



UNIVERSITÄT PADERBORN

Die Universität der Informationsgesellschaft

Faculty for Computer Science, Electrical Engineering and Mathematics

Department of Computer Science

Research Group DICE

Project Plan

Submitted to the DICE Research Group

Knowledge Graph Summarisation

by

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Project Plan

Knowledge graphs (KG) are graphs/structures consisting of facts in the form of triples. Triples are a combination of subjects, objects and predicates. In general, knowledge graphs are huge in size and may contain redundant information. Knowledge Graphs' humongous size makes it difficult to process and represent them. The goal of this project group is to obtain a pruned KG. This consists of selecting a sub knowledge graph based on endpoints and summarizing those subgraphs by considering facts based on ranks.

1.1 Phases

The project will be carried out in three phases:

- Seminar Phase
- Development Phase
- Documentation Phase

1.1.1 Seminar Phase

The seminar phase consists of Training and Planning.

1. Training Phase: In the training phase, the project group will get themselves familiar with a basic understanding of Knowledge Graphs. The training phase is divided into six tasks:
 - Understanding the basic concepts of Semantic Web, RDF, OWL, etc
 - Getting familiarized with the LD2NL framework.
 - Getting familiarized with the BENGAL framework, mainly concentrating on the part to obtain Sub KG from a given KG.
 - Understanding of different graph summarization algorithms like the hare, hits, etc.
 - Getting Familiarized with the design of SPARQL queries.
 - Select different graph summarization algorithms for implementation.
2. Planning Phase: In this phase, the team sets milestones for carrying out the project and respective roles for the individual team members. Goals, Project plan and individual responsibilities of team members are finalized.

1.1.2 Development Phase

In this phase, teamwork towards the realization of set goals in the previous phase. This phase is distributed in to following four tasks:

- Implementation to obtain Sub KG from a given KG.
- Implementation of selected graph summarization algorithms on sub-KG to obtain final pruned KG.
- Implementation of UI.
- Development of download feature for users.

1.1.3 Documentation Phase

In this phase, the team will document all the activities carried throughout the project. The main goal of this phase to collaborate previously created documents and present them to the audience.

1.2 Organisation

Project Group: Knowledge Graph summarization

Supervisor: Diego Moussallem

PG lead: Shreyas Kottur Shivananda

PG team: Muhammad Haseeb Javaid, Pavan Kumar Sheshanarayana, Usman Ashraf, Ammar Mustafa

Weekly Meeting: Monday 9:00 AM

Weekly Update: Filling a google form.

Code repository: Git hub

Communication Channel: Slack

Task Management: Trello

1.3 Milestones

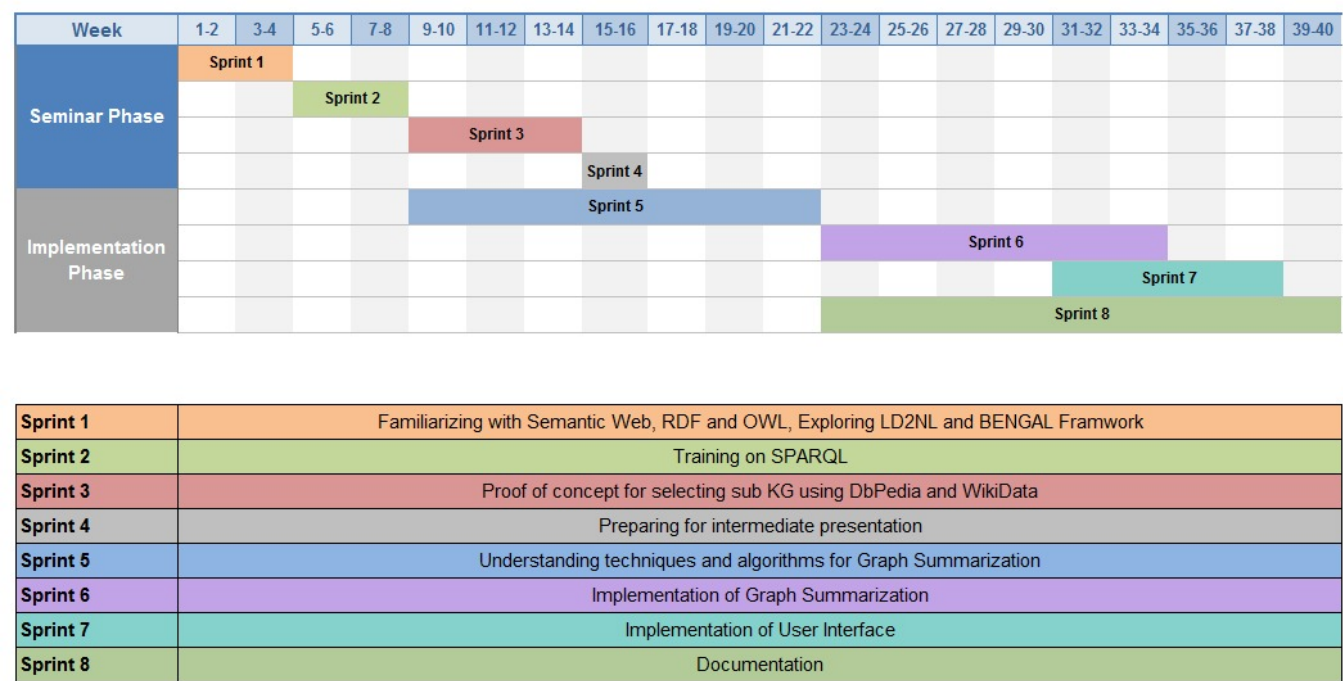


Figure 1.1: Milestones