Advanced Multimedia Applications

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Outline

- Introduction & Practical Information

- Projects
    - Big Data – Interactive Analytics in the Cloud
    - Linked Data – Visual Editor
    - Video Data – Be Your own Panoramic Cameraman
    - Academic Data – Automatic Course Assembly

- Assignments

Introduction &
Practical Information

Introduction

- This is a PROJECT oriented course

- With a focus on "team" work

- Development of a real-world "commercial" app/tool/widget

- Each group is seen as a project team with a project leader which ensures communication with the customer

- All communication (written & verbal) is done in English

- The exam (presentation, cf. infra) is done in English
  (but can be done in Dutch too)

Practical Information

- Announcements
  - Minerva

- Location
  - Projects: Technicum – room Gobelijn (if needed)
  - Meetings: Technicum – room Shannon
  - Final Presentation: Technicum – room Shannon

- Contacts
  - Main: Erik Mannens (erik.mannens@ugent.be) (ground floor to the right, 4th room to the right)
  - Alternates: piet.verhoeve@iminds.be & wesley.deneve@ugent.be
  - Put [AMMA] in the subject line

Practical Information

- Meeting dates and times
  - Th 18/02 - 13u00 – 15u00 (Introductory Session) (Shannon @ Technicum)
  - Th 25/02 - 13u00 – 15u00 (Shannon @ Technicum)
  - Th 10/03 - 13u00 – 15u00 (Shannon @ Technicum)
  - Th 17/03 - 13u00 – 15u00 (Shannon @ Technicum)
  - Fr 29/04 - 13u00 – 15u00 (Shannon @ Technicum)
  - Fr 20/05 - 13u00 – 16u00 (Final Presentation) (Shannon @ Technicum)

- Progress Reports
  - Deadline is 1 day before every meeting (9am)
  - Project leaders should mail progress reports to
    - erik.mannens@ugent.be
    - wesley.deneve@ugent.be
    - piet.verhoeve@iminds.be

Groups and Meeting Times

- Questions
  - Who has experience with a Open (Big) Data, Video Analysis, HTML5?
  - Who can not be present at certain days?

- Schedule

group 1 : x	
group 2 : x + 20 min	
group 3 : x + 40 min	
group 4 : x + 60 min	

Groups and Meeting Times

- Group members can NOT be changed

- Projects can be interchanged between groups until Wednesday 24/02

  Inform us about any changes made!

Formal Contact with Firm & Final Presentation

- Formal Contact with "Firm"
  - At least 3 physical meetings (begin, mid, end)
  - All communication (e.g., meeting requests) via mail
  - All mails with erik.mannens@ugent in 'cc'

- Final Presentation
  - Presentation (ppt)
  - Final progress report
  - Movie (highlighting project & all features)
  - All code & documentation on CD/DVD/USB
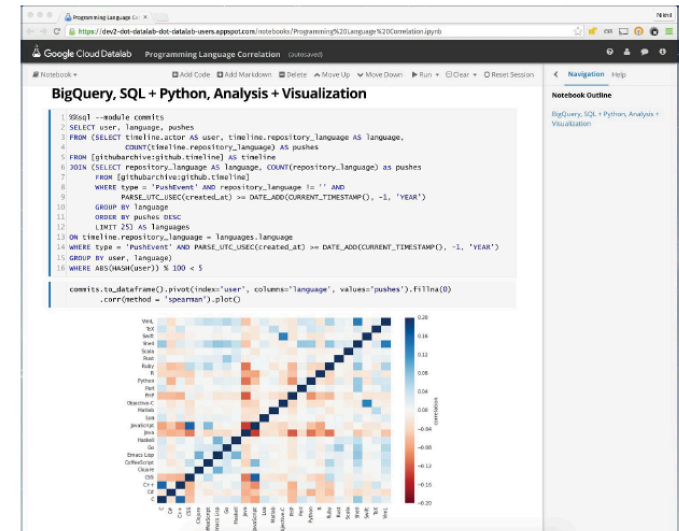 - All members have to (be) present

Project 1

Big Data

Interactive Analytics in the Cloud

Project 1: Interactive Analytics

- Implement generic Multiple View on Notebooks

  - Integrate Google's Cloud Datalab into A3S' framework
  - Experiment with views on Notebooks
  - Library to interact with views
  - Ease of use, extendable , real-time

Project 1: Interactive Analytics

- Assignments
  - Make a basic integration architecture
    - Functional blocks (FE libs / BE engine)
    - Use of Node.js, Python, Docker
  - Discuss APIs between modules (a.o. A3S & Google's CP)
  - Make a project planning
    - Who will do what/when?
    - What will be the milestones?
    - What will be the deliverable?
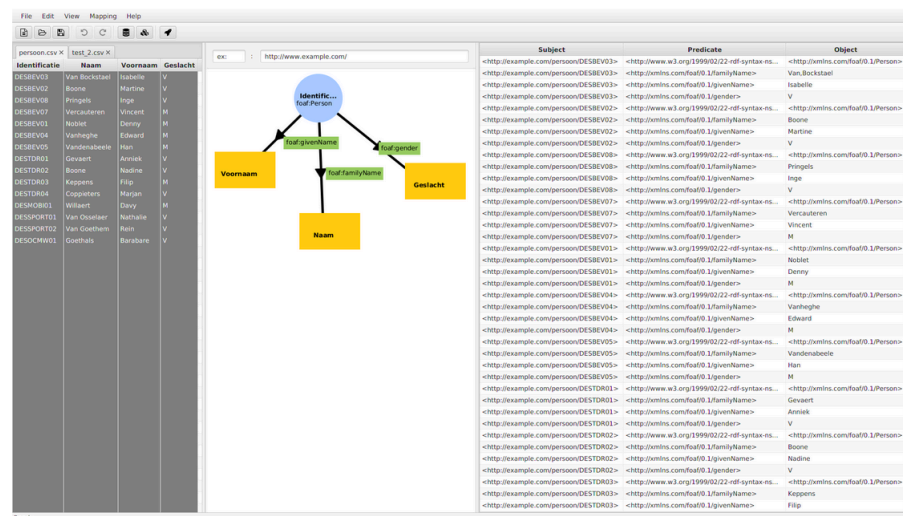 - "Client" : matthias.feys@datatonic.com & dieter.dewitte@ugent.be

Project 2

Linked Data

Visual Editor

Project 2: Visual Editor

- Implement an interactive UI on top of RML Editor

  - Interactive User Interface

  - Module to manage Mapping Rules

  - Module to manage Metadata (a.o. provenance data)

  - Ease of use, scalable, real-time

  - Co-think outside-the-box

Project 2: Visual Editor

- Assignments
  - Make a basic architecture
    - Functional blocks (FE/BE)
    - Use of current RML processor and editor
  - Discuss REST APIs between modules
  - Discuss configurable functionality for all requirements
  - Make a project planning
    - Who will do what/when?
    - What will be the milestones?
    - What will be the deliverable?
  - "Client" : anastasia.dimou@ugent.be & pieter.heyvaert@ugent.be

Project 3

Video Data

Panoramic Cameraman

Project 3: Panoramic Cameraman

- Platform for user interaction with panoramic video
  - Simulation platform
  - GUI
  - Virtual pan-tilt-zoom camera
  - Sender/Receiver paradigm
  - Robust & easily extensible
  - Auto-tracking

Project 3: Panoramic Cameraman

- Assignments
  - Make a basic architecture
    - Functional blocks (FE libs / BE engine)
    - Open Source, HTML5 & JavaScript (GUI)
    - Input methods (browser, tablet, oculus rift, …)
  - Discuss APIs between modules
  - Make a project planning
    - Who will do what/when?
    - What will be the milestones?
    - What will be the deliverable?
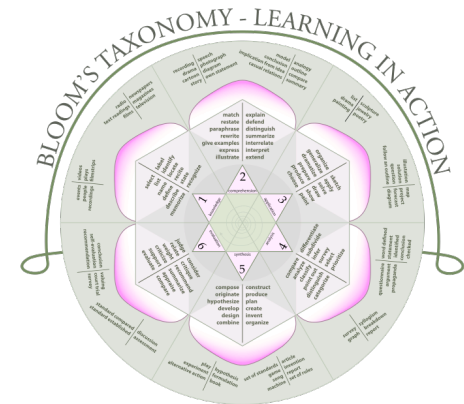 - "Client" : johan.depraeter@ugent.be

Project 4

Academic Data

Automatic Course Assembly

Project 4: Automatic Course Assembly

- Barrier to import legacy data into e-learning platform

    - Parse the input source

    - Detect modules (based on headings)

    - Tag modules & activities via NER

    - Estimate Bloom level

Project 4: Automatic Course Assembly

- Assignments
  - Make a basic architecture
    - Functional blocks (FE libs / BE engine) in Java
  - Discuss APIs between modules
  - Information extraction via NER
  - Enrich
    - Wikipedia/DBPedia in the Linked Open Data cloud
  - Make a project planning
    - Who will do what/when?
    - What will be the milestones?
    - What will be the deliverable?
  - "Client" : davy.vandeursen@gmail.com & tom.denies@ugent.be

Project Members

- Project 1: Big Data – Interactive Analytics
  - a,b,c,d

- Project 2: Linked Data – Visual Editor
  - a,b,c? + Anastasia

- Project 3: Video Data – Panoramic Cameraman
  - a,b,c,d

- Project 4: Academic Data – Course Assembly
  - a,b,c,d