



INTELLIGENT PROGRAMMING LEARNING SYSTEM

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ABSTRACT

The project is based on artificial intelligence concepts. There are plenty of options available outside to learn programming. There are concepts given and one can study them. But what if any question arises in his/her mind and he want to ask it. The person needs to find some blog or some other platform where he can ask his/her question. In our project we will be implementing Artificial Intelligence that will be able to understand the question asked by the user, analyze it, and try to generate an answer using its database. If it cannot generate the answer then it will also be able to ask the same question to the expert system that will be some another person who is really expert in that programming language. This will create a community in programming world which will be able to make them communicate in real time. The actual motive behind this project is to make a teaching learning process more convenient for students who want to personalize their programming skills. This will provide a student to learn anytime, anywhere and without any hesitation students can get answers to any question the want to ask.

1.Introduction

With an increasing number of new technologies and an expanding global population, self-studying is on the rise. Education is no longer confined to just the classroom, also some may argue that it does not meet intellectual needs of individuals in such an interconnected society. Learning a new programming language for career advancement can occur from the comfort of

answer then it will also be able to ask the same question to the expert system that will be some another person who is really expert in that programming language. This will create a community in programming world which will be able to make them communicate in real time. The Current coaching classes is costly and time limited but our system is cost efficient and one can learn language in his comfortable place and time. Our system is portable as one can carry anywhere anytime. Main moto of our system is to teach one system and that one system will teach many user.

2. Literature Review

Traditional Classroom learning is nowadays being joined by online learning. As there are some advantages of learning in classrooms, also there are some advantages of learning online. Following are some advantages of learning online or self-learning which have been observed in many students in few past years.

1. Career advancement and hobbies Studying online gives you more flexibility. You can work and fit your work schedule (and your hobbies) around your coursework more easily; even more so if you are taking an asynchronous class: an online class where you don't have to log in at a specific time for a live session but you can study and interact with your instructor and your fellow classmates at your own pace through, for example, the discussion forum. In a survey conducted by The Learning House, 44% of online students reported improvements in their employment standing, for example by obtaining a full-time job within 12 months of graduation, and 45% reported a salary increase.

your home, on your own time, and at your own place. “Intelligent Programming Learning System” In our project we will be implementing Artificial Intelligence that will be able to understand the question asked by the user, analyze it, and try to generate an answer using its database. If it cannot generate the

more study time sitting on your couch, the sound of a crackling fireplace in the background. You no longer have to worry about driving in the snowstorm and missing an important class!

3. Lower costs and debts Studying online means that you pay the tuition fee, possibly book supplies, an online application fee, and few other items. You don't, however, incur the costs of housing (which can range from \$10,000 to \$12,000 per year) and transportation, which translates to lower debts and more savings 2

4. Self-discipline and responsibility Who says that having to be more self-disciplined is a disadvantage? It is true that studying online requires more self-motivation and time-management skills, because you will spend a lot of time on your own without someone physically close to keep you focused on deadlines. Look at it this way: your online course will not only teach you geology or poetry, it will also help you become more self-motivated, a trait that will make you stand out in the workplace and beyond. It will look great on your resume.

5. choicer of course topics Lets face it, when thinking about what to study, besides for interest and career opportunities, where to study is also a deciding factor. This may limit the choice of subjects or courses to take. Studying online at your own convenience allows you to no longer worry about class location when choosing what to learn next. By taking an online course, you can really focus on the subject you are interested in and choose from the variety of online courses and programs.

Proposed Plan

“Intelligent Programming Learning System” is an AI based teaching and learning system which will be able to communicate via speech recognition and will be able to process question

2. Flexible schedule and environment By studying online, you choose your own learning environment that works best for your needs: be it your bedroom, your study, the caf across the street, or your local gym, listening to your instructors lecture pod-cast as you run on the treadmill. Isn't that awesome? Taking an online course also means that you don't have to commute to class, which means less time spent on the bus and

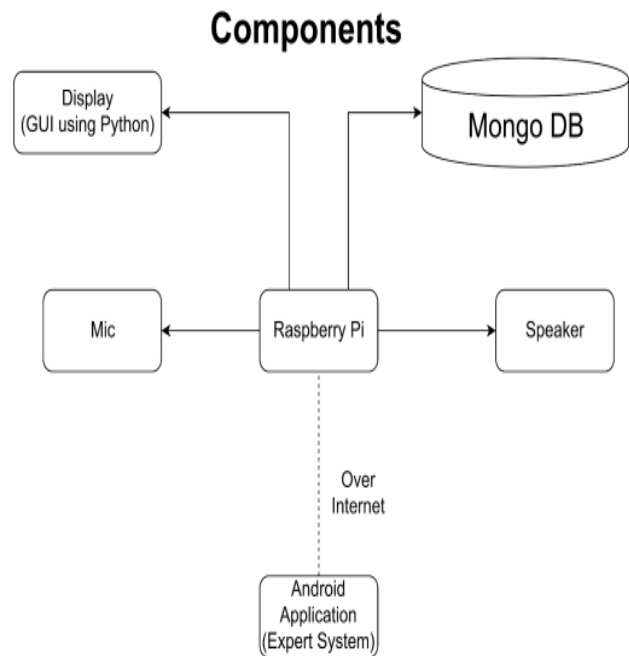


Fig. Architecture diagram

Mongo DB Database Module:

MongoDB is a cross-platform, document-oriented database that provides, high performance, high availability, and easy scalability.

In this module, the complete database of project will be stored. This will majorly be divided into two types i.e. the fixed knowledge and the knowledge that will be learned by expert system or while teaching process.

Raspberry pi Module:

This is a standalone computer system module which can act as complete computer. In this project Raspberry Pi 3 module will be used as a central system. It will also contain the core logic about language processing.

Python UI Module:

The UI will be completely based on Python Tkinter library. The UI will be set on raspberry pi module, which can be connected to any display.

asked by user and generate answers either using by database or by expert system.

Natural-language processing:

Natural language processing (NLP) is the ability of a computer program to understand human language as it is spoken. NLP is a component of artificial intelligence (AI). NLP are based on deep learning, a type of AI that examines and uses patterns in data to improve a program's understanding. Deep learning models require massive amounts of labelled data to train on and identify relevant correlations, and assembling this kind of big data set is one of the main hurdles to NLP currently.

The development of NLP applications is challenging because computers traditionally require humans to "speak" to them in a programming language that is precise, unambiguous and highly structured, or through a limited number of clearly enunciated voice commands. Human speech, however, is not always precise -- it is often ambiguous and the linguistic structure can depend on many complex variables, including slang, regional dialects and social context.

NLP is used to analyze text, allowing machines to understand how human's speak. This human-computer interaction enables real-world applications like automatic text summarization, sentiment analysis, topic extraction, named entity recognition, parts-of-speech tagging, relationship extraction, stemming, and more.

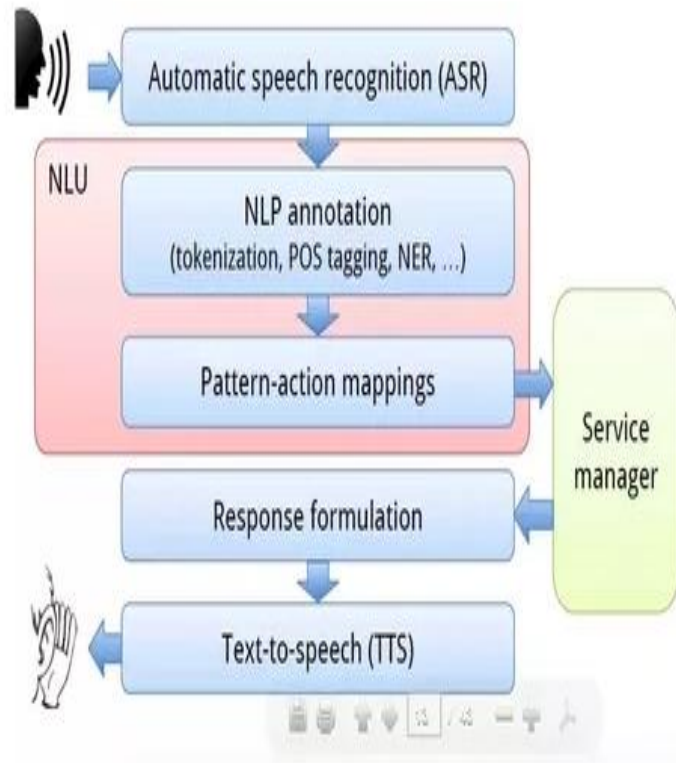
Fuzzy Logic:

Fuzzy Logic (FL) is a method of reasoning that resembles human reasoning. The approach of FL imitates the way of decision making in humans that involves all intermediate possibilities between digital values YES and NO.

Artificial Neural Networks:

The idea of ANNs is based on the belief that working of human brain by making the right connections, can be imitated using silicon and wires as living neurons and dendrites.

How does Siri work?



Artificial Intelligence:

Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think.

AI is accomplished by studying how human brain thinks, and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

From SIRI to self-driving cars, artificial intelligence (AI) is progressing rapidly. While science fiction often portrays AI as robots with human-like characteristics, AI can encompass anything from Google's search algorithms to IBM's Watson to autonomous weapons.

Goals of AI

- To Create Expert Systems – the systems which exhibit intelligent behavior, learn, demonstrate, explain, and advice its users.
- To Implement Human Intelligence in Machines – Creating systems that understand, think, learn, and behave like humans.

The scope of AI is disputed: as machines become increasingly capable, tasks considered as requiring "intelligence" are often removed from the definition, a phenomenon known as the AI effect, leading to the quip "AI is whatever hasn't been done yet." For instance, optical character recognition is frequently excluded from "artificial intelligence", having become a routine technology. Capabilities generally classified as Successfully understanding human speech competing at the highest level in strategic game systems (such as chess and Go), autonomous cars, intelligent routing in content delivery network and military simulations.

Advantages

1. One will be able to ask any question that he/she may feel to ask.
2. There will always be live expert system who will be there to answer the question asked by student.
3. There will be no need to read a lot as it will be both textual and audio learning system which will be completely able to interact with help of speech.

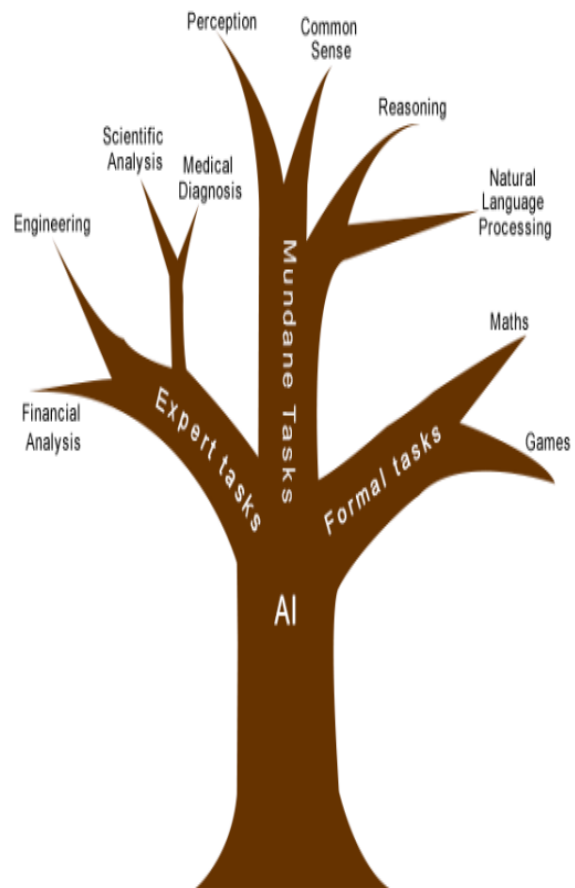
Disadvantages

1. It may be hard to express your thoughts, feelings or opinions in writing.
2. Emails, discussion board posts, and chats may be misunderstood because there are no visual cues to your the senders intentions

CONCLUSION:

“Intelligent programming learning system” is a self-learning system for a user, where he/she can learn the language anywhere and anytime he/she wants. It is portable as he/she can carry it anywhere. The project is basically generated for those who need a separate learning solution

Applications of AI



Future Scope

1. The project is basically generated for those who need a separate learning solution from classroom and traditional online learning.
2. It will be able to help a lot to those who cannot afford classroom trainings and tuitions trainings.
3. Also this project can be extended to the other programming languages and also for other learning solutions which will be able to revolutionize the teaching learning process.
3. Lots of reading from the lecture, to textbooks, to discussion board posts which you must read and respond to, you have to be sure not to miss vital information.
4. It is difficult to form a real connection with your peers

REFERENCES:

Decision Tree Algorithm Implementation Using Educational Data, International Journal of Computer-Aided technologies (IJCAx) Vol.1, No.1. Comparative analysis of No SQL (Mongo DB) with MySQL Database, International Journal of Modern Trends in Engineering and Research.

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Although having thorough knowledge of a programming language one can't remember each and every syntax of any language so this can be used to learn time to time. If used on personal level it will keep the privacy of asking basic questions. Teaching learning process in Audio Video format rather than Books is more interactive process.

<https://developer.android.com/training> : A website to learn some advanced android development concepts.

<https://www.udemy.com/data-science-natural-language-processing-in-python> : A website that provide a course to learn NLP development in Python.

<https://www.python-course.eu/>: The Python UI development Studies. Also some other python concepts.

<https://docs.mongodb.com/> : A complete guide for Database development and integration in Mongo DB.

<https://www.youtube.com/user/thenewboston>: The YouTube channel to learn all type of programming language with some practical examples.

