Reference: QSE:CIS Farm

Topic: Investigating Architectural Evolution of a Farm Architecture for Collective Intelligence Systems

LVA-Type: Bachelor's / Master's Thesis, (MSc) Project in SE and Internet Comp.

Start: As soon as possible

End: By arrangement

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Background

The strength of Collective Intelligence Systems (CIS), e.g. Facebook, YouTube, Wikis, is to aggregate and distribute information and content among their user base. Upgrading a CIS to a farm architecture is an effective approach to significantly extend its capabilities by: (1) hosting of multiple instances on a single, shared platform, (2) effortless creation and operation for instance owners, and (3) collective intelligence aggregation across all instances. Examples of farm platforms are Wikia [1] for wikis and StackExchange [2] for question-answer portals.
Fig. 1 illustrates a farm architecture, comprising the farm area, where glossary instances are running and a management area, where administrators can configure the glossaries and data scientists can access analytics and data export interfaces.
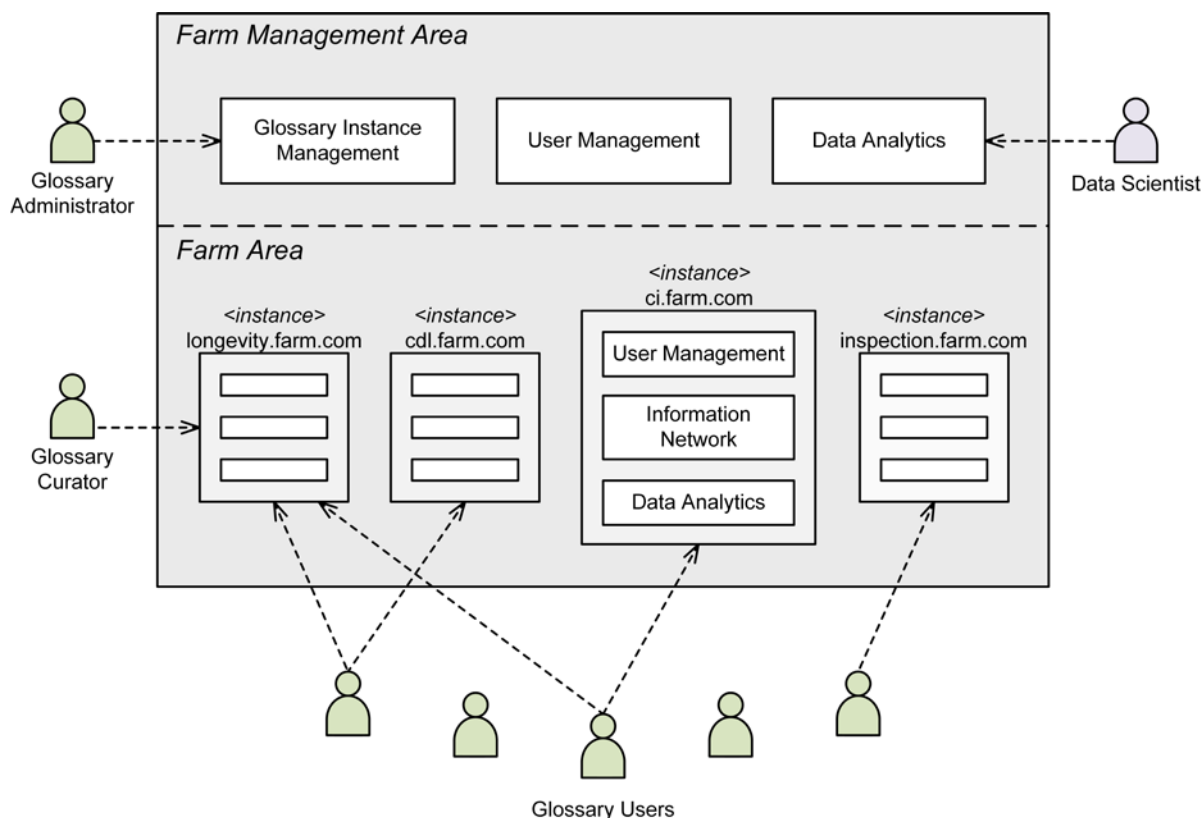

Fig. 1: Simplified overview of glossary farm architecture.

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Tasks

– Goal is the exploration, design, technical planning and development to evolve the glossary prototype towards a farm architecture.
– Basic parts include:
  o Exploration and modeling of concept solution candidates.
  o Design and documentation of solution architecture.
  o Implementation of platform prototype using Ruby on Rails and additional frameworks.
  o Testing and quality assurance of the created solution for collective intelligence effectiveness, also with respect to the current glossary application.

Experience and skills needed

- Ruby on Rails.
- Basic experiences in data modeling and databases (e.g. mySQL, postgreSQL).
- Basic experiences in software architecture and documentation methods (e.g., UML, BPMN).
- Experience / interest in Social Web, Crowdsourcing, Collective Intelligence and Social Networks.
- Good written and spoken English skills.
- Experience with Heroku and Git (optional).

Links

[1]   Wikia. http://www.wikia.com/Wikia (last visited 01.03.2017).

[2]   StackExchange. https://stackexchange.com (last visited 01.03.2017).