A Picture Is Worth A Thousand Words -- An Application of Knowledge Graph to Electronic Records Systems

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ABSTRACT

Most electronic records management systems provide search interfaces which allow visitors to search and view valuable digital assets such as historical images, audio and videos. These Google-like search interface provide a list of links to web pages containing relevant information. However, knowledge, associations, classifications and relevance among those linked pages are not organized and presented. In our research, we suggest a framework to alleviate this disadvantage. In this framework, all electronic records are associated with a set of metadata, featuring the notions of people, time, event, place, and material. We use these metadata to grab information from the internet and intranet resources. We then use semantic network inference engine to generate classification and association rules among these search results. The outputs are then presented as knowledge graphs with notions or web pages as nodes, and classification and association links as edges. The "knowledge graphs as search results" approach can not only provide visitors links to relevant web pages, but also provide them a graphical display specifying the features and relevances among those pages. In this poster presentation, we present the application of our framework to the electronic records systems of National Assembly (國民大會), which has a rich collection of historical pictures, speeches, and movies. We show that by using this new approach of search mechanism, visitors can not only view those pictures or listen to audios, but also can get graphical displays of a whole story.
Keywords: Electronic records, Semantic network, Semantic Web, Knowledge Graph