EIAH Data Model: Introducing the building blocks of the information architecture

Introduction:

The encyclopedia of Iranian architectural history was established with the goal of increasing the accessibility of the widespread resources and documents related to Iranian architectural history and to provide a better and more productive space for collaboration of researchers and scholars, enabling them to expand and improve this encyclopedia.

Aim:

EIAH's model of knowledge is based on two concepts: Entry and Document. An entry is a concept in the field of Iranian architecture which information can accumulate around it and Document is any kind of resource that is available for any of the entries and relate to them.

The information architecture which started to get implemented is aimed to achieve three goals. First, increase the accessibility of the documents related to topics(concepts or entries). Second, the relation between concepts and third the relation between concepts and documents.

Method:

The infrastructure that can achieve the mentioned goals is a three layer architecture (EIAH cake). The underlying layer is a pool of information which is an integration of distributed digital repositories in our case. The top level is the knowledge representation level, an ontology of Iranian architectural history, a conceptual model designed for this specific area of study and the last layer which sits in the heart of this architecture is the mediator level which is responsible for establishing the relation between concepts and documents and enhancing search and semantic interoperability.

Since the initial data must be gathered from various sources, EIAH decided to use distributed digital repositories. That means any cultural/scholar center can store their documents in a digital repository with the standards EIAH has provided. These standards ranges from hardware and security to metadata, description and preservation.

The metadata model is customized based on Dublin Core with refinements and it is capable of describing any resource in this field. An application profile has also been developed based on Singapore framework for DCAP which is simple to use for end users (archivers) and capable of harvesting and working with ontology. In order to ensure the accuracy of archived resources in repositories, guidelines and style-sheets are prepared for entering high quality metadata.

All documents in distributed repositories must get their metadata according to this model and the big leap happens when a detector agent (the mediator level) harvest metadata to interpret them by the ontology (the top layer). The results of this process will be presented in a semantic portal or might be used for complex search queries by end users.

When this happens on a federation of distributed digital repositories, the ocean of separated documents become much meaningful and interpretable by human scholars.

This architecture is a dynamic Topic Map model which links the topics (entries in our case) to their occurrences (documents in our case) across networked repositories and integrate them into an encyclopedia which its final product is not just well-written articles about specific topics but a meaningful collection of all available related resources to those topics.