ABSTRACT

The Conversational recommender system (CRS) is a knowledge-based recommendation system that uses ontology as its knowledge representation.The knowledge of a CRS is based on a real world knowledge base service where information on the topic such as product details and descriptions must always be up-to-date.However, the process of gathering the information is still conducted manually.The process is very time consuming and prone to error.Therefore, automatic or semi-automatic processes that can adapt to update, find and insert information into the knowledge base that matches a given ontology are needed.Hence, this study aims to design a framework for ontology population on Conversational Recommender Systems based on the Functional Requirements as in [4] from tabular web documents so its instantiation as ontology result can substitute manual ontology update on CRS. The framework includes a clustering process that employs the Bi-Layer K-Means Clustering Algorithm as a part of knowledge acquisition. To reach the objective, it is necessary to analyse and check the individual consistency of resulting ontology. Another aim of this study is to analyze the resulting ontology still suitable according to CRS ontology requirements by checking the CRS Ontology Requirements.The experiment is conducted using data from www.gsmarena.com through a crawler engine. There are four steps in an ontology population process: Document Crawling, Identification of the page (individuals, attributes and values), KnowledgeAcquisition, and OWL Ontology Export. Using input from the tabular web document and developing OWL ontology export that mapping the instances and relations, the result shows that the specifications included in the Weak Clustering, Reasonable Clustering and strong clustering categories can be recommended for the Conversational Recomender System ontology. Analysis of consistency checking shows that the ontology remains consistent and suitable for the CRS ontology requirement.

Keyword: Ontology, Ontology Population, Ontology Learning, Clustering, Bi-Layer K-Means