

Lecture / Exercises

Multimedia and Web Cartography

Short Description

- Get knowledge about multimedia and Internet-based cartographic information and representation systems
- Creation of an own interactive web map application from GIS data

Prerequisites

Successful participation in the courses "Kartografie Grundzüge" as well as "Digitale Kartografie" (knowledge about cartographic design, basics in programming ...)

Organization

The lectures are held in room HIL G22. The exercises will be accomplished in room HIL G21 in groups of two persons. The course material can be found online: <https://moodle-app1.let.ethz.ch/lms/course/view.php?id=36>
Please check this Moodle page regularly for updates.

Tutors

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Participants

Master students of Geomatics (ETH) and Geography (UZH, Uni Bern)

Location

ETH Zurich, Campus Hönggerberg, HIL G22 / G21

Time

Tuesday, 8:00 – 8:45 (lectures)
Tuesday, 9:00 – 10:45 (exercises)

Start

21st February 2012, 8:00, HIL G22

Program Overview

February 21	Introduction to Multimedia Cartography and Web Project Planning
February 28	Data Storage, Structuring and Representation
March 06	Interactivity
March 13	Use of Scalable Vector Graphics in Multimedia Cartography
March 20	Layout und Graphical User Interfaces
March 27	Navigation
April 03	Animation
April 10	Easter holidays
April 17	Distributed Web Cartography and Web Services
April 24	Adaptation of Web Services
May 01	Labour Day
May 08	Serverside Techniques
May 15	Recapitulation, Overview of Different Techniques
May 22	Copyright for Web Maps
May 29	Presentations, Hints for the Exam, Discussion

Exercises

The results of the exercises, in particular the produced prototype, the presentation and the technical report are going to be evaluated. Participants will receive a grade for the exercise part of the course that contributes 50% to the final course grade (10 points).

Following requirements need to be fulfilled:

- Creation of a prototype (in the exercises)
 - Content: prototype (will be specified in Moodle)
 - Delivery: as ZIP upload in Moodle
 - Date: **May 22nd, 2012, 16:00**
 - The prototype has to fulfil the basic requirements listed in this document
 - The prototype contributes **30%** to the final grade (6 points)
- Short presentation of the prototype
 - Content: a specific topic from the course program will be assigned to each group. In the presentation the topic should be explained using the own prototype as a concrete example
 - Delivery: 10 minutes demonstration of the prototype. Slides can be prepared, but are not strictly required.
 - Date: in the last course event; on **May 29th, 2012**.
 - The presentation contributes **10%** to the final grade (2 points)
- Delivery of the report
 - Content: report (will be specified in Moodle)
 - Language: English or German
 - Delivery: as PDF upload in Moodle, minimum 6 A4 pages (incl. title page and images)
 - Date: **May 15th, 2012, 23:59**
 - The report has to fulfil the basic requirements listed in this document
 - The report contributes **10%** to the final grade (2 points)

Important: The delivery of the prototype, the technical report and the oral presentation are mandatory in order to participate to the exam!

Exam

Type: oral

Duration: approx. 15 minutes per participant.

Date: For students enrolled in mystudies, the date will be defined through the ETH Examinations Office during the usual exam session of ETHZ and cannot be changed by the tutors of this course. For students without an n.ethz account, the tutors can determine a separate date, depending on their available dates.

After passing the exam, each participant receives a grade for the oral exam that counts **50%**(10 points) to the final grade (20 points in total).

Grade / Credit Points

The final grade of the course is calculated based on the points from the exercises and the points of the oral exam. Both grades count 50%. If the final grade of the course is sufficient (at least 12 points), the participant receives 5 credit points. ETH students as well as students enrolled as guests get their credit points and grades electronically. For students of the University of Zurich, the grade is sent to the appropriate bureau of the university.

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Prototype

Requirements

The following requirements have to be fulfilled:

- The base map consists of at least two layers.
- A raster image is embedded (whether as WMS or local) in the base map.
- A theme is visualized with choropleths.
- The classes of the choropleth layer are explained in the legend.
- The choropleth layer can be switched at least between 3 different times (whether animated or via interaction).
- A theme is visualized with diagrams (whether per scripting or WMS).
- The colors and/or size of the diagrams are explained in the legend.
- At least 1 layer can be switched on and off.
- Zoom and pan is working.
- The name of a country is shown during mouseover.
- The current country is highlighted during mouseover.
- At least 1 WMS layer styled with SLD is embedded in the map.
- An imprint (author, date, course) is included.
- The map's sources are named.
- The layout and basic functionalities (zoom, pan, layer switch, display of all map and legend layers, selectionlist) are working in the major browsers Firefox, Opera, Internet Explorer.
- The overall layout follows basic cartographic rules.
- The folder structure is reasonable, the folder and file names are meaningful.
- The code is cleaned and clearly structured.
- The prototype was completely submitted as ZIP file on time.

Additionally, optional enhancements can be made to increase the usability of the prototype. For example, one could show more information about a country during mouseover, highlight legend icons or texts and integrate further modification options such as color pickers or transparency sliders. Also, the GUI can be modular structured with movable windows, tabs etc.. One can even add more functionalities such as print, save as, search options, meaningful animations, a logo, photos or additional information. Furthermore, the layout of the prototype (basemap, thematic layers, GUI and legend) could be improved. No limits are set to the participants creativity.

Report

Requirements

The following requirements have to be fulfilled:

- The map theme (idea) is explained.
- The used data for the base map and the thematic layers are completely listed.
- The layer order is described.
- A sketch of the proposed GUI layout is included.
- The proposed visualization (colors, stroke-width, fonts, etc.) of the base map is completely specified.
- The proposed visualization (diagram types, colors, stroke-width, fonts, etc.) of the thematic layers is completely specified and justified.
- The proposed GUI layout (colors, map elements and their position, font-type, font-size) is described.
- The interaction in the application is described.
- The implementation (short protocol of the exercises) is explained.
- The prototype is evaluated (problems / future improvements).
- The course in short is evaluated.
- The report has in minimum 6 A4 pages (incl. title page).
- The title page exists and contains the title of the lecture, the date, the names of the group members.
- The report is written in full sentences.
- The explanations are correct, understandable and illustrated.
- The report is clearly structured.
- The language corresponds to the "Technical Report" style. The grammar is correct.
- The overall layout allows easy readability.
- The report was completely submitted as PDF on time.