Geo-Informatics-Ontology Model: Review One

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***Abstract*— Web based services or position based services related to spatial data is rising research domain in geographical knowledge processing schemes. This services are been used by desktop client in efficient information extraction from knowledge .the services have got wider in implementation in generating analytical solutions to a map ,current latitude /longitude positional information extraction from knowledge source. This web services are serving in form of android application, Desktop based services like GRASS, ARC MAP, which process accurately Geographical knowledge source from diverse dataset to form a consistent solution .The applications improve the ability of Geographical informatics scheme to provide expedient interface by user and facilitate the user spatial thought incorporation in query expansion and then query reformulation, finally to filter queries no natural language understanding to user modelled solution semantic web i.e. Structured knowledge dataset is the platform for development of framework, with ontology theory in concept mining to form meaningful set of queries and select a single to extract solution from knowledge base. Ontology language module OWL keeps a track of relations in between objects and features presented by them to form a class hierarchy of ontology in implementation domain, concept, and task ontology. The research domain formulated a new sub research domain in geographical informatics with platform as semantic web i.e. Geosemantic web mapping of real word entities. This paper we present is a survey model of 10 research papers that incorporated similarity study of topic and sub research domain in scheme formulation. A combinational approach is selected in formulation of research topic with semantic web as platform of implementation. The major addressable research area is semantic incorporation in user interface which is level 1 research in scheme enhancement from point view of interface, modelling building a semantic, and concept mining interface on semantic data source.**

***Keywords*— Geo-semantic, Ontology, Semantic, Desktop-Application, User-Interface.**

I. INTRODUCTION

User thought are in natural language used daily basis by them which have constraints on applicability depended of each user. A lay man forwards in queries related to geographical domain in natural unformulated queries the scheme that we research incorporated user intent in geosciences domain i.e. location latitude longitude related queries in flow of natural thought of user a lay man general queries that are inconsistent are put forward to scheme which performs query reformulation query expansion and concept mining on queries i.e. similar queries are generated to form a set of natural queries and a similarity module selects in correct query for geo semantic dataset processing. User design are the main goals of software design of the scheme and every module that is been developed intends to incorporate user intent i.e. geo coordinated related queries. A geo informatics scheme is formulated on semantic platform for latitude/longitude related queries posed by user in natural form of language User queries are been evaluated with basic core Natural language processing methods with ontology for concept generation. A scheme interpretation of query is done by performing tokenization, steaming, stop words removal, noun and pronouns identification ontology modelled language or OWL data file that map user and real world relation in them to form. Protégé tool helps to develop OWL files. Concept based framework defines some set of constraints and policies. Lastly scheme can chart those entities with the geographical co-ordinates to present in web services in geo data. The scheme incorporates tool like GRASS, ARC MAP, and protégé tools. function are built in scheme such a way that user query handling is done with minimum query fondles by lay man client need not understand these constraints and needs to be unaware of these constraint rules and methods predefined scheme use methods for informatics generation from geo informatics scheme diverse module communicate with each other's to form User query layer on top of semantic layer of semantic web.

1. Commencing semantic scheme part to module of implementation layer.

2. Solution formulation from implementation scheme.

An interaction in between graphical interface based on concept map is done with user in regards to previous et of generated concepts to form new solution generation for location based queries. Ontology language scheme OWL text files interact with graphical interface of scheme to produce in solution generation stream of constraints with new set for semantic investigation of machine scheme also enter in with application of Geographical API for Mapping location to formulate a solution on map view of query.

II. LITERATURE SURVEY

J N. Guarino, [7] research on multidisciplinary informatics extraction is base survey paper selected in research on informatics system with concluding remark of ontology matching for sematic enrichment. F. T. Fonseca and et al research paper is introductory paper for research article in domain of geographical research, which enables core concepts

of geographical informatics scheme understanding from point on core research undertaken in by search scholars. [3] D. W. Rhind and N.P.A. Green [9] focus on user requirements for geographical information scheme within the community of scientists in the Natural Environment Research Council (NERC) in Great Britain irrespective of the community's.

1. Diversity in terms of geographical dispersion of users.
2. Variety of computing skills which exist
3. Properties of the data held in each institute of NERC
4. Scientific and contract research being undertaken

Along with study of user requirements they also discuss compatible characteristics of spatial data structures and how these match the functionality identified as required. And in accordance with this analysis, a conceptual design for a NERC GIS is described. Agustina Buccella et al.[10] integrate some current approaches based on ontology-driven geographical information integration. Many new technologies have been developed to capture a large amount of information about the earth. These technologies can be combined with enhancement in the distribution of GIS on the web that leads to the proliferation of different geospatial information repositories and the consequent need to integrate information across repositories to get consistent information. To handle such situation, many approaches use ontologies in the integration process. Krzysztof Janowicz[11] contend that trends such as big data, Linked Data, Smart Dust, Digital Earth, and e-Science need a radical paradigm shift in ontology engineering away from a small number of authoritative, global ontologies developed top down, to a high number of local ontologies that are driven by application needs and developed bottom up out of observation

III. EXECUTION DETAILS

The research problem address Geographical informatics with formulation of interface incorporating class of ontology a singleton class i.e universal ontology framework is used to incorporated task concept, domain concept, spatial concept in method formulation for translating queries on diverse domain in building a model to interpret those queries. Latitude longitude related queries are modelled with scheme A typical set of latitude /longitude related queries is formulated and saved in base dictionary of scheme for core concepts in queries of user desktop software like GRASS,ARC map are formulated and build on these concepts only but they can be extended to web services like map rive for user queries on geographical maps. The scheme is divided in four steps for easy understanding of architecture.

1. Prior processing of data
2. Base concept
3. Ontology constraints
4. Mining of solution

Parallel architecture of system in show (Fig.1) that are interactive module from point of software architecture. User query is posed in interface or is first step in process flow of data base concept on these language extracted tokens are done and given to ontology or base knowledge class for processing with OWL text file applying matching pattern for solution generation. To geographical idle processing tool like GRASS or any other to final solution generation.

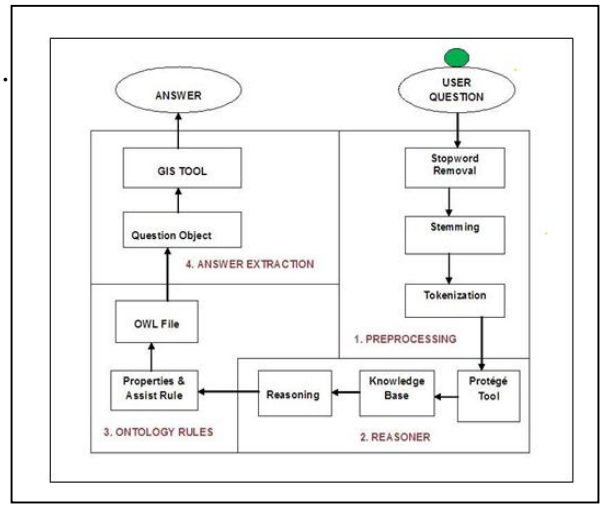

Figure1: Scheme Architecture [3]

A. Client queries

Point of consideration of user is very important in any scheme development hence foremost part of model incorporates and puts hand on user queries understanding request from user are handled in appropriate manner by interface to produce in easy solution generation. Technical non-technical user is system users hence a high end interface is designed for ease

The design pattern of system are ease generation method for client of system we interface in our scheme with geo graphical informatics to form geo semantic platform spatial latitude longitude space queries are very important area in research user query modelling from point of his location to require solution generation put forward new set of solution and selection is to be made from user location which increase relevant thought query of user i.e. spatial class of queries for user Therefore asset of queries are taken in consideration in our system to form a new set of base class in natural language scheme to generate a support knowledge base class in system. The class support natural post of query by every user and a suggestive method for selection of appropriate class of source

B. **prior processing of dataset**

Prior processing is implification of core methods of research domain on queries and making the divergent data in singleton data form. Natural processed queries bring in divergent solution generation performing token class generation, implementing stemming algorithm filtration of stop words the outcome of core implementation of methodologies is at ease data in coherent format for applying further processing. The subsequent processing module are describe in paragraphs, the core methods in prior process are as following

C. **Extraction of stop words**

Any line of query posted by user in natural form contents a unwanted set of stop word such as "is" "the" which are irrelevant and increase query size and time processing with irrelevant data .Natural language parser removes in those words that have less meaning interpretation or do not contribute semantics of sentence are eliminated by base stop word class program written in java eliminating stop words the resultant words are meaning formulation words that need to be cached by scheme for interpretation of queries the extraction model is middle base model in system build of research the sentence is a cluster of words and phrases which form a meaning in general class of sentence and are mark words for extraction of ontology base class relevant in selection knowledge base .the process is formulated to generate only definite set of query and is part of query reduction and reformulation process in IR(information retrieval).This middle model in interface is inferred with functionality of reformulation of query which has been modelled in intent of user particular in domain of our research for latitude or longitude informatics

D. **Stemmer Algorithm**

Linguistic generalization process to cluster and reduce a class of words to a general form and then wrap in base class of similar sound of words. Words like "compute", 'computational' "computation" are clustered in one class to form a base knowledge dataset in building informatics system. the module is implementation of porter stemmer algorithm in general .we have taken commonly used porter algorithm which would be replaced in advance system design. Sentences word having common end like –is –al,-on are eliminated by this scheme .rule methods for constraints are selected in model are implementation of scheme

Outcomes are elimination of suffix and prefix from a query sentence. A misquery problem in selection of appropriate dataset is eliminated and only relevant dataset is selected for extraction of informatics.. This reduces extraction time and makes software architecture design faster and quick responsive.

E. **Token class**

Natural query from user is unformatted dataset and needs to be taken in common format for informatics. A sentence is shopped in classes of words phrases for further processing which is token class in all forming a dictionary support for meaning interpretation of user. A sequential unit class for semantic pattern match for query to a source selection for informatics is tokenization. Classification and categorization are two dissimilar classes used in by token class model to form new set of upgradable support dictionary

F. **Base concept match model**

Protégé contrivance model

Protégé contrivance model intakes in tokens for processing with analysis of informatics to support concept match model in geo informatics the token are posted to model in class of hierarchy model to form and ontology language model or ontology web language (OWL) scheme web texts are formatted in sequential pattern by OWL the class provide a concept based informatics on system with huge support for similar dataset forming a platform of semantic web. Relations, concepts map and entities are co-ordinates clustered by Owl in similar group. Resource description framework is taken in our model for entity modelling on common grounds the complete knowledge set is modelled in common format of for analysis with an line structure connecting each information related to topic such as "place domain" with related class ontology connecting them. The protégé scheme visualizes ontology class on top with relations among them with concept map of user intent processed by token model and core NLP tasks .logical analysis of extracted dataset is to be done by model of protégé.

D**. Knowledge base**

Knowledge dataset is support data informatics in common grounds for particular class of informatics the queries are taken to appropriate knowledge dataset for processing with validation of informatics extracted from base .A effective base approach in supportive artificial system for informatics extraction

E. **Ontology constraints**

Structural similarity is presented by ontology methods. Description of concept class in entities and related objects is presented by scheme constraints are rules in ontology model implementation with attributes that combine similar dataset in common format classes sub models and super class are

constraints generalization for data structuring.. Entity object taxonomy brings in a related objects and co-ordinates that describe them in whole manner of base theory for semantics of data representation.

F. Solution Mining

Web ontology resource descripted data is given to mining to concept tool like GRASS etc. in supportive analysis of base knowledge dataset solution is generated for our geographical system this mined solution is served as web services to user today for informatics need of user in latitude or longitude data query. The mine result is presented to user intent and concept hence they present only thought of user need. This research model is geo sematic model.

A algorithmic procedure is base structure natural language processes followed by ontology rule mining with support knowledge base selection, with filtration of relevant dataset in user intent token class for middle level prior processed data. Through which token words are relate with a particular meaning. Mining of geographical dataset is been done using distance to concept Km to concept of miles to concept of meters etc. in algorithmic process .K-means clustering algorithm is base algorithm selected in process of our algorithm model .this paper we only formulate design of algorithm as k-means being its base class for built of new algorithm for our system

IV. STATISTICS SET & VALUE SET

Layman user query understanding is main formulation design of research project intended to design user interface incorporating spatial query thought, with ontology framework for modelling the user spatial queries We build the knowledge data set required for user geographical informatics based on ontology framework, with OWL file format for supportive knowledge set .the scheme is designed on 7 layer architecture of semantic web with resource description framework , relational mapping class, XML support scheme in platform building. Dataset has a knowledge query support from tools like Protégé, GRASS etc. .the informatics are presented in machine interpretation format and hence make machine user understanding gap lesser .the gap of informatics understanding brings down irrelevant results from scheme output to form relevant GIS(geographical information system.

V. RESULT VALUES

Result set of scheme produces relevant results the results have been studied from previous research papers of scholars and benchmark articles are taken into result analysis of geo informatics system the performance parameters are taken into consideration for user intent relevant query solution from previous geo informatics system the ontology class system is taken in consideration and research papers based on ontology based geo informatics system are considered in research scholar papers. A new result parameter set is placed down from this research work for modelling our system on bases of performance optimization. The performance parameter selected in new scheme model is “interpretation of query accurately from user point of view” with sub parameter as faster result generation from supportive knowledge

VI. CONCLUSIONS

The framework is a ontology base system for accurate user query interpretation with supportive tools and semantic web as informative web of documents .the semantic web format put in informatics in common text format and bring in semantic understanding at interface level of user query interpretation in system. Future scope is building of new system modeled on research scholar. This is a survey analysis paper which need of survey on further research on YAGOO ontology and artificial intelligence for further enhancement of work.

ACKNOWLEDGMENT

I express my gratitude towards Prof.P.A.Jadhav, Prof.S.Z.Gawali without whose support this research would have not been complete. I express my special thanks to Prof.S.B.Nikam and Bharati Vidyapeeth College of engineering pune.

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