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Integrating Extended Gaia Semantic Information Retrieval Model with Android Based System using Native API

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Abstract— In present scenario software industry becomes more advanced. We all know that for developing software system there are many latest technologies available like Agile Software development , Software Agent, Semantic Web ,IOT , Cloud Computing etc. In this paper author tries to provide implementation of Extended GAIA Semantic information Retrieval System. E.G.S.I.R. is basically combination of software agent and semantic web features.

Index terms---- M.A.S. , Mobile agent , Manifest file ,A.I. Agent, Native API,E.G.S.I.R.

I. INTRODUCTION

An agent is an intelligent, autonomous software component capable of interaction with others to achieve a common goal. Collection of multiple agent to perform some specific task generally known as multi agent system. In software fields there are two types multi agent system available open multi agent system & close multi agent system. For developing multi-agent-system there are many methodology available in software agent field like MASE ,TROPOS ,PROMETHEUS ,GAIA etc.

Gaia In MAS era GAIA was first complete methodology which works form analysis to design phase in MAS sdlc.

GAIA versions :

Version 1: This methodology works analysis to design phase but it excludes requirement phase like requirement specification, gathering, implementation & it is applied after when requirement are properly collected and identified i.e. GAIA version one applicable after requirement phase and before implementation phase

Version 2: This is updated version of Gaia methodology which removes short comes version 1 .In this version this methodology will become more flexible but still there are some basic limitation :

Limitation GAIA Version 2:

•goal interaction as well as non sharing goal process.

•Provide a unique identification of all Goal is still not available in this version .

In GAIA sharing of goal is presently not supported.
to overcome this problem author tried to develop a semantic based multi agent system known as "Extended GAIA methodology based Semantic-Information Retrieval-System" In this paper author provide implementation using android based native API.

Extended Gaia Semantic Based Information Retrieval (EGSIR) App is an semantic based project in which the agent is trained to perform a particular task or an activity.(legal cases information) It is like a one stop shop for the users who want to save their time wasted in typing and searching. This project focuses basically on 3 modules i.e. firstly an agent module which is trained according to the user's choice. This app will use artificial intelligence for performing the action proposed by the user and provides a proper dialog flow between the agent and the user. The actions are performed according to the user's choice..second step matching data based on semantic information techniques & third retrieve data with the help of voice agent.

II. PROPOSED MODEL & RESULTS

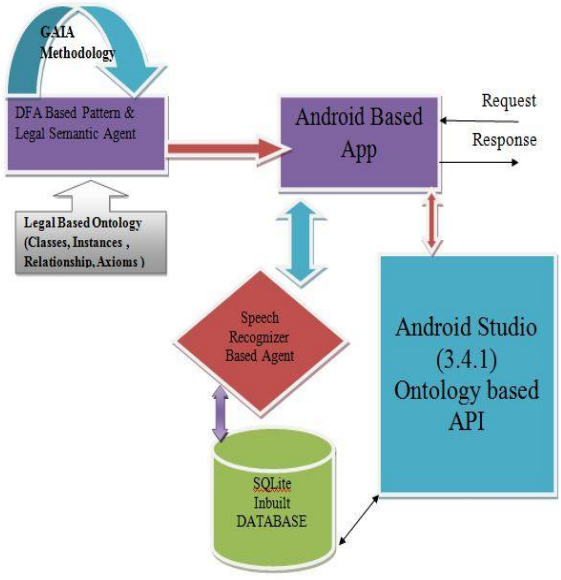

Figure 1. E.G.S.I.R. Implementation Model

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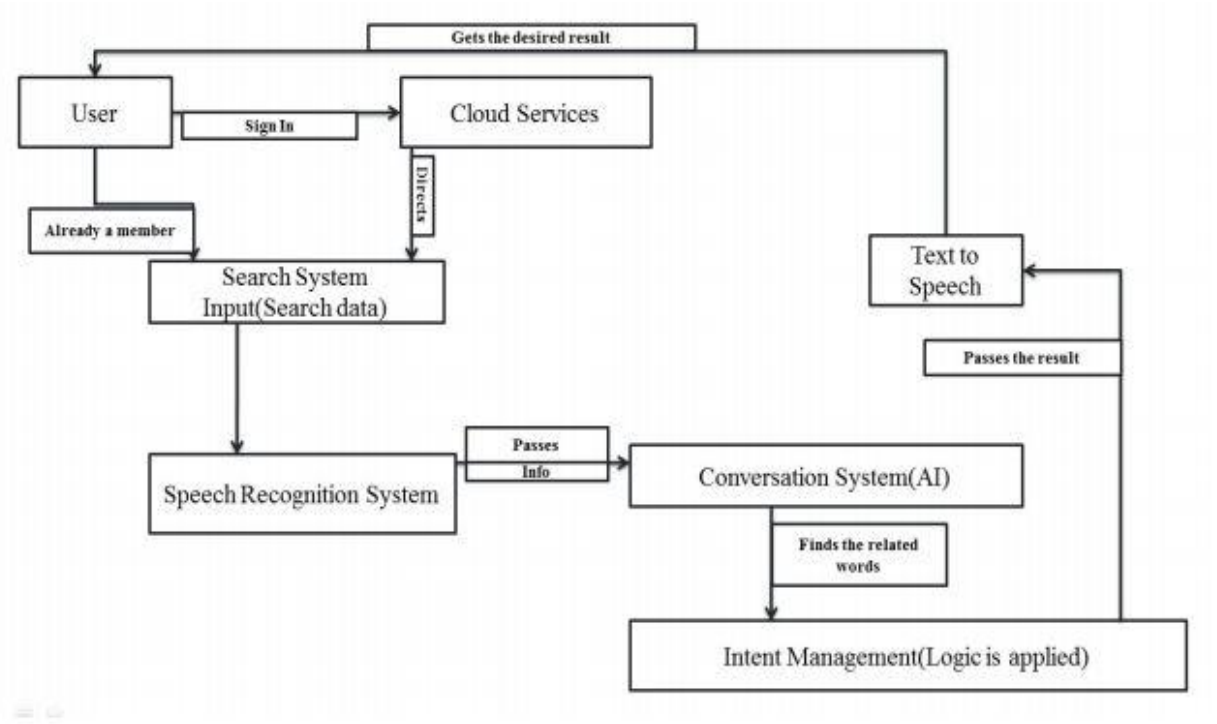

Figure 2. Working Model based on Semantic Agent

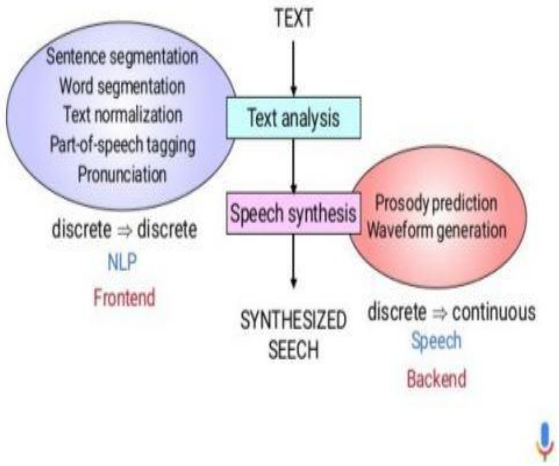

Figure 3. Flow OF Speech to Text System

The following are steps which signify how will our assistant work :-

1) The user will firstly have to LogIn into the application for which he sends his credentials to the cloud service(Firebase) or SQLite database . In this cloud service has id and password is verified by agent and hence user LogIn into application.

2) The user provides an input in form of speech to the application and this speech is recognized by agent and this agent process this input according to the training set provided to the agent.

3) The agent recognizes the speech and performs the required action like provide information(Case Id, details, Crime status, Victim Name, Judge Name etc)

4) The agent performs accordingly and produces a result set which is passed on to the user and there by fulfilling the user's requirement.

5) The speech is first converted to text using speech to text model and is then analyzed by an agent for further management of intents.

6) The same system is followed while converting speech to text.

7) The agent pass the information to the user using speech to text format using NLP concept. Natural Language Processing plays a vital role is this process.

8) Intent Management handles the functionality of other modules.

9) Featuring of Agents is done using NLP.

As the user enter inside the application the Welcome Screen appears to him which has options to Login for existing user and Register for new User.

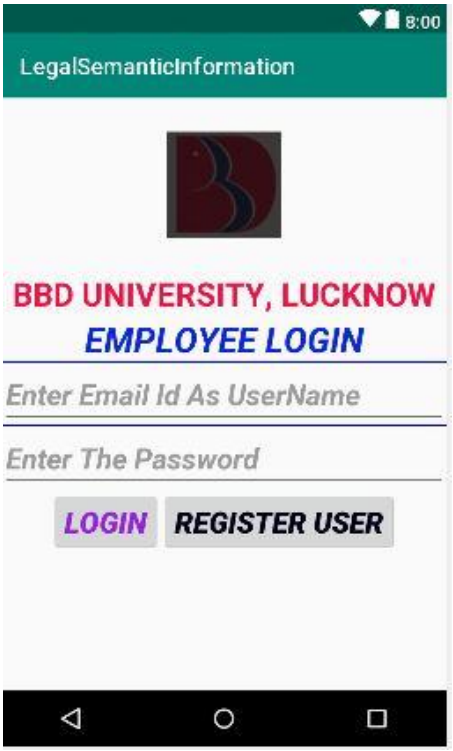

Figure 4. LogIn Page

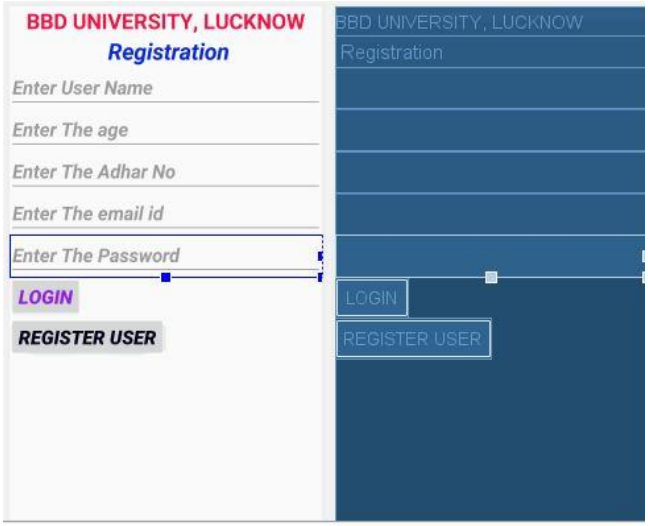

Figure 5. Registration Page

III. LOGIN USING VARIOUS METHODS

User will have following options in which he can login inside the application:

- Facebook
- GMAIL

Facebook Login

We can also provide LogIn features with the help of Facebook App link or we can say that through Facebbok validation user also entered in Home Application.

IV. ONTOLOGY GRAPH

Ontology basically part of semantic web as earlier author discussed benefits of semantic based agent so provide a unique features this concept introduced.

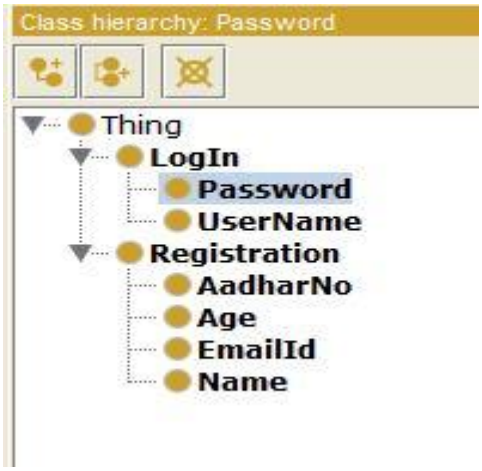

Figure 5. Class Hierarchy Of LogIn

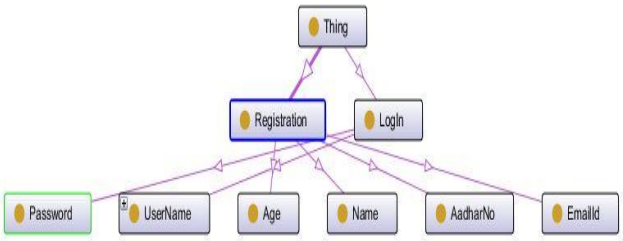

Figure 6. Onto Graph Of LogIn

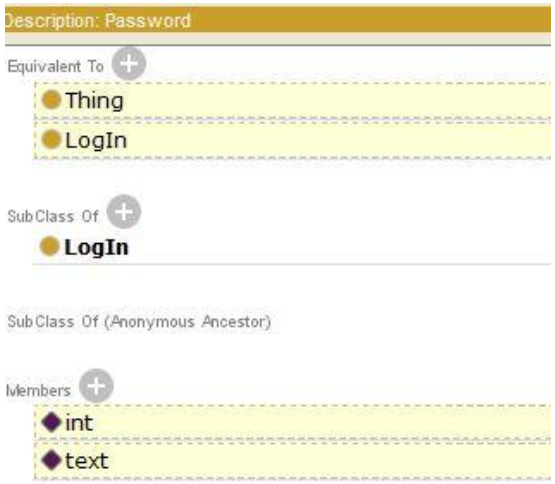

Figure 7. Data Value Of LogIn

In the above diagram we achieved the semantic web features through ontology. Ontology is a part of semantic web which works based on concept as well as provide a unique and meaningful information. In the above diagram author create LogIn & Registration ontology which consists many other subclasses like UserName , Password , AadharNo, Age etc.A part of this author provide data property of each class like which class support which data ie.(Password support Alphanumeric Data type & UserName support String data type).

V. CONCLUSION

In this paper author tried to integrate E.G.S.I.R. model with android and semantic based API. In future we also provide full implementation of this model with the help of internet of things.

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