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Automation of Form Filling

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ABSTRACT

Nowadays, at any academic institution, form filling transactions are quite common at a regular interval. It is possible to identify the fields in a form which are likely to be entered in another. Unlike previous proposals this mechanism does not depend on the compilation of a dictionary of common terms. Each content provider is able to define private dictionaries where desirable. The scheme remains traceable since the interests of content provider will encourage the use of established schemes whenever possible. With digitalization and e-governance across academic institutions, the data or information required by such forms are available in different digital sources like databases, spreadsheets and other file formats, however the data from the available sources is not migrated into fields in the format automatically, but is filled either by extracting contents from digital sources and retyping or by using copy and paste option provided by the technology which requires human intervention. This motivates the research with an objective to analyze and design various conceptual models to automate the filling of various web enabled forms by making system intelligently interpret the required data i.e., using pattern recognition and natural language processing of data.
Keywords: Auto filling, Micro formats, Web forms concept mapping and Semantic Web.

I. INTRODUCTION

Recently, web services play important role in people's life. They are the main input mechanism for users to supply data to web applications.Every activity is done in web applications by using a smart phone or computer. They do so to sign up to social network applications and do advanced searches on search based web applications. Although one person has only one system, to fill multiple e-forms, one basic set of information of a person is not used to auto fill. The end users often have to repetitively type the same information and it increase competition productivity i.e., must maintain multiple accounts. It is redundant, time

consuming and not an efficient use of technology. To save users from repeatedly typing, it is more efficient for users if the information commonly required among different websites can be propagated and pre-filled for the user.

The first proposal of our project is to design query for every question in web form and enable automatic push of data or information from the user specific digital source to the form. The second proposal is to accomplish automatic fill up in the case where there are more than one form. In this project the techniques are used to develop software that would support the user on the process of filling e-form through automatic and pseudo intelligently filling the fields of forms with information possessed by an intelligent system.

II. EXISTING SYSTEM

In the existing system in order to fill in the same information into the fields of different application forms they require same tag name for the field and the systems are user interface dependent. Minimum collection and analysis of user input is done. Web application is linked externally and cannot detect user's contextual information.

In the recent years, industry and academic worlds have developed several tools and approaches to address the problem. Web browsing software provides web form Auto-filling tools, such as Mozilla Firefox Add-on Autofill Forms, to help users fill in forms. In general, these auto-filling tools record the values entered by a user in a given form and fill the entered values into the same form when the user visits the same website again. The tools also allow users to modify the values manually. But the problem is they are not able to fill in the different application forms having the same fields requiring same information.

III. PROPOSED FRAMEWORK

The problem we address in this work is how to automatically fill in the information related to a particular person into different applications, by making use of the generalized form which consists of common fields from various applications and information related to those fields.

Our solution is divided into a series of steps organized in an architecture. Initially various application forms from different areas are collected and categorized based on the type of application. Then common fields among collected web application forms are identified and put in the separate file as generalized form. Tokenization of these identified fields is carried out by assigning a general tag name for the common fields which require the same information. Then matching the fields of a particular form which need to be filled by the user with fields of generalized form is done. Filling of data into the required fields is automated. Suppose there are three application forms, the field Candidate name in Government form can appear as Patient name in Hospital form and as Student name in a Academic form, but all the three phrases mean the same and require the same input. So these three common fields are generalized and given the tag name as Name in the generalized form.

Following Figure shows the example for proposed architecture.

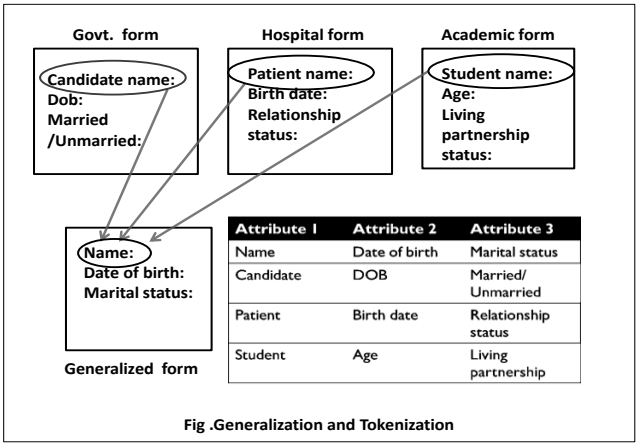

Fig .Generalization and Tokenization

Our proposed framework has the following benefits

1. Reduces the time required to fill the form.
2. Reduces the chance of manual errors done by the user during the form filling process.
3. Avoids repeated and redundant entry of same information into different forms.
4. Avoids references used to remember lengthy data.
5. Provides easy to use environment by automating the process of form filling, hence reduces the efforts of the user.

IV. CONCLUSION

The automation of form filling is important aspect in modern world. The different forms have different requirements. Creating a generalized form with generalized filed name with attributes and possible matching field name must be build initially like for a spouse field name, if female has filled the form , then husband's field name must be matched vice versa for male filled forms. The application system must be intelligent enough to solve such ambiguity City and town are synonyms, so both quires should refer to

the same data value. Using the above method can improve the process of automation.

The user interaction must be minimized, only those values that are new or unique for a given form must be filled manually by the user and all must be automated.

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