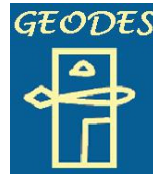


# Ongoing Projects

GEODES Group

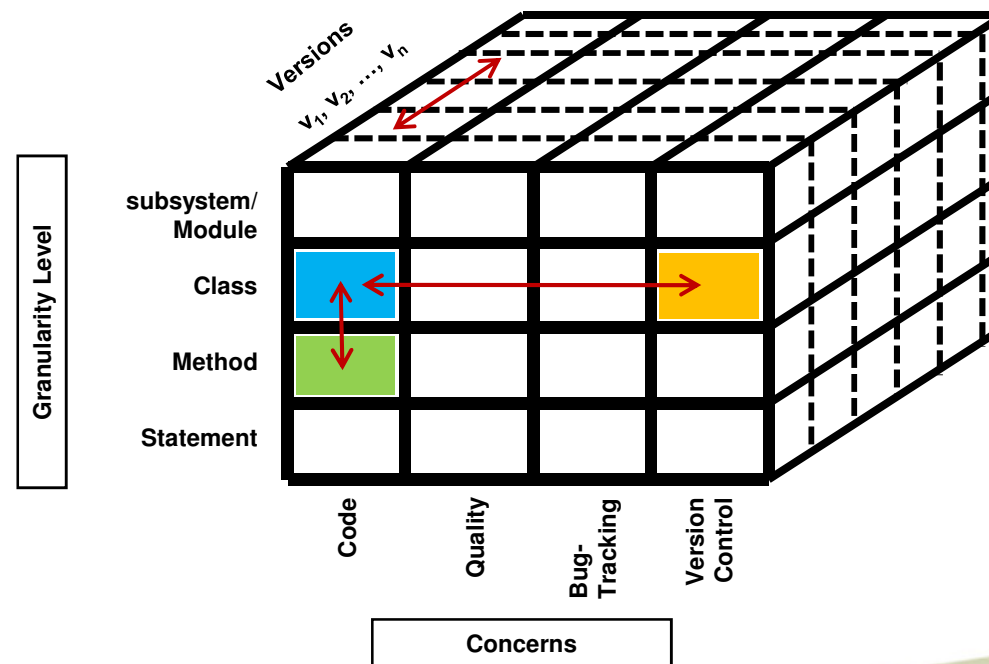


# Research Topics

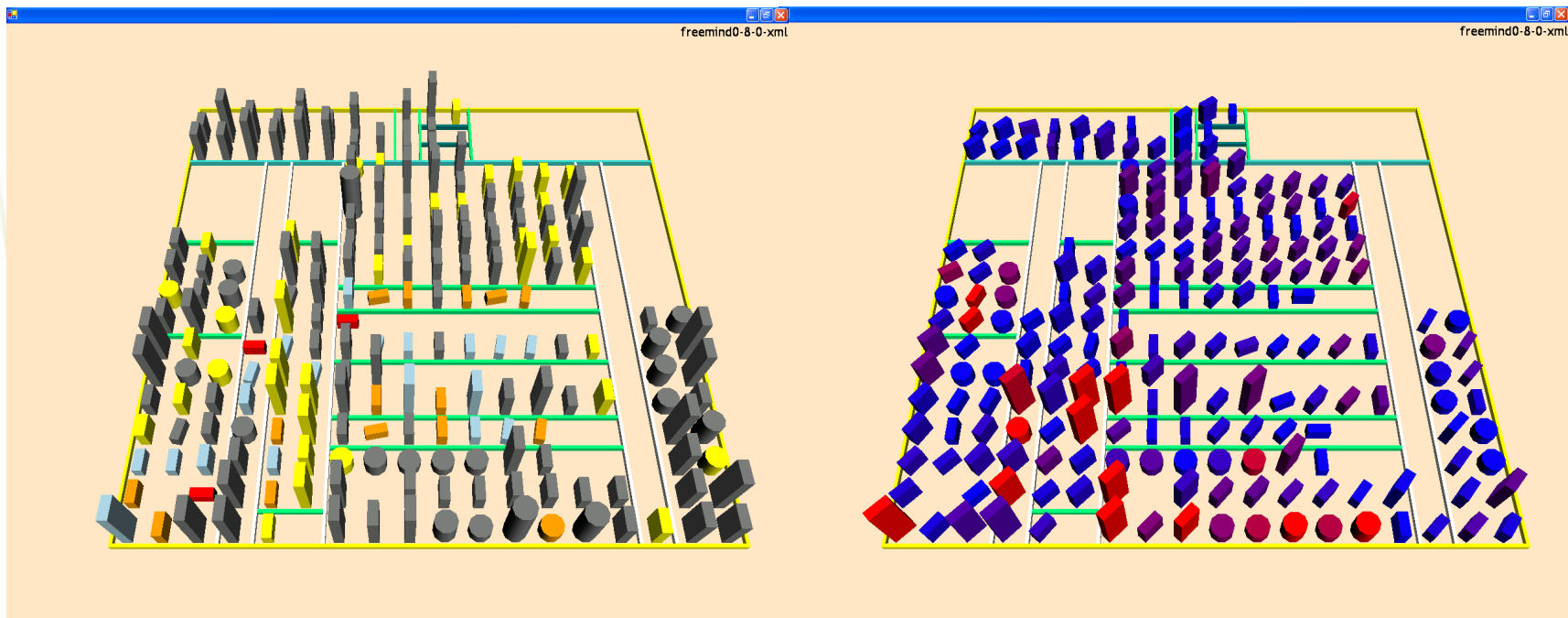
- Visualization
- Quality Modeling
- Model Transformation
  - Including reverse engineering

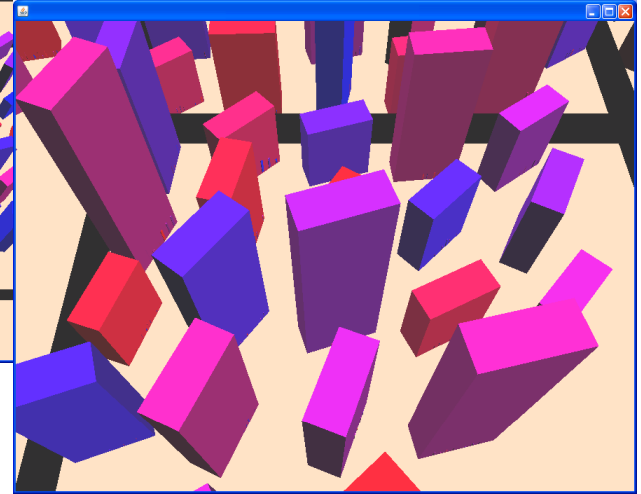
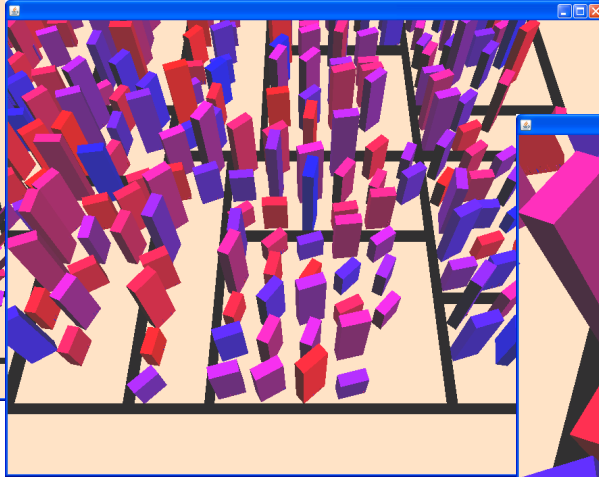
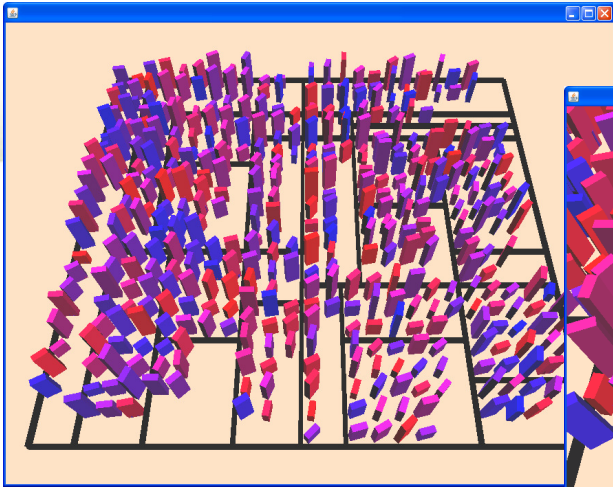
# Visualization

- Software development using interactive visualization



# Visualization

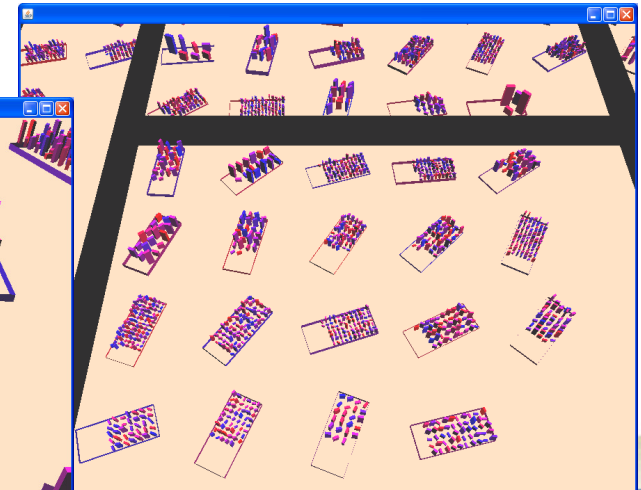
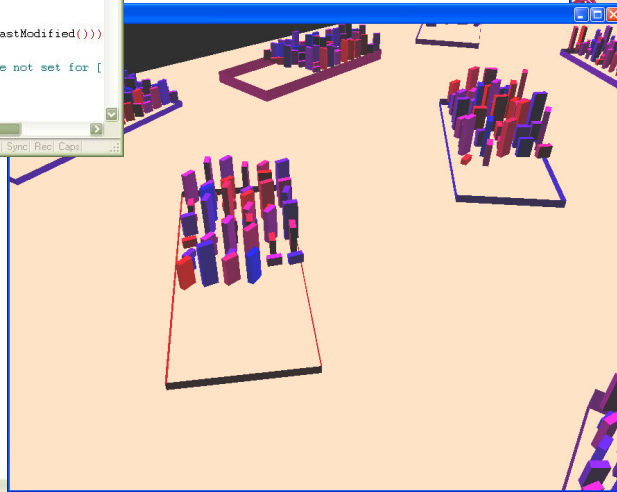




```
TextPad - [C:\Documents and Settings\ahroun\My Documents\WERSOWERSO_with_source_code_display\log4j-...
File Edit Search View Tools Macros Configure Window Help
DailyRollingFileAppender

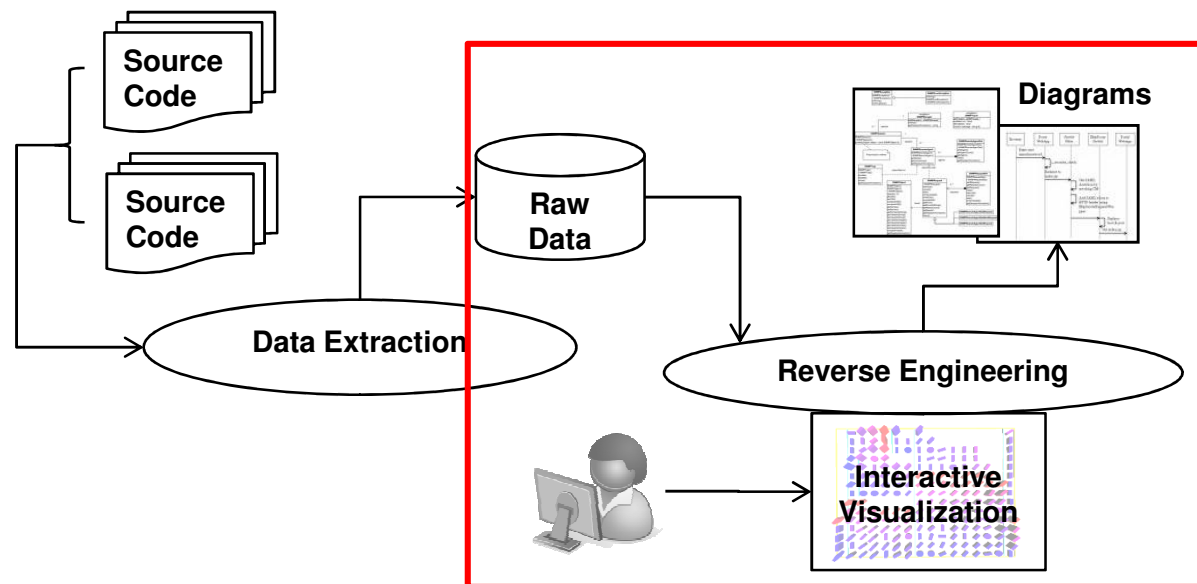
public
String getDatePattern() {
    return datePattern;
}

public
void activateOptions() {
    super.activateOptions();
    if(datePattern != null && fileName != null) {
        now.setTime(System.currentTimeMillis());
        sdf = new SimpleDateFormat(datePattern);
        int type = computeCheckPeriod();
        printPeriodicity(type);
        rc.setType(type);
        File file = new File(fileName);
        scheduledFilename = fileName+sdf.format(new Date(file.lastModified()));
    } else {
        LogLog.error("Either filename or DatePattern options are not set for [
        name+"];");
    }
}
```

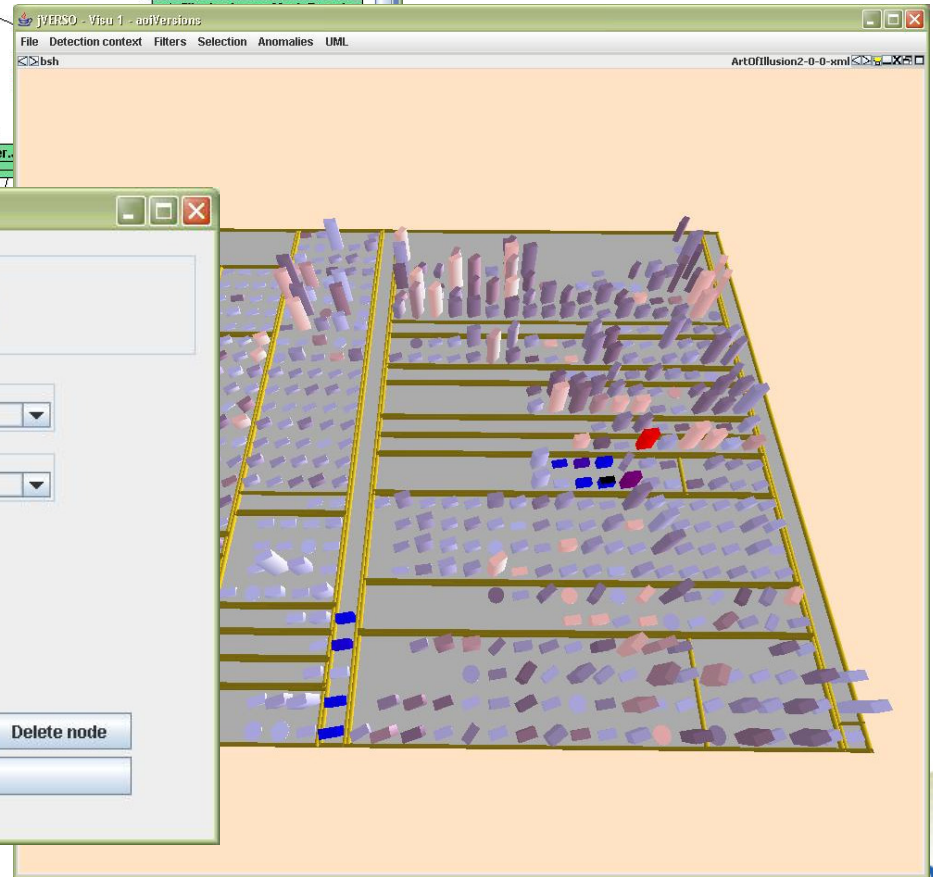
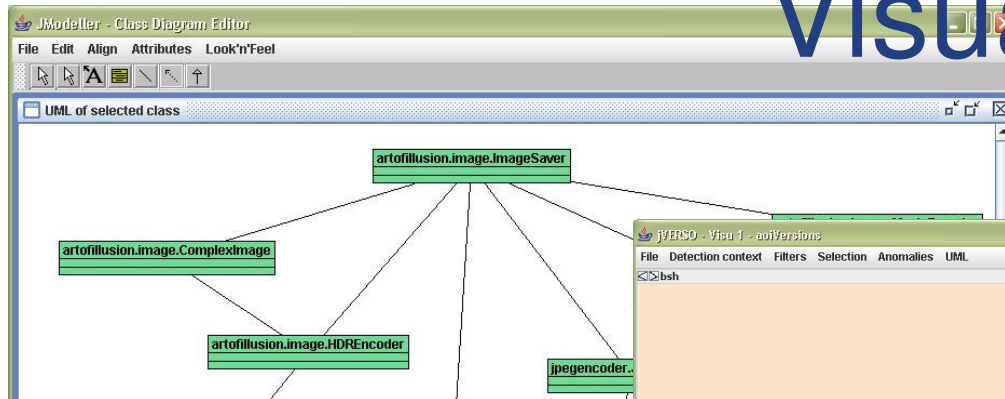


# Visualization

- UML diagram extraction using interactive visualization



# Visualization



**Saved filters**

Filter name:

Load Save Delete

- OR
  - I/O(artofillusion.image.MovieEncoder)
  - OR
    - I/O(artofillusion.image.BMPEncoder)
    - OR
      - I/O(artofillusion.image.HDREncoder)
      - OR
        - I/O(jpegencoder.JpegEncoder)
        - Minus
          - Selection (1)
          - Text (encoder)

Category:

Filter:

Add node Modify node Delete node

Apply filter

# Visualization

- Other projects
  - Visualization of Web applications
  - Visualization of component-based software
  - Software understanding using interactive visualization

# Quality Modeling

- Multi-perspective quality modeling
  - Time perspective

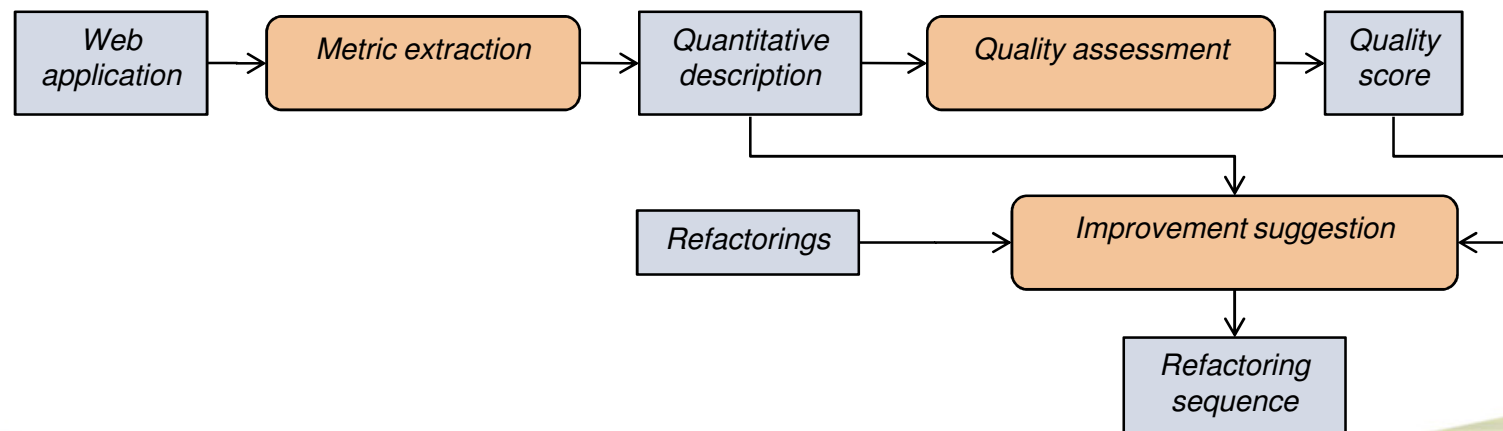
$$Q_n = Q_i + \sum_j \Delta Q(chg_j)$$

- Composition perspective

$$Q(class) = f(Q(methods), prop(class))$$

# Quality Modeling

- Quality evaluation of Web applications
  - Quality assessment using a probabilistic model
  - Refactoring using a search-based method



# Quality Modeling

- Other projects
  - Change impact prediction
  - Managing uncertainty when applying quality heuristics

# Model Transformation

- Transformations by example as optimization problems
  - Model to model
  - Code to model (reverse engineering)
  - Code to code (refactoring)
- Component identification in OO code
  - Use cases and execution traces
  - Clustering and search-based methods