# nodegoat: a web-based data management, network analysis & visualisation environment

*Pim van Bree*
LAB1100
pim@lab1100.com

*Geert Kessels*
LAB1100
geert@LAB1100.com

nodegoat (http://nodegoat.net/) is a web-based research environment that facilitates an object-oriented form of data management with an integrated support for diachronic and spatial modes of analysis. This research environment has been developed to allow scholars to design custom relational database models. nodegoat dynamically combines functionalities of a database management system (e.g. Access/FileMaker) with visualisation possibilities (e.g. Gephi) and extends these functionalities (e.g. in-text referencing, LOD-module) in one web-based GUI. As a result, nodegoat offers researchers an environment that seamlessly combines data management functionalities with the ability analyse and visualise data. The explorative nature of nodegoat allows researchers to trailblaze through data; instead of working with static 'pushes' – or exports – of data, data is dynamically 'pulled' within its context each time a query is fired. The environment can be used in self-defined collaborative configurations with varying clearance levels for different groups of users.

As a result of nodegoat's object-oriented set-up, *everything* is an object. In the case of a research project on correspondence networks, this means that a researcher would define three types of objects in nodegoat: 'letter', 'person', 'city'. Each object relates to an other object via relations (e.g. a letter relates to persons to identify the sender/receiver and this letters has been sent from/received in a city). In an extended research process, researchers could also define themselves as objects in the dataset, their sources or other datasets. Due to the focus on relations and associations between heterogeneous types of objects, the platform is equipped to perform analyses spanning multitudes of objects. By enriching objects with chronological and geospatial attributed associations, the establishment and the evolution of networks of objects is fully contextualised. In nodegoat, these contexts and sets of networked data can be instantly visualised through space and time. nodegoat is built to be fully platform independent. It is possible to import complex and relational datasets from file and to export relational datasets.

The nodegoat demonstration at the market place will introduce conference delegates to nodegoat and highlight new functionalities:

- Linked data module,

- configuration of new visualisation modes,

- implementation of conditions to highlight (groups) of objects,

- multi-edit and merge functionalities,

- public user interfaces.

During the demonstration we're also happy to discuss the technological developments behind the visualisations, and how nodegoat can be used as a museum installation .

nodegoat is developed by LAB1100 since 2011 and is currently in use at the University of Amsterdam, Ghent University, Maastricht University, NIOD, Huygens-ING, Leiden University, GRIMMWELT Kassel, National Archives of the Republic of Indonesia, University of Luxembourg, National movements & Intermediary Structures in Europe, and Utrecht University as well as by numerous individual scholars.