Creation of Ontology in Higher Education

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Abstract—*The paper aims at semantic web ontology. The paper all we demonstrate the construction regarding ontology in higher education and learning website. The author now constructed training ontology which in turn contains the comprehensive particulars about a variety of program proposed by this university or college. Program ontology is usually used as a information with the college students for selecting a potential training course depending on his or her active qualification. Program ontology can be constructed applying Protégé 4.0 version application. Ontology basically helps the students to choose the various programs of their preference.*

Keywords*: Semantic Web, Ontology, Protégé 4.0*

1. INTRODUCTION

Ontologies are base of the semantic web .Ontology's are basically the specification of the shared concepts. Ontology tells about the relationship between the different entities .Ontology's allows the procedure of studying, taking out, and integrating details on the web, which makes it less difficult regarding design of solid expertise bases that smart companies can count on to guide user's desires . The report we've exhibited a technique of creating ontology throughout training domain for that programs offered at the college making use of protégé application. Recent college web page isn't going to take this semantic into circumstance although displaying the programs made available. Creation of course ontology is usually viewed as the 1st step in the direction of educative semantic web. Ontology, throughout controlled logic, considerations your resolve whether or not a number of types to be are usually simple and asks throughout precisely what good sense what throughout those courses could be said to "be". It is the research directly into becoming in this large amount as it may become ("being qua being"), or perhaps directly into pets insofar because they exist—and not necessarily insofar since (case throughout point) specific facts may be bought in relation to these individuals or perhaps specific attributes use a spot together. A number of historians, noticeably on the Platonic classes, struggle that things (counting vibrant things) allude to existent components. Different thinkers struggle that things tend not to typically title components, but that several give a kind of shorthand to mention of the get together regarding often questions or perhaps instances. Within this recent standpoint, personality,

instead of alluding a great factor, alludes to a get together regarding mental instances done by simply an individual; modern society alludes a great build up regarding people using several imparted capabilities, and geometry alludes a great build up of an distinct kind of erudite pastime. Between these kinds of posts regarding authenticity and nominal's, stay an assortment of different opportunities; nevertheless any school of thought have to give a record of which words allude to materials, which usually tend not to, precisely why, and precisely what types results.

The principal reason behind your Semantic World wide web can be driving your progress on the latest World wide web by simply strengthening clients to learn, convey and subscribe to in concert information even more successfully. Consumers are outfitted for making use of online to accomplish undertakings, for instance, getting your A language like german interpretation for "eight days", conserving the collection book, and looking at most lower cost for any DVD MOVIE. Despite, products can not accomplish these kinds of undertakings without having human bearing, for the good grounds that internet pages are usually meant to become perused by simply individuals, not necessarily products. The semantic world-wide-web is usually a desired information that could be quickly deciphered by simply products, and so products are capable of doing a better level of your tiresome function a part of getting, becoming a member of in concert, and using standing on information on the web.

The Semantic World wide web, since in the beginning thought, is usually a construction that empowers products to "comprehend" and answer complicated human appeals aimed around their particular significance. A real "comprehension" calls for, to the level that the significant information options become semantically prepared.

2. LITERATURE REVIEW

Martínez et.al. [1] OER-CC ontology, for the account connected with Wide open academic assets below innovative commons, the necessary licenses. The specific method is found on typical technological know-how and also metadata

criteria. The ontology might be found in higher education organizations to be able to accomplish sharing and also discovery of the a digital written content.. Georgios *et al* [2] describes a user-centric methodological approach for extracting the ontology of an historical archive focusing on the evaluation issues. Secundo *et al* [3] describes an e-learning approach based on learning in doing environments and also explains an associated e-learning solution developed for supporting the environments based on premising semantic web technologies. Wang *et al* [4] presents an architecture of agent-based semantic-web department content based management which is known as sdms and is used to manage the typical higher educational field Prakash *et al* [5] proposed the idea of merging the two ontologies and explains the various issues like ontology creation, reuse etc. Freire *et al* l[6] proposes the architecture ad descries the implementation detail of a new semantic web tool known as semantic web editor integrating ontologies and semantic annotations with resource distribution framework which helps in creation of semantic web documents for web users. Mao *et al* [7] proposed an optimized method of sematic we services matching with efficient index which includes the creation of efficient index based on entity clustering index and algorithm for discovering each cluster .

3. PROPOSED MODEL

The author used the Protégé tool 4.0 for the creation of ontology for the higher education. The ontology basically helps the students to choose the various programs to their choices. The author uses the protégé tool for creation of ontology. Ontology creation includes the various entities like Programs, Mode of Study, Assessment, lecturer, Students and projects. This instructive ontology, with its classes and the connections created among their examples, speaks to the center segment of an electronic e-learning framework that could be utilized as a part of a virtual college. All structures that cooperate to liven the e-learning framework are focused around the examples characterized inside the metaphysics. The principal step we took in developing this instructive ontology's was to secure the area of the cosmology. Our philosophy will be utilized to speak to advanced education elements, like University, Faculty, Student, Teacher, Course and Lecture.

All these ideas were characterized having as a primary concern their participation to an electronic e-learning framework. We consider the fundamental area of this instructive cosmology to be representation of electronic e-learning frameworks in higher training. The ontology's speak to extraordinary results of Semantic Web. Semantics guarantees the human client that machine execution is made one stride further by giving it the important devices to not just process the accessible data, additionally comprehend it and create new thinking examples keeping in mind the end goal to develop its capacities of recovering data. Having these ideas

as supporting components, the undertaking of building the instructive philosophy resumes to performing a exhaustive exploration of what an e-realizing framework is about and separate the essential components that create the structure onto which the framework can create. At the point when distinguishing the components that are needed for an e-learning framework to be useful, we have remembered the genuine life model:

- Users are isolated into instructors, understudies and chairmen, based on the parts they play in the framework.
- Learning materials are organized into learning sets, in light of their level of trouble and the level of information of the client included in the learning procedure; these sets are focused around the genuine thought of a study year curricula, made by educators and organized to offer the understudy a continuous presentation into the ideas of the region of study.
- Acquired learning is put into practice through homework and ventures that contain particular necessities went for focusing on the most essential subjects of a learning material, separately, of a gathering of learning materials. Evaluations are exhibit as the base exercises went for deciding the level of understanding of specific subjects for the clients occupied with learning experience

4. SIMULATION AND RESULTS

Protégé is an effective environment for altering ontology's and information bases. In Protégé, there are a few tab-level augmentations accessible to philosophy designers, which add to the client interface of Protégé [4]. On the other hand, there are few plans B for putting away ontology's and learning bases. Right now, Protégé stores ontology's and learning bases as records or tables in social databases. The document stockpiling comprises of a gathering of independent records; that is, an undertaking document (with the .pprj expansion) and documents for classes and examples (people). Some stockpiling conFig. urations consolidate classes and examples in a solitary record. The preference of utilizing a few documents for capacity is that the records can be utilized straightforwardly by different applications, for example, applications handling examples just. The focal point of a solitary stockpiling document is that it rearranges record administration, for example, renaming and replicating. Moreover, it may be simpler for tenderfoot clients to handle single-record ng than to oversee various documents. Luckily, the Protégé structural planning differentiates its inner information representation from the outer serialization of the learning base substance. The Protégé application-programming interface (API) helps stockpiling backend augmentations, which permit engineers to change the way Protégé spares and burdens ontology's and information bases. The standard Protégé dissemination contains diverse storage backend executions for Clips, XML, RDFS, OWL, and databases. The standard document based backend

augmentations, notwithstanding, have a tendency to utilize numerous records and voluminous punctuation without pressure. Subsequently, from an immaculate information stockpiling perspective, these arrangements are wasteful. The objective of the PDF backend methodology is to utilize the Portable Document Format (PDF) as the premise for a Protégé stockpiling backend. This methodology permits Protégé clients to store ontology's and learning bases inside PDF documents. It is conceivable to utilize prior PDF records as formats and add ontology's and information bases to them. The ensuing PDF documents will at present be archives that clients can see on-screen also print. Devices for taking care of PDF, for example, Adobe Acrobat Reader, will proceed to function as some time recently. The objective of the semantic-archive methodology is to bring archives what's more learning bases closer together. The distinction between semantic reports what's more the PDF stockpiling backend is that semantic archives are proposed for report annotations, which relate ideas in the metaphysics to chose message in the reports, while the PDF stockpiling backend stores ontology's as connections to PDF records. We accept that the PDF backend methodology will help Protégé clients oversee record based capacity of ontology's and information bases. One of the preferences of utilizing PDF as the capacity organization is that it underpins layering of joined documents. Notwithstanding filling in as an ordinary record, the ensuing document will be smaller and will join the venture, philosophy, and occasion information.

Fig. 3: Object properties of educational ontology

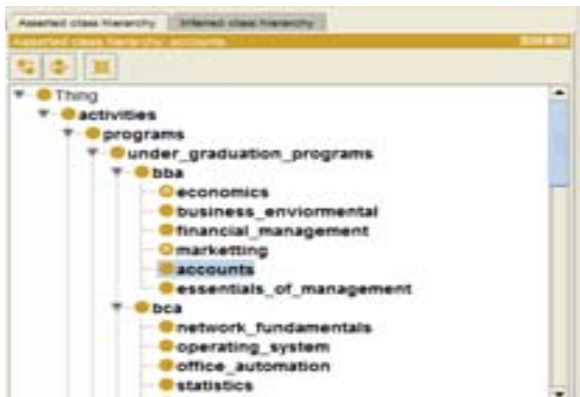**Fig. 4: Various Data Properties of educational ontology**

Fig. . 1: Creation of various subclasses

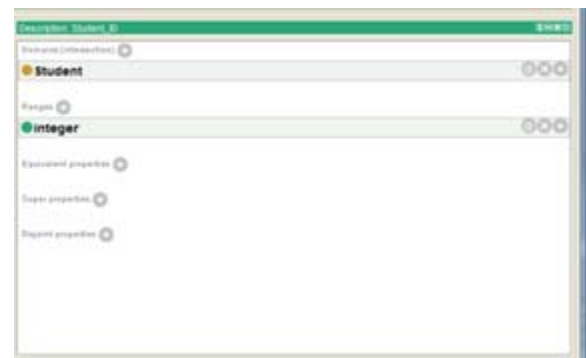**Fig. 2: Various classes of educational ontology**

Fig. 5: Description of student data property

5.   ANALYSES

Fig. 1. Shows the various courses offered by the university The university provides both the under graduation courses like Batch, BCA,BA and the post graduation courses like Match, MCA,MA. Fig. 2 shows the various data values used for the various entities. The data values basically used are the student name, faculty name, student id ,student contact detail ,e-mail id,contact detail of faculty . The various data values used for the various entities are vary useful for the university for recording the database. Protégé tool also explain the two man object properties names as teaches and studies which basically helps in defining the student and faculty works

6.   CONCLUSIONS

The author created course ontology based on the various courses offered by the university and added appropriate properties and restrictions. The course ontology provides the needed semantics for the student in the educational domain. Course ontology can be used by the student for selecting various courses offered by the university.

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