Knowledge Graph Engineering
National University of Mongolia
Projects 2024

Knowdive Research Group

March 5, 2024

Table of Contents

iTelos Active Roles

> The efficiency of an iTelos project is based on the **effort** and the **cooperation** among the different actors who play on it.

The roles covered by those actors are four:

- **Project Manage**r (PM): in charge of coordinating the whole projects, as well as the cooperation among the other roles.
- **Domain Expert** (DE): most of the time represented by the final user, she is the expert regarding the domain of interest (context in which the final K will be exploited).
- **Knowledge Engineer** (KE): responsible for the management of knowledge resources (KG's knowledge layer building).
- **Data Scientist** (DS): responsible for the management of data resources (KG's data layer building).

iTelos Active Roles

- PM, DE, DS and KE form a iTelos project's *Team*.

- DS and KE are the most important roles along the process, and due to that, **they must be covered by, at least, two different people**.

- This means that the Team have to be composed by at least two actors, that in the worst case will cover all the four roles.

iTelos Project Planning

Role	Task	Purpose Definiton	Information Gathering		Language Definition		Knowledge Definiton		Data Definition	Publication and Presentation	
		Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Project Manager	Coordination										
	Project report (general management)										
	Open project phase - set up										
	Project publicaiton phase										
	Project presentation										
Domain Expert	Purpose Definoin phase										
	Information Gathering (IG) phase										
	Project report (IG)										
	KG final evaluation										
	Project report (final)										
	Project Demo										
Knowledge Engineer	Kowledge metadata definiton										
	Purpose Definiton phase										
	Information Gathering phase										
	Project report (IG)										
	Language Definiton (LD) phase										
	Project report (LD)										
	Knowledge Definiotn (KD) phase										
	Project report (KD)										
	Data Definiotn (DD) phase										
	Project report (DD)										
Data Scientist	Data metadata definiton										
	Purpose Definiton phase										
	Information Gathering (IG) phase										
	Project report (IG)										
	Lanaguage Definiton (LD) phase										
	Project report (LD)										
	Knowledge Definiton (KD) phase										
	Project report (KD)										
	Data Definiton (DD) phase										
	Project report (DD)										

iTelos Project set-up

- Each iTelos project needs a specific **repository**, where the resources (Language, Knowledge, Data and Metadata) are maintained during the process execution.
    - such a repository can be cloned by a github template repository.

- **Documentation** is a crucial part during the execution of the iTelos process.

- A **project report** has to be completed at the end of the process execution.
    - At the end of each phase, a report template document has to be filled, by reporting the execution of the current phase activities.

- At the end of the project, a **set of slides summarizing the work done** needs to be produced and stored in the repository together with the project report, into the dedicated "Documentation" directory.

Table of Contents

1 - Geo data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about geographical entities (mountains, rivers, lakes, . . .) around UB city, or relevant to your interests. Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

2 - Transportation Facilities data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about geographical entities for transportation (railways stations, bus stations, stops, . . .) around UB city, or relevant to your interests. Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

Knowdive
Research Group

UNIVERSITY
OF TRENTO
Department of Information
Engineering and Computer Science

DataScientia
Unitas per Varietatem

Knowledge Graph Engineering, National University of Mongolia , Projects 2024   National University of Mongolia

3 - Education Facilities data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about geographical entities for education (universities, schools, libraries, . . .) around UB city, or relevant to your interests. Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

Knowdive Research Group

UNIVERSITY OF TRENTO
Department of Information Engineering and Computer Science

DataScientia
Unitas per Varietatem

Knowledge Graph Engineering, National University of Mongolia , Projects 2024   National University of Mongolia

4 - Health Facilities data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about geographical entities for healthcare (Hospital, pharmacies, . . .) around UB city, or relevant to your interests. Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

5 - Train network data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about transportation entities regarding the train network system in Mongolia (cross country, between different cities). The train network connections link different geographical entities that can be reused from other projects (see above). Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.

Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

6 - Bus network data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about transportation entities regarding the bus network system in UB city, and intercity. The bus network connections link different geographical entities that can be reused from other projects (see above). Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features

7 - Streets network data

- **Purpose**: Create an Entity Base containing high quality, interoperable and reusable data about different contexts, and domain of interests, for the Mongolian country and culture.

- **Objective**: Collect data about streets (connecting the most important facilities for the city or for your interests) in UB city (integration of non mapped streets on OSM). The street network connections link different geographical entities that can be reused from other projects (see above). Create the Language, Knowledge and KGs resources for those entities, with the objective of facilitating the reuse of those information.

Data sources: OSM and HOT.
Reference Knowledge: https://wiki.openstreetmap.org/wiki/Map_features