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NIMBLY APPLICATION TO ENHANCE THE CURRENT LEVELS OF BASIC EDUCATION

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Abstract :Our idea is to enhance the current levels of basic Education System and provide adequate knowledge into people in order to make a way for younger generation to host our economy. In today's current scenario where the world is updated by various technologies. Our application is to make the students to learn in a more effective way and to create an impact on students. The automatic talking BOT technique will be implemented, so that the user can interact with it and improve his vocabulary, accent and speaking skills. This virtual machine(BOT) will be modified according to the different domains. The main goal of this application is to achieve the learning environment by creating the application in an interactive and game-like perspective using Native Android[4]. This solution gives an interface for both playing and learning simultaneously. So, that the students will be automatically attracted to this way of learning. It contains different levels of a game like modules with interactive user environment where the users can interact with each other, share knowledge, and can suggest ideas. The essence of competent levels is provided to keep the user involved. This solution is designed in a way in order to keep the user on the stack of learning every day by sponsoring reliable environment.
Keywords — Games, Bot, Education, Skills, Interact.

1. INTRODUCTION

Here we came with an idea of implementing various levels in a gaming manner and with automated virtual bots to make the application[1] more effective. Because of this perspective based responsive system the learning will be in an effective and entertained way without getting bored. Each levels will be designed in a interactive manner[2] and bot system will be added according to that. We can use this feature for training and updating your speaking skills. Coming to the game[3], it sounds in an interesting way to make the people work curiously on various skills like learning, writing, vocabulary etc. So, almost all the aspects for the particular domain will be wrapped in the same application. Even any kind of domain can be constructed on this application and the levels can be created according to that. As of now this will be useful for kids and school students[1] for their basic education and further flexibility for colleges can be improved in later stages.

2. WORKING

The main working is based on basic gaming levels and automated virtual system.
Basic Gaming Levels:
Various game likes levels will be made to be processed effectively.

2.1 Level one:

Starting with the basic time zoned game like perspective. That is, the particular range of time will be provided, and within the stipulated time the user will be asked to type as much as words they can, which starts in a particular given alphabet.
Then, when the given time is over. The application immediately moves to the next part to display the count of the words which they have typed within the time[8]. The validation will be made for both counting the words and checking the starting alphabet.

2.2 Level two:

Pronounce session. The Text-To-Speech is used here. The words will be displayed with respective meanings and this TTS icon can be used by the user to hear the fluency and pronunciation of those words .So that the user can know the meaning and also the fluency. Various words will be provided according to the levels and domains. An optional sub level will be constructed under this in order to practice more difficult words[8]. So that the user can even know those words easily and can update their skills.

2.3 Level three:

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By using the same TTS, the next level is improved. Here the TTS icon will pronounce the words. Then the user should hear it and type the observed voice into letters. This will develop them in their spelling and listening part. After the user typed, the application will read the string and display whether it is correct or wrong by validating it. The timings will be provided. If, the user types the maximum number of words correctly[8]. They can unlock the interesting facts and updates sessions.
The facts and the current updates of the particular domain that the user selected will be popped up after completing each levels. This makes them to get new information and also it helps in gaining knowledge out of the concept.

2.4 Level four:
Match it. In the above levels the users will be trained in the spelling and meaning part. Now it's time to analyze how far they have learnt. Certain words will be provided and the user should select whether the given words are synonym or antonym to each other. They will be evaluated and stars are gained according to that. Maximum number of stars should be gained to satisfy the criteria and unlock the next levels[6].

2.5 Further levels:
The further levels will be created using animations. Now levels will make more interesting like the particular exercises will be provided and simultaneously the animated human will be displayed like jumping on each step to reach the goal, when the user responds with the correct answer. Then the animated object will jump up according to it. If the user makes mistakes, that object will fall down and the user should redo the level. So, as he has to give continuous correct answers, in order to make the object jumps higher and reaches the goal. This is one way to attract the kids, and to get tempted to learn the concept with ease. Instead of getting tempted for only entertainment based games[5], they can use this basic games to update their knowledge in an entertained manner. And more levels will be added with innovative ideas and improved for schools[7] and colleges[7] education system.

2.6 Automated Bot Technique:
Through this technique, the user can interact with the bot and it responds to them according to the prefunctioneddata[10]. This will be implemented in using various aspects.

- Implementation Technique One:

Here the particular comprehension will be provided according to the domains in one of the level. The user will be instructed to read it and the virtual machine takes the user's voice as another data and analyse it .The bot will be prefunctioned with various inputs using the storage space in the google cloud. Now, when the user spells the words wrongly or make mistakes in pronunciation, it will automatically captures the user's voice, recognize it and interacts with the user to correct them.

- Implementation Technique Two:

This technique will be an interactive system, as the automated system will be implemented in such a way to communicate with the user in the particular session. So that the user and the bot can interact with each other and if the user gives irrelevant response, it is designed in the way to give suggestion and makes the user trained in the speaking skill[9]. This can be provided for various domains of education.
Example: Interview.
If a candidate should prepare for an interview, they can use this level, where the important interview questions will be predefined with accurate answers in the responsive system[6] and if user starts their session it will immediately delivers its questions and reads the user's voice and responds to the user with the already trained agent in the Dialogue flow.
Benefits:
This scenario will be presented in the way that bot is the interviewer and the users can play the role of a candidate and can be used to overcome their fear and anxiety by practicing through this system.

3. ARCHITECTURE

The above architecture describes the automated bot's back-end work of our application. The user input goes to cloud and cloud function validates the input and send it to dialogue flow , where the pre-trained bot replies with the given input , Also the dialogue flow is specially designed to reply with particular answers for the users input, it works with the AI and ML[10]. So the bot functions very smoothly and then the firebase validates and stores the output and input given by the user, and finally it leaves a reply from the bot as shown in the figure-1. Main importance is that these backend process happens in seconds and virtual bot replies instantly, so user will be more interactive with this module.

4. VALIDATION

1. To count the number of words the user typed in the given time,

```
fori→ len do,
wordCount
```

2. To identify the spelling mistakes and check whether all words are starting with the given word,

```
forSuggestions Info anArg0→ argg // Returned suggestions are contained in SuggestionsInfo
        sb.append→ argg.getSuggestion(i);
Where,
        wordCount →  gets and stores the validation in database.
        getSuggestion → gives the suggestion for the wrong word.
```

3. To validate the typed words are correct or not,

```
if str2.equals →  "word"
        text.setText→ "☺ Correct";
        count++
elsedo,
        text.setText→ "× Wrong\nCorrectWord";
        count++
where,
text →  it dynamically changes the content to get better UI in publishing the results.
```

4. If user matches the word correctly then,

```
if count >= default,
        animation.playAnimation()
else do,
        repeat.
where,
        count →  correct matches.
        repeat →  match next pair of words.
```

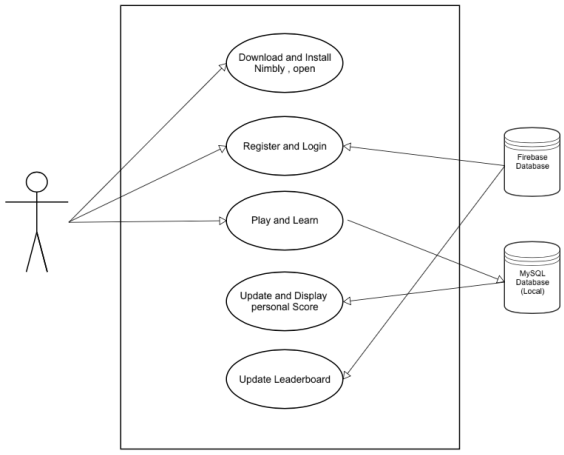

Figure-2 Use-Case diagram

5. RELATED WORK

5.1 English grammar ultimate - Application:

This application initially gives the theory concept to the user and after learning it, the user must attend the quiz session which provides questions in accordance to the previous context.This type of application covers almost all the basic grammar concept in a theoretical way and minimal knowledge testing. The strategy cannot be effective for the user who doesn't have any prior knowledge about the concept. This contradicts with the agenda of the solution, hence effective and interesting

education goal is not satisfied. In today's growing world, mindset of the user is also changed. So the basic challenge is to provide adequate and satisfying content in a interactive way.

5.2 Sling App:

This application concentrates on user's speaking ability to communicate with ease. It provides as interactive interface with the user. It is achieved by using chatting scenario where the user is made to interact with the predefined module where it will evaluate the user's current knowledge and give more suggestions to improve their fluency, pronunciation and grammatical mistakes.

5.3 Elsa speak:

This application helps users in improving English-speaking skills. It provides a virtual assistant to the user with whom the user can interact with and learn. It identifies pronunciation mistakes made by the user while speaking and helps them to correct it by giving them appropriate hints and suggestions. It gives feedback[4] about the user's speaking ability after each session and helps the lip sync of every incorrect word spelled by the user.

Many applications and websites provides different learning techniques. This solution is basically differs by understanding user needs and producing their content that is required rather not just mere questions and answers. This goal is achieved by using artificial intelligence and cognitive science. Rather than focusing on monotonous learning system, this solution implements the process on the user's perspective. This could help in achieving and enhancing the education system into a better level. By analysing current educational standard and other innovative techniques used in previous methodology, this application is invented to satisfy the user requirements irrespective of their age group.

6. CONCLUSION

In this paper, we have presented a solution to improve the basic education level among the students which comes with an interesting gaming way and interactive virtual assistant. The whole paper deals with how the idea is constructed and made into a working model. This implementation will be helpful to the user throughout the course of learning and keeping their interest levels at the bay. Not only schools and colleges, this application can be used by all kind of people who have interest to update their skills.

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