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Enable the Syntactic Web Services using Genetic Algorithm

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Abstract

The main Purpose of the project" Enabling Semantic through web services using genetic approach" is to develop and designed the web service including ontology concept. This project is used to overcome the drawbacks of the syntatic web services.In this project, we are developing the web services or the wsdl (web service description language).After creating the wsdl, we are including the ontology into wsdl using the wsdl to owl-s conversion module. The wsdl to owl-s module is used to convert the wsdl into the owl-s file.Automatic Composition of semantic web services module is used compose the two or more existing web services. Composition process is the output of the one web service is the input of another web services. In this project, we are developed the automatic composition of semantic web services. In this project, Automatic Composition module uses two web services. User enters the keyword and chooses the extension in the web page. In this project, we are using the genetic algorithm for develop the semantic web services. Genetic algorithm is to create the two lists and all the files in the database are stored the two lists. If the user enters the keyword and chooses the extension, the first web service is used to combine and to provide the filename. The second web service is used to search this filename in the two lists. The second web service use the genetic algorithm is used to search the file exists or not.

Keywords: *Creation; Conversion; Discovery; Composition.*

1. Introduction

The project "Enabling semantic for the web services through genetic algorithm" is to provide the web services including ontology concept. Using genetic algorithm, importing ontology into the syntactic web services to provide semantic web services [1]. The genetic algorithm consists of four Techniques like,

- Mutation
- Crossover
- Selection
- Fitness

Among these four functions in genetic algorithm, fitness function is implemented in this project. In the existing syntatic web services, we can have several drawbacks. In order to overcome these drawbacks, we can have to enable the semantic in the syntatic web services [2]. The next Web generation promises to deliver Semantic Web Services (SWS). Services that is self-described and amenable to automated discovery, composition and invocation [3]. Semantic Web Services have the potential to change the way knowledge and business services are consumed and provided on the Web. In this project, we survey the state of the art of current enabling technologies for Semantic Web Services [4]. In the syntatic web services, it doesn't know what services are all about and cannot rectify the mistake automatically. Currently, we have developed the semantic web services, it can rectify the mistake automatically, Automatic discovery and Automatic composition process is done easily [5]. In the normal syntatic web services uses parlay x standard, we have several drawbacks. So in this project, we have an idea to develop the required semantic web services with ontology, here we are using telecommunication domain as an application. Telecommunications

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service domain ontology mainly addresses the semantic interoperability of telecommunications service [6]. This domain ontology mainly provides the shared domain vocabularies and knowledge to support the semantic web applications in the telecommunication service field, such as semantic telecom service description, service discovery, and service context modeling [7].

1.1.Web Service Creation

Web service Creation module is used to create the web service. A web service is a method of communication between two electronic devices over the World Wide Web. This module is used to create the web service in the existing web services or to create the new web services. WSDL, is used to describe operations and the formats of the input and output messages [8].

1.2.WSDL to Owl-s Conversion through Genetic Approach

WSDL to owl-s module is used to convert the WSDL file into the owl-s file. This module is performed using genetic algorithm. To include the ontology in the WSDL file and to create the owl-s file. WSDL is an XML format for describing network services in abstract terms derived from the concrete data formats and protocols used for implementation. OWL-S is an OWL-based Web service ontology, which supplies Web service providers with a core set of markup language, constructs for describing the properties, and capabilities of their Web services in unambiguous and computer interpretable form [9].

2. Database Design

The most crucial point in the development of a software project. The impact of data structures on program structures on procedural complexity causes data design to have profound influences on the software quality. Data structure is representation of logical relationship among individual elements if data. Thus the primary activity during data design is to select logical representation of data objects, identified during requirement definition and specification phase [10].

2.1.Tables

Each and every fields will be tested while running correctly or not. The Link from one module with another module will also clearly check. It shows the validated details of WSDL or owl-s file, user gives the keyword and extension. If user provides the correct keyword and extension they can view the WSDL or the owl-s file. If admin provides the wrong keyword and extension the trigger message box to warn that the no result found. (Refer Table 1).

Table 1 Experimental Input Parameters for EDM

Fields	Data type	Constraints
Id	Int	Primary key
Fname	Varchar(20)	NOTNULL
keyword	Varchar(20)	NOTNULL
Data	Varbinary(max)	NOTNULL
Ext	Varchar(10)	NOTNULL
Mutate	Int	NOTNULL
Fields	Data type	Constraints
Id	Int	Primary key
Fname	Varchar(20)	NOTNULL
keyword	Varchar(20)	NOTNULL
Data	Varbinary(max)	NOTNULL
Ext	Varchar(10)	NOTNULL

2.2.Figures

To generate this new generation from the old, there are three primary mechanisms: reproduction, crossover, and mutation. Reproduction is the simplest since it is just the copying of one or more individuals from one generation to the next, based upon their fitness values. Crossover is the signature feature of genetic algorithms. This process takes random pairs of individuals and randomly exchanges segments of matching chromosomes. This is best explained with a simple example. Suppose the two selected individuals each have two chromosomes, with five genes per chromosome. Crossover means that in the first chromosome, the first two genes from each individual are exchanged, and in the second chromosome, the last four genes are exchanged. This process produces two new individuals for the new generation.

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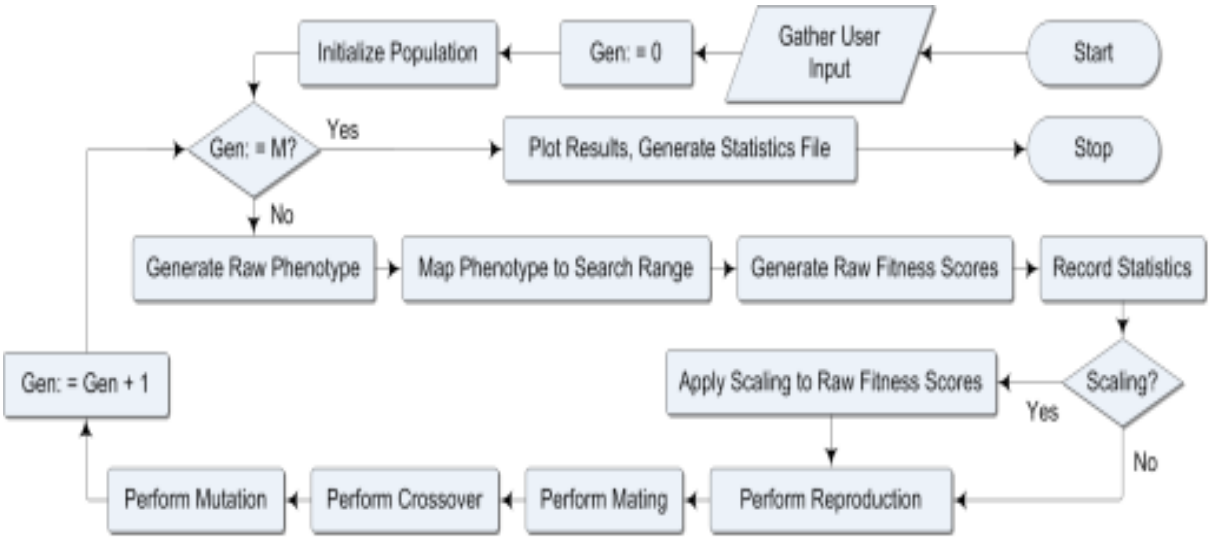

Figure 1 Genetic Algorithm Flowchart

Algorithm

The pseudo-code of the **Genetics** genetic algorithm steps. (Figure 1)

1. P0 Pinitial
2. F(P0)
3. **while** ! finished **do**
4. g g + 1
5. Sg selectS(Pg−1)
6. Og selectO(Pg−1)
7. Og alter(Og)
8. Pg filter[gi _ gmax](Sg) + filter[gi gmax](Og)
9. F(Pg)

3. Results and Discussion

3.1.Results

In this project, we are using the genetic algorithm for develop the semantic web services. Genetic algorithm is to create the two lists and all the files in the database are stored the two lists. If the user enters the keyword and chooses the extension, the first web service is used to combine and to provide the filename. The second web service is used to search this filename in the two lists. The second web service use the genetic algorithm is used to search the file exists or not telecommunication domain using the genetic approach. In this project, the process of Automatic discovery and Automatic composition of semantic web services is done.

3.2.Discussion

This project, to create a web services enabled semantics with ontology, in the domain of telecommunications. First, we can create the web services i.e.wsdl file. A web services is a method of communication between two electronic devices over the World Wide Web. The Web Services Description Language is an XML-based interface description language that is used for describing the functionality offered by a web service. A WSDL description of a web services (also referred to as a WSDL file) provides a machine-readable description of how the service can be called, what parameters it expects, and what data structures it returns. It thus serves a purpose that corresponds roughly to that of a method signature in a programming. (Refer Figures 2 & 3).

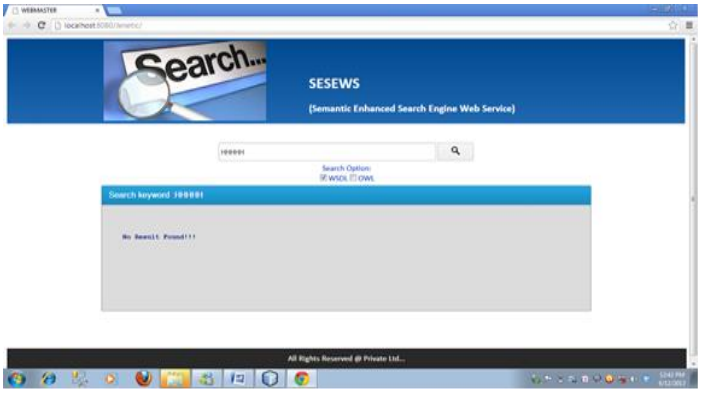

Figure 2 Validation form 2 for Automatic Composition

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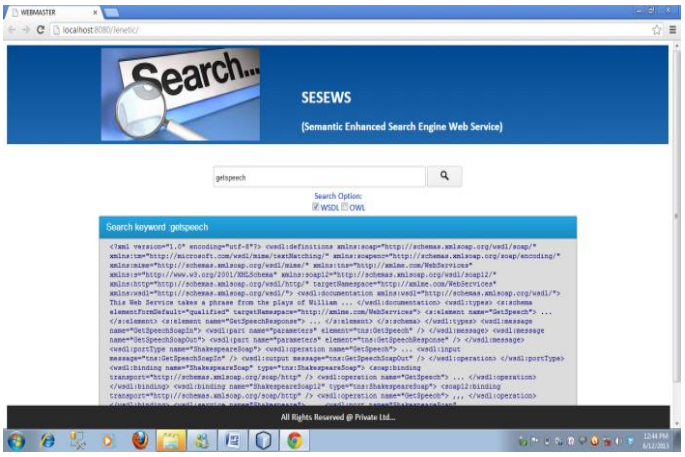

Figure 3 Validation form 4 for Automatic Composition

Conclusion

In this project, we have enabled semantic in to the existing syntatic web services in the telecommunication domain using the genetic approach. In the Future Enhancement, we have enabled semantic into the existing syntatic web services in the telecommunication domain using the routing algorithm. Routing algorithm is used to find the shortest path between the two nodes. Using routing algorithm, we have enabled semantic into the syntatic web services in the telecommunication domain and to find the shortest path between the tower and the user mobile.

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