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FUTUREDOOR Career Guidance Assistant Using Machine Learning

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Abstract : In this modern world the internet can expand your job search by putting thousands of recruitments ads at your fingertips. The biggest challenge that careers aspirants face is passing interview. For every professional, an interview is like a continuous trip and procedure. A well-prepared CV and effective interview preparation are both necessary to ace the interview and land the dream job. The need for this system is as required stuff were on different platforms. The user has to waste half of the time to gather all these things. Even current many interview preparation platforms have reached certain level of maturity, their success is limited because of the problems users were facing. In this project we are providing all material that required for each stage of interview without any subscription. We guide students from resume building process to HR interview preparation. If any queries student face for that we are provided problem solver chatbot to resolve query while facing in preparation, handling system or any demanded content student want. So through this project student don't have to surf on different website for different topic. The main aim of the creation of the system is to assemble all required material for interview preparation at one site, also saves the time of the user and also solve interview related problem that some website are fail to solve it. This website will greatly help the user during their placement journey.

IndexTerms - **Interview Protocols,Research Interviews, Query Guider, Problem solving ,Resume builder , Online examination system**

I. INTRODUCTION

The biggest challenge that careers aspirants face is passing interview. For most any professional, an interviews is like a journey or process that never ends. A well-prepared résumé and effective interview preparation are two essential components needed to ace an interview and land your ideal job.

If you have a knowledge of good reasoning, vocabulary and aptitude skills, getting past the written tests of your particular career so need not be a nerve-racking affair interviews rounds are the stepping steps for the jobs and most of the people get rejected at this step. So there is need for interview preparation website.

Many websites are there for interview preparation but as we move toward advanced or for more details, they required subscription. There are some websites that having individual module as a feature like some for resume builder and aptitude related only. There is need of only one system for instead of many websites user can refer only one system to get all the stuff at one place. The user can spend their time on actual preparation rather than spending time on surfing for the required stuff. Based on our research we find some flaws in present portals.so our goal is to track his/her placement journey till they get their dream job.

The driving force behind this system is the belief that preparation for interviews is the key to landing a job. By being well-prepared, you'll feel more at ease during interviews and project the qualities that prospective employers always look for in the ideal candidate. Another motivation is the shortcomings of the current preparation portals.As we were having four main modules is going to track the placement journey. We were merging all the modules which in presently is available on different sites but we are adding new features. So, it is a waste of time to gather all the information for the preparation from the different sites. Our system will also save the time of the user The new feature in our system is Chatbot (virtual guide) for helping new users to become familiar with the platform and to solve the interview related queries and we also provide Resume parser in Resume Builder through this user can parse their resume and generate score which will help for their own improvement

In this system, we will be using the web as a platform and develop using web technologies combined with natural language processing to make the system better and more useful. This system will make users' lives much easier by providing all the features on the same platform.

This system effects all the user wo were going through there placements and struggling and preparing for their dream job. As the present system for particular phase the user has to move towards the different site. This system solves the problem by providing the preparation stuff of each phase so no need to move towards the different site. We have added the interactive feature that is CHATBOT by which user will get comfortable to the platform.Also, the user doesn't have to pay to access the portal information its free of cost. So, by identifying the needs of the user we have made the struggling and stressful placement journey easier. The major goal of this project is to greatly simplify the lives of consumers by offering all the functions on a single platform.We identify user need such a website that they can go through it within less time and cover all topics, so they don't have to surf on different website for different topic. The main aim of the creation of the system is to assemble all required material for interview preparation at one site, also saves

the time of the user. This website will greatly help the user during their placement journey. The scope of the project is it is useful for the learning and for the interview preparation. This system will deliver the 4 modules that is Resume, Aptitude, interview and chatbot. Which will provide the user with all the required information for the interviews.

In this system we were having three types of users that is visitor, members and the admin. The visitor can go through the information of the portal, admin can add or delete the menu and the information provided, and the members were the user who were preparing for the interviews accessing the portal information and they are check their status of preparation through score bar.

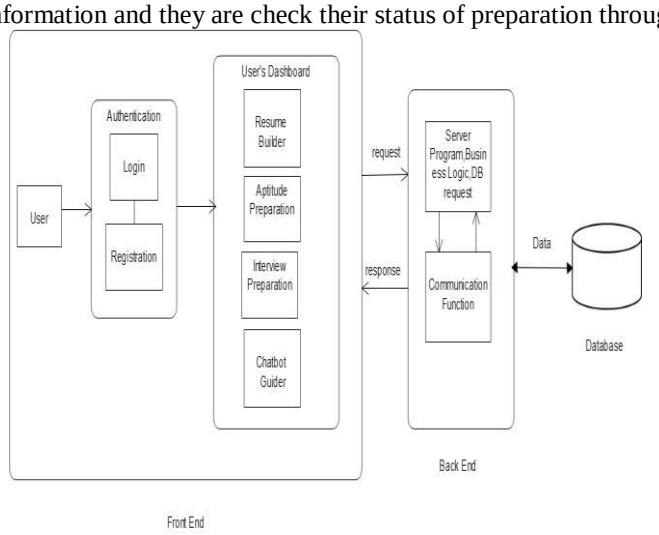


Figure 1. System Architecture

II. PROPOSED WORK

2.1.Resume Builder

Through this system user can create and edit resume easily by selecting resume template user can create resume.

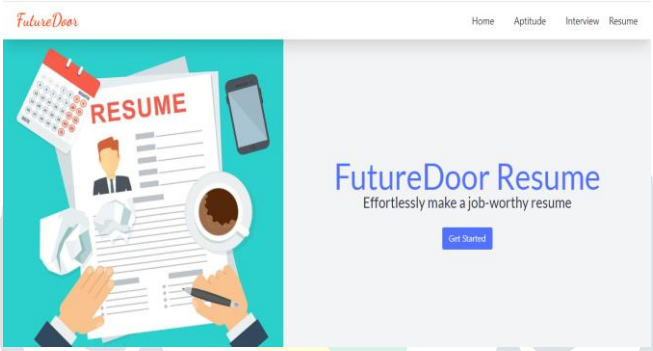


Fig 1. Resume builder home page

After choosing template user have to fill all necessary information before that user may also change layout of template for example dividing data into two column or in single form only like that.

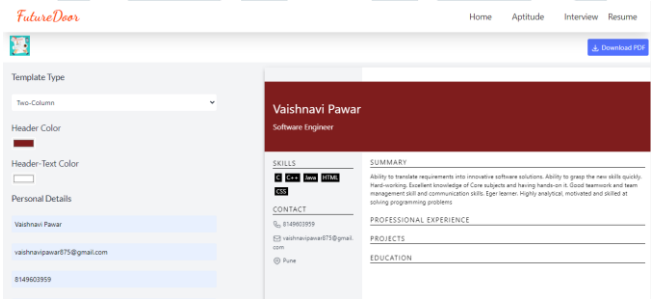


Fig 2. Build resume through template

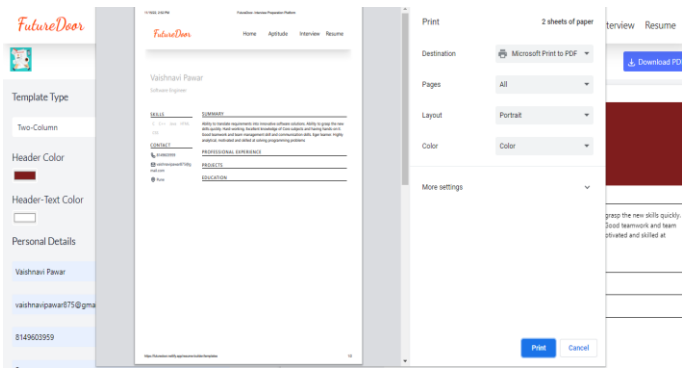


Fig 3. Download Resume

After filled all information user can save their resume in pdf format or also upload on drive

The suggested system's resume builder application automates resume generation; it just collects information from users via an easy-to-use interface and produces a resume in pdf format. The prior way of making resumes required manual work. The proposed system creates resumes using a structure that is generally accepted, whereas users must manually adhere to a standard, which can be a challenging effort. While human resume creation requires a lot of time, the proposed technology creates resumes instantly. Editing is relatively easy and user-friendly in the proposed methods, but manually creating a resume is a challenging and time-consuming operation.

2.2. Aptitude Guider

A multiple-choice question (MCQ) consists of the following: - Distractors, which are improper substitutes for the key We refer to the question-answer pairs that our system, the Aptitude Guider generates candidate MCQs as stem-key pairs from a given, domain-neutral piece of input text. We utilise DBpedia, a Semantic Web tool, to contribute to the production of distractors. Since DBpedia represents structured information taken from Wikipedia using the Resource Description Framework data model

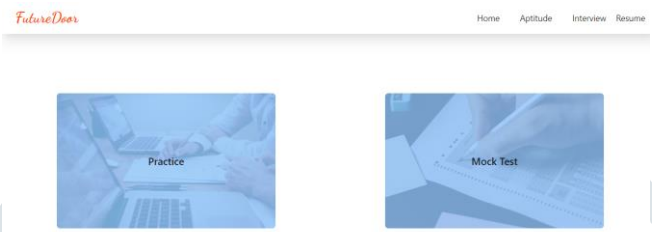


Fig 4.Aptitude guider home page

Using this website user can practice topic wise aptitude and also give mock test to check ability.FUTUREDOOR provide company wise aptitude question to crack first round of interview process

Fig 5 Company wise aptitude questions

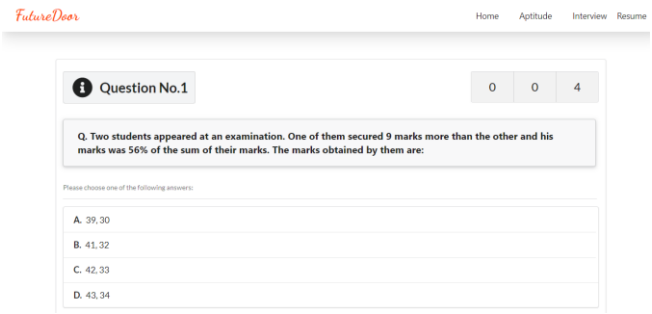
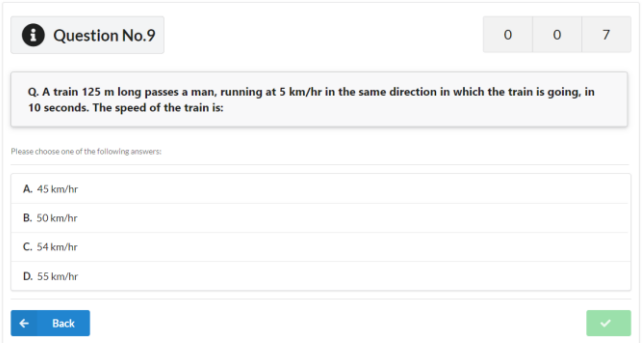


Fig 6 Practice test

In practice section next question not display until we give correct answer and at right corner it also shows how much time we take to answer the question so user can manage their time



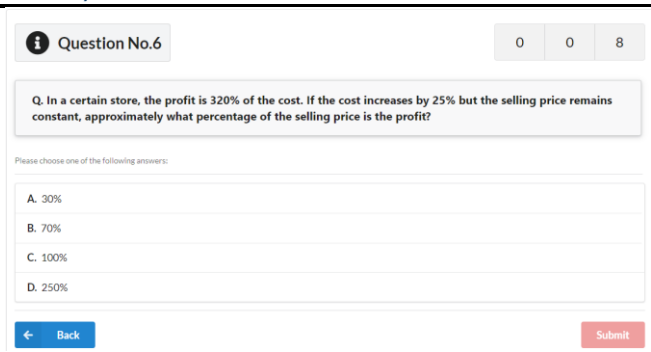


Fig 7 Result of practice test

Fig 8 Mock test page

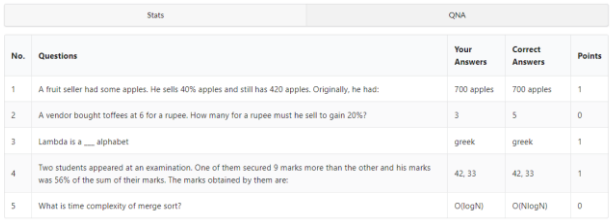


Fig 9 Mock test result page through table format

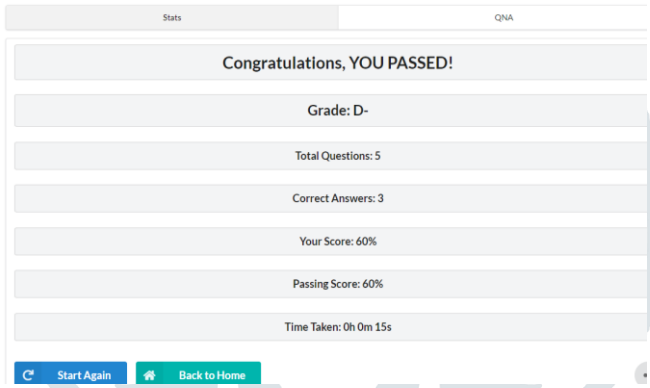


Fig 10 Mock test result page through grade format

In mock test section user may practice aptitude question and result display after submitted all questions.Result will be in the form of table and in form of grade

2.3.Problem Solver Chatbot – Using NLP

Natural Language Processing is referred to as NLP. You can aid a machine in comprehending spoken language and human speech by using NLP technology. Computational linguistics, or the rule-based modelling of spoken human language, is combined with cognitive algorithms such as statistical, machine, and deep learning algorithms in natural language processing, or NLP. These technologies work together to enable the chatbots and voice assistants that you may utilise on a daily basis.
Steps in NLP

- Tokenization
- Stemming
- Lemmatization
- Part-of-speech (POS) tagging
- Named entity recognition
- Chunking

1. **Tokenization**: We break down the text into **tokens**. Check the example below to see how this is done.

   Text: The cat sat on the bed. **Tokens:** The, cat, sat, on, the, bed

2. **Stemming**: We remove the prefixes and suffixes to obtain the root word. Check the example below to see how it's done.

List of words: Affection, Affects, Affecting, Affected, Affecting

Root word: Affect

3. **Lemmatization**: We group together different inflected forms of a word into a base word called **lemma**. Check the example below how it's done.

   List of words: going, gone, went

   Lemma: go

4. **POS tagging**: We identify the parts of speech for different tokens. Check the example below to see how it's done.

   Sentence: The dog killed the bat.

   Parts of speech: Definite article, noun, verb, definite article, noun.

5. **Named entity recognition**: We classify named entities mentioned in the text into categories such as "People," "Locations," "Organizations," and so on. Check the example below to see how it's done.

   Text: Google CEO Sundar Pichai resides in New York.
   Named entity recognition:

   Google — Organization

   Sundar Pichai — Person

   New York — Location

6. **Chunking**: We pick up individual pieces of information and group them into bigger pieces.

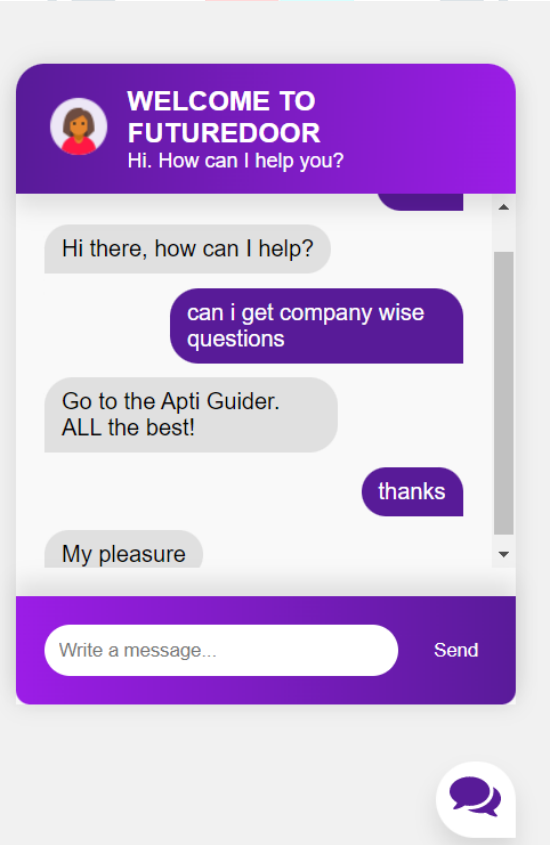


Fig 11. Chatbot Solver UI page

```
def tokenize(sentence):
    """
    split sentence into array of words/tokens
    a token can be a word or punctuation character, or number
    """
    return nltk.word_tokenize(sentence)
```

Fig 12 Tokenization code

```
    return stemmer.stem(word.lower())
```

Fig 13 Stemming code

```
# stem each word
sentence_words = [stem(word) for word in tokenized_sentence]
# initialize bag with 0 for each word
bag = np.zeros(len(words), dtype=np.float32)
for idx, w in enumerate(words):
    if w in sentence_words:
        bag[idx] = 1

return bag
```

Fig 14 Bag of words code

3.4.Interview Coder

Through this Interview Coder section user can practice company wise coding question

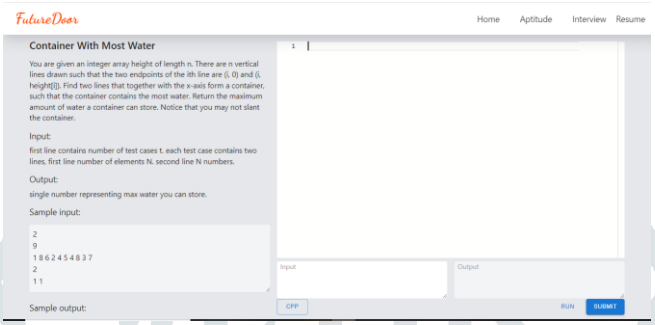


Fig 15 Coding panel

In left section question explain in detail with sample input and output and in right side coding panel is provided, at bottom user may have different language option.After submitting code at backend test cases get checked and it will display result.

III. TECHNOLOGY USED

1.React JS

The React.js framework is an open-source JavaScript framework and library developed by Facebook. It's used for constructing interactive user interfaces and online apps fast and efficiently with substantially less code than you would with vanilla JavaScript.
By building reusable components—which you may conceive of as separate Lego blocks—you design your applications with React. These elements are separate parts of a final interface that, when put together, make up the full user interface for the application.
In our system we used React JS as a frontend for more interactive UI and make our system user-friendly.

2.Node JS

JavaScript code can be run in the open source, cross-platform runtime environment known as Node.js (Node). Developers can utilise JavaScript for both client-side and server-side code without having to learn another language because Node is widely used for server-side programming. Node is occasionally described as a programming language or a framework for software development, however neither of those descriptions is accurate; it is only a JavaScript runtime.
In our system we use Node JS as a backend that handle and process all server side query and send response to client.

3.Firebase

Developers can create iOS, Android, and Web apps using the Google-sponsored application development platform known as Firebase. Tools are available from Firebase for monitoring analytics, reporting and resolving app errors, as well as developing marketing and product experiments.
A backend-as-a-service is Firebase (Baas). It offers a range of tools and services to developers so they can create high-quality apps, expand their user base, and make money. It is built using Google's technical framework.
Here we use firebase to handle database query

4.dbpedia

Crowdsourcing is used by the community project DBpedia to extract structured material from the data generated by other Wikimedia projects. The open knowledge graph (OKG) on the Web is a publicly available version of this organised data. A knowledge graph is a specific kind of database that provides a mechanism to collect, organise, distribute, search, and use information. It maintains knowledge in a machine-readable format. Google generates the knowledge cards throughout searches using similar methods

CONCLUSION

We conclude that user need such a website that they can go through it within less time and cover all topics , so they don't have to surf on different website for different topic. The main aim of the creation of the system is to assemble all required material for interview preparation at one site, also saves the time of the user and also solve interview related problem that some website is fail to solve it. This website will greatly help the user during their placement journey.

FUTURE WORK

Students are struggle to find teammates for project. On future we are provided platform to students to search their partners for project according to their skills through this website and also, we are providing platform for their communication. So, through this website we helped developers connect with each other and build projects together

I. ACKNOWLEDGMENT

Based on our research we conclude that user need such a website that they can go through it within less time and cover all topics , so they don't have to surf on different website for different topic. The main aim of the creation of the system is to assemble all required material for interview preparation at one site, also saves the time of the user and also solve interview related problem that some website are fail to solve it. So we have implemented career guidance assistant portal which help students for getting their dream job. This assistant will greatly help the user during their placement journey.

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