ◆ Create a position object
 - ◆ Create a source and a target CRS object
 - ◆ Transform the position

Java ::: Assignment 2 Geotools

- Step 2: ask an Internet search engine (ready-to-use code?)
- Step 3: download GeoTools 2.7.0
 - ◆ Integration into project's build path in Eclipse:
Project → Properties → Java Build Path → Add JARs
- [Step 4: find the appropriate classes/jars (extraction)]
- Step 5: download epsg_properties.txt
- Step 6: coding... → Javadocs!

Java ::: Assignment 2 Geotools

- Possible solution:
 - ◆ Create a position object (class *DirectPosition2D*)
 - ◆ Create the source and target WKTs (String variables)
 - ◆ Create the according CRS objects using these WKTs (class *CoordinateReferenceSystem*)
 - ◆ Create a *MathTransform* object (method *CRS.findMathTransform(sourceCRS, targetCRS)*);
 - ◆ Transform the position (method *math.transform()*);

Java ::: Assignment 2

- Put all the java files in a package named “assignment2_<name1>_<name2>”
- Submission by email:
 - ◆ Java code files
 - ◆ Including inline documentation of key parts
 - ◆ Short description of approach (directly in the email)
- Due 10 May 2011



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