

Automatic Resume Generator

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Abstract: *Automatic Resume Generator is a cloud based application from which we can generate resume automatically by accessing information from social networking sites like Facebook, Gmail, and LinkedIn etc. wherever the user leaves footprints using API's provided by the respective social networks. All information generated by the application will be accurate about the end user because it accesses the information that is provided by user himself in social networking sites. Here we are learning how to develop new services by integrating and publishing third party services. Compared to existing systems user don't needs to enter all information manually, some fields will be automatically filled by the application where user can cover all the information and reduce the time in preparing his resume, User cannot completely rely on the application as it contains the only information he has provided before. This application is best suitable for the person who often uses social networking sites.*

Keywords: Resume, cloud, social network, API , OAuth

1. Introduction

Resume is a written document representing background information of a person including qualification, work experience, credentials, and accomplishments that is required to apply for a job. The first step in processing of an interview is to short list the applicants based on their resumes. Resume is a part of application process for most of the jobs. Since resume is the first thing reviewed by the managers of company that you will be applied for, you need to create the most impressive and accurate resume which needs some time as well some effort.

Automatic Resume Generator is a cloud based application. This application helps to find Mastering in building an architecture where it can be used for development of applications of similar concepts on cloud platform. The application gives us, an idea of using API's of different sites to develop different type of applications and accessing data from different platforms. It gives an insight of how API's work, how to integrate, publish third party services and develop new services. This application is a successful attempt, in trying to build a professional resume, out of the digital foot prints left by the user in various websites, he has accessed and other online activities. To access the information of user wherever user leaves a footprints' on the web, in the first step the user provides the basic information required for the application then the application fetches the all information from social networking sites on web using respective API's. The fetching of data takes place from client-side and it will be stored in server side and then only authenticated user can use the application of resume generator.

The paper is arranged as follows: Section II describes Literature survey on cloud computing, cloud application, social networking, API and its working, OAuth, its importance, Is OAuth is suitable for API developers? Section III introduces the existing system and Section IV describes the cloud-based application for building resume. The validation and evaluation process of the system is detailed on Section V and VI. Finally, Section VII and Section VIII summarize the experimental results and conclusions of the paper respectively.

2. Literature Survey

A. Cloud computing

Cloud computing [2] is computing that is internet based that provides resources, data and also devices on demand. Cloud computing is all about providing three types of services, SAAS, PAAS, IAAS.

SAAS, an acronym of Software As A Service [3] which provides the services of accessing a software without the need of installing that on ones physical machine, example Gmail, we all have our accounts and access it for sending/receiving mails. We have not installed Google's Gmail software to use it , but still we can access it as it's a cloud application that can be accessed anytime and anywhere. PAAS, an acronym of Platform As A Service [3] which enables the software or other developers to develop, run and maintain the applications without much complexity involved by providing the required platform. IAAS, an acronym of Infrastructure As A Service provides the infrastructure for the developer, we need both software as well hardware to come up with an application, so the required resources will be provided virtually [2] by the cloud and also maintenance will also be handled by cloud.

B. Social network

Social network is a network of social interactions where people communicate directly or indirectly, directly in the sense chatting, voice call, video call etc and indirect communicating includes, comments, posting information, images and etc. Social networking is one of the way to enhance the number of social contacts and business of one individuals, social sites enables us to know ourselves better based on what actually we are interested in, what we are actually looking for, what are our hobbies, for example the websites we visit most interprets what we are actually doing currently and what we are in need of, suppose you want to learn C programming, then you visit the sites that provide good C programming tutorials, and when you are logged in to your facebook account, you visit some pages that you are interested in that might be some artist page, musical page or any science related pages based on your interest. Social network acts as your mirror as it reflects back you with more clarity and facts about you.

C. Cloud Application

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Cloud computing applications are the services provided in the form of software which can be used without installing them on one's computer which implies savings on infrastructure and hardware maintenance cost. Generally the customers of cloud computing do not own an infrastructure instead get it from third party called cloud service providers. These providers also provide storage at their server for storing customers' data. Cloud services are exposed as Web APIs, which serve as the contracts between the service providers and service consumers [7].

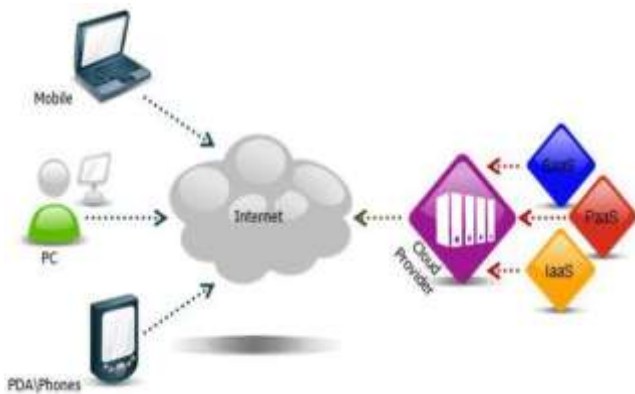


Figure 1: Cloud computing

D. Application Programming Interface

An Application Programming Interface [8] is a set of method and subroutines that are used to define the communication between many software components. An API may be developed for any software library like database system, an operating system or for any web applications as well for hardware libraries. An usage of API reduces the work of a developer as they just use the abstract of an underlying implementation instead of implementing from scratch and also no need for the developer to have an understanding of underlying implementation [9]. API provides us the correct way to write a product that requests. If you consider an example of twitter [9] API's namely, Tweets, Users, Entities, Places. Tweets [13] also known as status updates, some of the fields of this tweet object are: tweet id(to recognize the particular tweet), contributors(who tweeted it), coordinates([longitude, latitude]), created at(time at which tweet is updated), favourite_count (likes), lang (language used), retweet_count, etc. the second object is User [12], some of its fields are created_at (time at which account is created), default_profile(not changed theme or background), default_profile_image(profile picture not changed), description(description of their account), favourite_count(no. of tweets liked by this user), following (people this user following), followers_account (no. of people followed by this account), name, location, status, etc. The third object is Entities [10] and some of its fields are media (types of media uploaded by user), url (included within tweets), user_mentions (name of users mentioned in tweets) and etc and the last object is Places [11] that includes fields like attributes (information about places), coordinates, id, place_type (city, street, country). So, any third party who wants to access some data of twitter users' or places or tweets can access the respective object for their application. Twitter API can be connected to third party application by using TLS (Transport Layer Security) in which users' privacy will be preserved by protecting the information as it travels over the public network i.e. internet to reach twitter

API from user.

E. How API Works

API enables the communication between software application and remote application over the Internet through a series of calls. An API defines the way how the applications/entities communicate with each other. The programming language in which applications communicate over the Internet is XML. Consider an example of developing a new app which displays the price of a specific product X in Amazon, flipkart, snapdeal so that user can choose the site from where he can buy and also this app provides the option of buying a product, then the app has to access updated and accurate from Amazon, flipcart, snapdeal and also include the payment verification module, this seems to be complicated. But API makes this easier as we can make use of API of respective sites and API payment verification software which already exists. The app fetches the information of products from these sites using API and also once the user wishes to buy and enter credit/debit card details, this information will be sent to existing verification remote software and gets response from it indication whether the transaction can be done or not.

F. Open Authentication api-authentication

OAuth is Open Authentication which provides the better way to secure open platforms. The following roles are defined by OAuth: Authorization server, Resource server, Client, Resource owner [14] as shown in the Figure 2. Application client is the third party service that needs the user resource (information) from a server for example twitter or facebook. User or the resource owner is the users of these services i.e. customers of twitter/facebook/etc. Resource server are the application that are providing the required resources to third party application i.e. example, twitter/facebook. As shown in Figure 2 in order to obtain the resources protected by authorization server, the client has to send authorization request to user who is owner of resources, if user wishes to, then he grants the authorization, with this permission of user client request for the access token from authorization server, by verifying the users grant, authorization server responds back access token, using this token client request for the protected resource from resource server and obtains it for further processing as in our case proposed system access the information about the user profile, education, skills, hobbies and etc from social sites like facebook/gmail. OAuth is the best way for websites and mobile apps to deal with authentication. OAuth makes sure that the passwords of users and services provided by third party wont mix-up. It's a Protocol that allows the users to grant access to third party to provide their web resources without providing users' passwords. Its trend of coming up with a software by combining various web applications and mobile applications, if any one application captures users' password then imagine one password of every service will be leaked all over the internet.

G. Why is OAuth important

Consider the scenario where the client application that is accessing users' resources gets hacked and passwords are being stolen? Then the hackers can have the passwords of users of that client application but not of the applications he has accessed via third party(client) application.

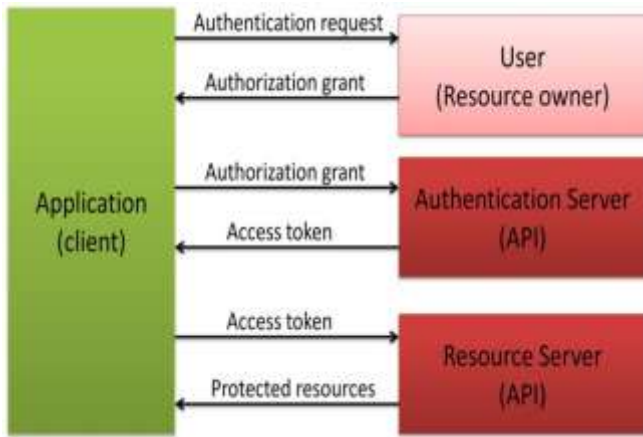


Figure 2: Roles defined by OAuth

Suppose person 'X' is using an application(client) 'A' which asks user X to login to other application 'Y' from where it can access resources (in our case, we access information from facebook and gmail). If application 'A' is hacked by someone then they can have password of 'X' of application 'A' but not password of 'Y' application.

H. Is OAuth is suitable for API developers

The token provided by OAuth as shown in Figure 3, which represents the communication between consumer and service provider, is hard to predict as it will be random and too long when compared to password. It also future proofs the process of authentication because APIs already have the information about where to redirect when user detail is authenticated [15] i.e. in our case API knows where to redirect once the user enters the username and password of facebook or gmail account. OAuth deals with

- 1) Disable the sharing of passwords between web apps
- 2) Password storage on mobile devices

Therefore it is recommended to use OAuth for designing of APIs for mobile applications as well for web.

3. Existing System

There exist plenty of online resume generators with various resume templates, the drawback associated with these software are each field of resume should be filled up by user manually and also it needs more time and effort in order to create a good and accurate information.

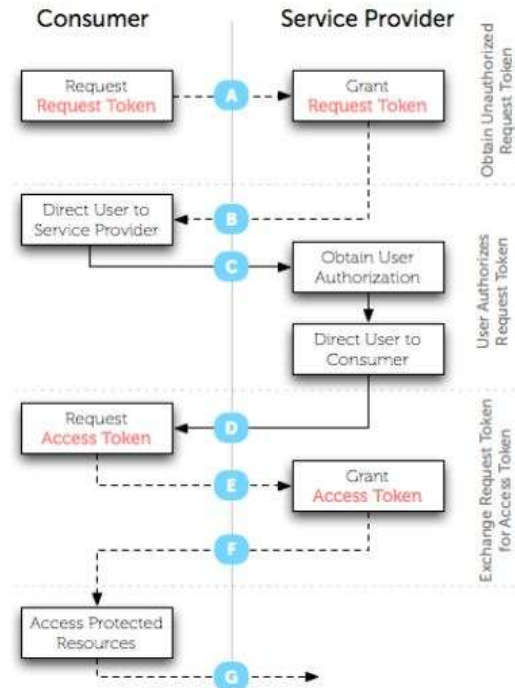


Figure 3: Communication between consumer and service provider using OAuth

4. Proposed System

There exist a SDK for Gmail and facebook applications that allows you to connect to their application and then allow you to access their respective API to obtain the protected resources from users' profile. Here, SDK [16] is a set of tools that is required to develop a software which enables you to create an application for any platform. Proposed system comprises of a component called authentication that supports the following cases,

- 1) New user : the application should redirect the user to registration page
- 2) Registered user :
 - a) Logged in to facebook/gmail accounts
 - b) Logged out to facebook/gmail account

Once the username and password entered by the user to grant access to client application is authenticated on client side as shown in Figure 4, access token will be provided to client generated by OAuth which is long and random, and this token will be sent to the server by the client which in response provides a session for client application to provide the required resource i.e. user information that is being protected by the server. This retrieved data is loaded to our application and placed in the respective fields, the fields that are not filled or the information that is not available on these social sites should be filled up by user manually to obtain complete and accurate resume. The data will be fetched from the servers of respective networking sites using API's of respective networking sites and data will available at server-side.

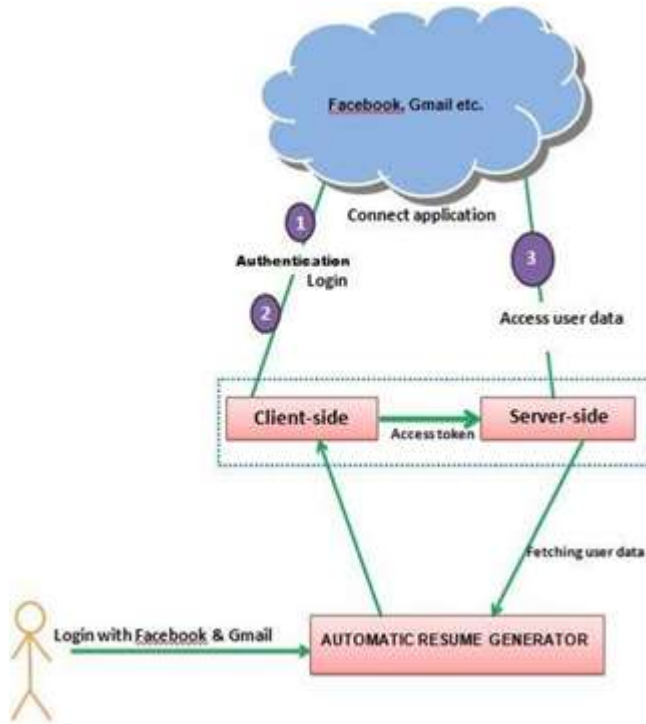


Figure 4: Architecture of the proposed system

5. Validation

The purpose of validation is to check whether the developed product meets all the requirements specified initially. While entering the project certain validations which are very much necessary for security is to be taken care. The solution used here is by using username and password. This is one of the methods used for validation for authentic user. Here particular log file information like name and password should be provided before we go for further processing. If sufficient information is not given it should not proceed for processing and this is validation that is very much required. The validation is done for the login of the two sides, if any user entered wrong username or password the appropriate message is displayed.

6. Evaluation

A. How does it compare with other systems

- 1) In the real world there are plenty of online websites available which serves as a resume generation process. In those online websites, user has to enter all the information manually.
- 2) Considering the above points, by using “Automatic Resume Generator” application we can reduce the manual entry as much as possible because our application fetches foot prints of the user from the social networking sites that are required for resume.

B. Qualitative assessment of performance

- 1) Best case – If the user has left more foot prints online then automatically generates draft –resume using less key - strokes.
- 2) Worst case -- If the user has less data for online presence, then generated draft-resume will be incomplete / blank and user has to enter manually i.e., use of more key-strokes.

7. Result

The proposed system works well for the people with more digital prints on social sites as it provides more information. For the person who is not a part of any social network the system works similar to existing systems i.e. to enter all the details manually. We say that the system works well with higher digital prints because if we consider an example of facebook, the information we can get from this site are, basic information like name, surname, mobile, DOB, gender. Education details like workplace, professional skills, university, secondary school. Activities like sports, music, and books etc. Family and relationship information. The user who has provided all these information will get an automated resume with most of the fields filled.

8. Conclusion

Since there is no need for developers to develop the application from scratch instead uses the APIs which requires less effort and fewer resources comparatively, can be developed independently without the need of team of resources which was impossible to do alone before without team resource. For example developers have combined Facebook and Gmail applications to develop new and useful applications. By making information available the idea of how to apply it is what becomes important. One more use of our application is, person who don't know how to create resume, they can use our application by entering their details and generates a resume. Presently we are accessing foot prints of user from only two social networking sites like Facebook and Gmail. In future it can be extended to many.

9. Acknowledgment

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