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INTELLIGENT AGENT BASED JOB SEARCH SYSTEM

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ABSTRACT:
Finding jobs that best suits the interests and skill set is quite a challenging task for the job seekers. The difficulties arise from not having proper knowledge on the organization's objective, their work culture and current job openings. Summer jobs are becoming year round side work. Even I'm rolling up my sleeves on the path of researching the best apps that will put to work on tasks, jobs and chores in one's extra time. We set the hours and the amount of time you want to carve out for this side work. An app for finding small paid work in your local area. It is for users who are in need of some quick cash and willing to do small works like repairing a computer, babysitting, mowing a lawn and other similar tasks.

Keywords:Job, Agent, rural, data base.

1. INTRODUCTION:

In today's global economy, the challenges associated with finding a suitable job is amplified by the technicalities associated with the Job search process which is seen by experience. Normally when we want to apply for a job, we search the newspapers; listen to radio and television broadcasts that may advertise vacancies and also job seekers register themselves with job site portals such as Academickeys.com, Monster.com, and Careerbuilder.com and so on. In general, employers do not register themselves with these mediums to provide full details of the job specifications but instead post important details on their own website only. Also with the growing number of online job search engines, making it almost impossible for job seekers to get an overview of all relevant positions [0]. Therefore we do not always get to know all the vacancies, the nature and status of the employer to decide if this is the sort of job that is being sought for. Also at times we get flattered by the job providers profile but don't get information about the rating of the company by the existing or past employee in terms of salary and so. Taking all these into consideration we propose to develop an intelligent agent (instead of a human agent) to perform the same search operations by interacting with the employer and job search coordinator agents. We propose to use an agent based utility concept to provide suitability profiling based on configurable factors such as distance from work, days and shift requirements, work environment, safety and hazard considerations, remuneration, skill-set, etc.

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The purpose of developing an Online Job Search System comes from my idea to make the job search efficient and handy. It helps the job seekers to search for current vacancies at a single point. Therefore, we can say that Online Job Search Portal act as a bridge of communication between job providers and job seekers. With the evolution of technology and internet being the main source of information for the Job Seekers, these job systems and have become an excellent method to reach wide range of audience. Initially, when I am unaware of these job portals or systems, I used to do research about companies and their technology stack through their respective websites and apply if the job responsibilities match my interests. This requires lots of effort and time. However, later when I realized the importance of job search systems, I am able to access jobs in preferred place, locations that I might not otherwise have learned.

Information: Nagavarappadu is a village in Krishna district of the Indian state of Andhra Pradesh. It is located in Unguturu mandal of Nuzvidu revenue division. It is a part of Andhra Pradesh Capital Region. It is the area where it is full of fields lakes etc. The village Nagavarappadu is populated with total of 1007 people of which some will be performing agriculture works for daily living and others who are job less.

Purpose of visit: On 14th May 2019, we team members along with our guide have visited the village named Nagavarappadu. This village is located around the outskirts of Vijayawada. This visit was undertaken with he aim of investigating the technical problems, unemployment and lack of facilities prevailing in rural areas. In this regard we have met children, school going children, farmers, school principal, people having some jobs, house hold women etc.

Problem statement: Our main aim is to provide an easy going application for people who are in search for small paid work in our local area. It is for users who are in need of some quick cash and willing to do small works.

Objective: To understand the problems and struggle faced by the rural people in their daily life and try to relate the solution to their problems by applying the basic understanding of our engineering knowledge.

2. LITERATURE SURVEY

In this paper they introduced a prototype job portal which uses semantically annotated job offers and applicants. In their opinion, using Semantic Web technologies substantially increase market transparency, lower transaction costs and speed up the procurement process. How-ever adding semantics is not a panacea for everything. We identify some outstanding problems in job search using the system and outline how the technique of query approximation can be the basis for a solution. Through an Industry-Research co-operation we are extending the prototype with these semantic techniques to demonstrate a more accurate job search. [0]

The advent of software agents gave rise too much discussion of just what such an agent is, and of how they differ from programs in general. Here we propose a formal definition of an autonomous agent which clearly distinguishes a software agent from just any program. We also offer the beginnings of a natural kinds taxonomy of autonomous agents, and discuss possibilities for further classification. Finally, we discuss subagents and multi-agent systems.

Intelligent agents are a new paradigm for developing software applications. More than this, agent-based computing has been hailed as ‘the next significant breakthrough in software development ’(Sargent, 1992), and ‘the new revolution in software ’(Ovum, 1994). Currently, agents are the focus of intense interest on the part of many subfields of computer science and artificial intelligence. Agents are being used in an increasingly wide variety of applications,

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ranging from comparatively small systems such as email filters to large, open, complex, mission critical systems such as air traffic control. At first sight, it may appear that such extremely different types of system can have little in common. And yet this is not the case: in both, the key abstraction used is that of an agent our aim in this article is to help the reader to understand why agent technology is seen as a fundamentally important new tool for building such a wide array of systems. More precisely, our aims are five-fold:

• to introduce the reader to the concept of an agent and agent-based systems.

• to help the reader to recognize the domain characteristics that indicate the appropriateness of an agent-based solution.

• to introduce the main application areas in which agent technology has been successfully deployed to date.

• to identify the main obstacles that lie in the way of the agent system developer.

Agents and agent systems are becoming more and more important in the development of a variety of fields such as ubiquitous computing, ambient intelligence, autonomous computing, intelligent systems and intelligent robotics. The need for improvement of our basic knowledge on agents is very essential. We take a systematic approach and present extended classification of artificial agents which can be useful for understanding of what artificial agents are and what they can be in the future. The aim of this classification is to give us insights in what kind of agents can be created and what type of problems demand a specific kind of agents for their solution.

Functional and non functional requirements: Based on the Job Search System application's requirements, I have made the choice of frameworks to be used. This application primarily consists of an android application that displays the jobs that are available and applied by the applicants. This android application is developed by using the Native Android Framework: Used for building an android application, Google Maps SDK: Used for integrating the application with Google maps, Firebase: Used for the mobile clients without any extensive backend programming.

EXISTING SYSTEM:

The existing system for job recruitment includes traditional methods like Employment agencies, advertising through newspapers, televisions and radios, college fairs etc., which are too slow and stressful. With the advancement of internet, jobseekers rely on the online job portals, which make the job search efficient. Again, most of these are limited to the web/desktop applications, which requires jobseekers to have a laptop or desktop connected to internet and is not handy. And disadvantages include: Time Consuming, Stressful, and Challenging**.**

PROPOSED SYSTEM:

Proposed System: Job Search System is a Java-based android application that provides functionalities of recruitment on portable devices like Android based smart phones/tablets. The applications do not require internet to perform the desired functionalities. Advantages: Cost and Time efficient, portable.

Purpose of the System: Job Search System is developed to provide an effective means for the employers to post job openings with required qualification to have a better penetration into the job market and jobseekers to find out the information regarding the current openings in the organization or in the market. In addition, job seekers can view the reviews provided by the applicants to make necessary improvements in their system if

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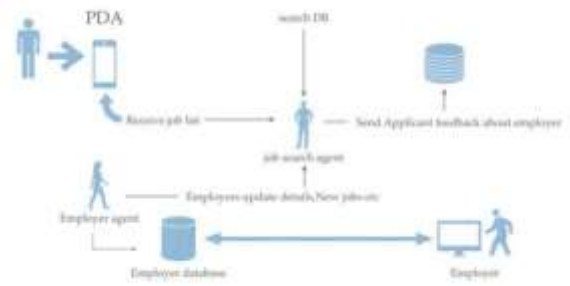
needed. Job search System is an android application providing flexibility for the users.



3. METHODOLOGY

The project is finished in 3 basic steps:

1. login/signup
2. If role is Job Provider:- choose location and post the job
3. If role is Job Seeker:- choose the job needed

Advantages: Accuracy, Classification

Disadvantages: Processing time

Job Search Algorithm: Job-search theory attempts to propose strategies for making optimal employment decisions by considering factors that determine individual's demands and their prospect for finding an acceptable job offers.

The variables to be considered are: Industry, Occupation, Education, Job Type (Full-time, part-time, contract, etc.), Career Level (amount of experience obtained versus what is required for the job),Salary and Allowances (salary and all additional benefits).

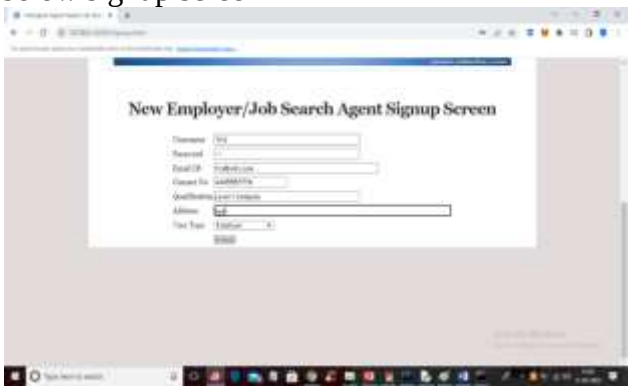
OPERATION:

To run project first create database in MYSQL by copying content from DB.txt file and then paste in MYSQL console

Now double click on 'runServer.bat' file to start python DJANGO server and get below screen

In above screen DJANGO server started and now open browser and enter URL as http://127.0.0.1:8000/index.html and press enter key to get below page

In above screen click on 'Signup Here' link to get below signup screen



In above screen company is entering signup details and press button to get below screen

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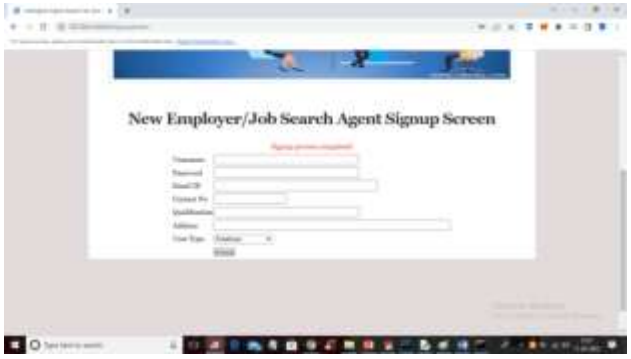
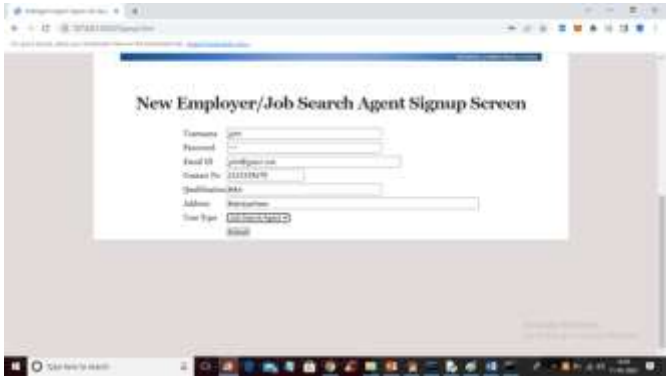


In above Screen Company signup process completed and now signup one application like below screen

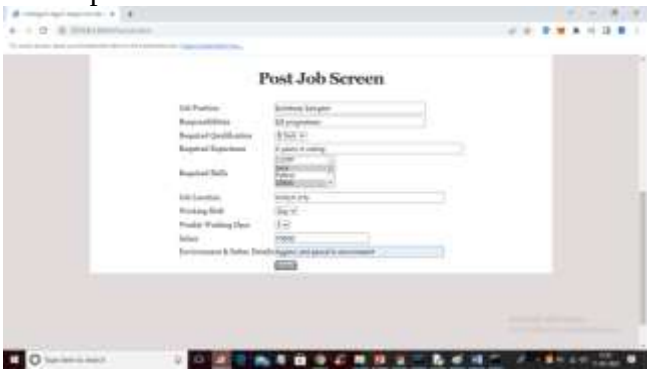
In above screen company is login and after login will get below screen



In above screen job applicant is signing up and then click on 'Submit' button to get below output

In above screen company can click on 'Post Jobs' link to post the new JOB

In above screen applicant signup completed and now click on 'Login Here' link to login as company



In above screen company is posting the job and now press button to get below output

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In above screen job details added and now click on 'Activate/Deactivate Job' link to get list of jobs posted by company and then activate or deactivate

In above screen company can click on 'Click Here' link to either activate or deactivate JOB. Now logout and login as 'job applicant'

In above screen job applicant is login and after login will get below screen

For above search we got below fuzzy search result

Similarly company will post JOBS and job seekers will search jobs.

CONCLUSION

Job Search is a very involved process that could require hours of interaction with different search sites, applications, human agents, etc. The developed system intelligently anticipates the needs of the user and makes intelligent decisions based on fuzzy preference rules and dynamically make location, salary markup and markdown, and allowances choices that are perceived as beneficial to the user. This is evident in the results presented in the form of scenarios and supporting screenshots. The system could be extended to include a secure application process where the applicant's experience and education is verified possibly by including biometric data along with the job application details which has been published elsewhere. In addition the job search process could enhance the calculation of utility by including risk factors of success in choosing one job over another. This could enhance the probability of applying for the job that would be most suitable for an applicant on many levels.

This project fulfils the primary requirements of the job seekers and employers. It can be extended in several ways. We can provide recommendations and email updates for new job postings based on the job seeker's search history. Since, the job seekers might be interested in building a strong Resume, we can provide tips and information for the same. We can also provide templates for building the Resumes which might interest most applicants. The mobile application is developed fulfilling the

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functionalities of job seeker, it can be extended to support functionalities of Employer as well.

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