

Use of Artificial Intelligence in Education

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Abstract: To create an online Artificial Intelligence website that can predict the way in which a student or a user learns. A system which will adapt itself according to that person to teach him/her a particular topic. Parameters can be extracted from a set of videos tutorials and tests which can help to understand the capabilities and potential of a student. The student will have to go through a set of video tutorials after which he/she will have to appear for the test and based on the parameters and outcomes the potential, capabilities, grasping power, the weak and the strong areas will be identified.

Key Words: Artificial Intelligence, Education, Video Tutorial.

1. INTRODUCTION:

From junior K.G to a graduate school, one of the key ways AI will impact education is through the application of higher levels of personalized learning. Some of this is already happening through the increasing numbers of adaptive learning programs, simulations and software. These systems counter to the needs of the student, highlighting certain topics, repeating things that students haven't mastered, and generally helping students to work at their own speed.

This kind of personalized education could be a software aided solution to helping students at different levels work together in one classroom, with teachers facilitating the learning process and offering help and support when needed. Adaptive learning has already had a huge impact on education across the globe, and as AI advances in the coming decades adaptive programs like these will likely only improve and expand.

AI or artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and self-correction. Particular applications of AI include expert systems, speech recognition and machine vision. Similar will be the AI EDUTECH website that can predict the way in which a student or a person learns. The AI Edutech will be introduced as an element in teaching because it can:

- Motivate children by providing a graphic representation which they can control.
- Present material quickly.
- Provide individualized instruction.
- Offer immediate feedback and error diagnosis.
- Free the teacher to work with students individually or in small groups.
- And relieve the teacher of various administrative and educational tasks (e.g. collecting data on students for reports, giving and correcting exams and keeping track of the progress of each student, etc.).
- Separates domain knowledge from the control (pedagogical) knowledge thus allowing the system to present tutorial sequences not explicitly pre-coded by the designer.

2. LITERATURE REVIEW:

E-learning is one of the fastest growing educational technology applications in the U.S., and, until recently, this market sector lacked the sophistication required to make a measurable impact on a student's academic performance. Both start-ups and industry veterans are beginning to use artificial intelligence to interact with the students and learn where they excel and where they need improvement.

Artificial intelligence can be used to analyze numerous data points that a teacher alone would not be able to measure. For example, let's look at a mathematical multiple choice question and what we can learn by analyzing the student's interaction. While an educator may look at the child's score, AI can dig much deeper and learn more about where the child is struggling. The AI can look at individual questions to determine if the student is struggling with the overall concept or perhaps if the verbiage in the question is just confusing.

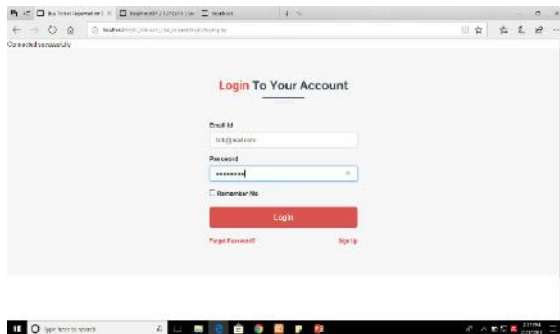
3. METHODOLOGY:

As YouTube contains tutorials on every known subject or topic in the world it can act as a huge video library from which a student can choose the subject he wants to learn. Initially the student will apply for a course and the relevant videos will be shown. Based on the video watched some parameters will be extracted from the video for e.g. the number of pause, subtitles, part of a video repeated again and again, etc.

The user will then have to solve some questions based on the topic taught in the video. The time in which the student answers the multiple choice questions also acts as a parameter as a bright student will answer most of the questions right within a short period of time and on the other hand an average student might require more time and not all answers may be true. The software will then evaluate the result and predict the areas in which the student is weak or strong. System will also predict the information in theoretical as well as graphical information.

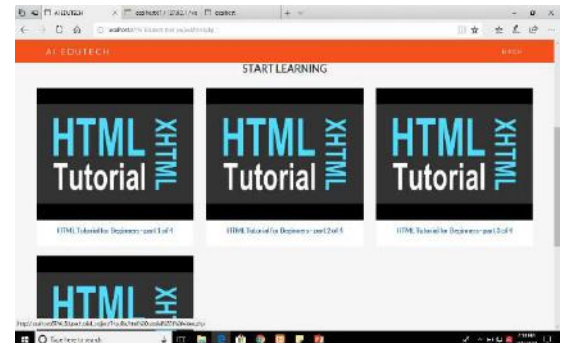
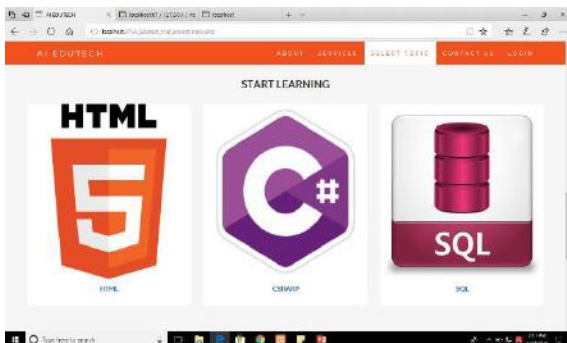
3.1 Login / Register

The student can maintain their own personal information.



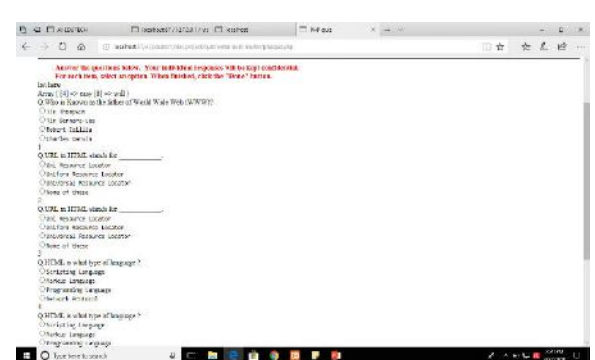
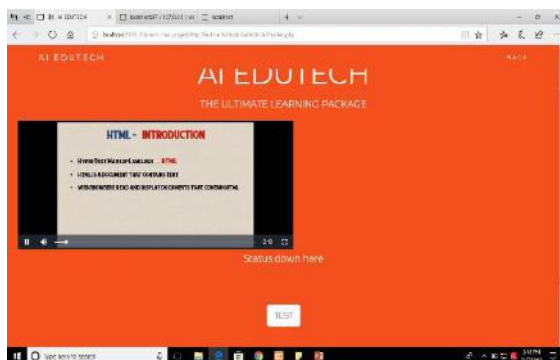
3.2 Video Library

There will be video library present in the website where a student can navigate through various websites and opt for a particular website he is interested.



3.3 Test

There will be test series which will be generated based upon the way the student views the video, these questions will be fetched from the database and the calls for the questions will be depend on the algorithm.



4. RESULTS:

The result will be consisting of various representation, based upon the various parameter from the videos and test that the student has opted for.

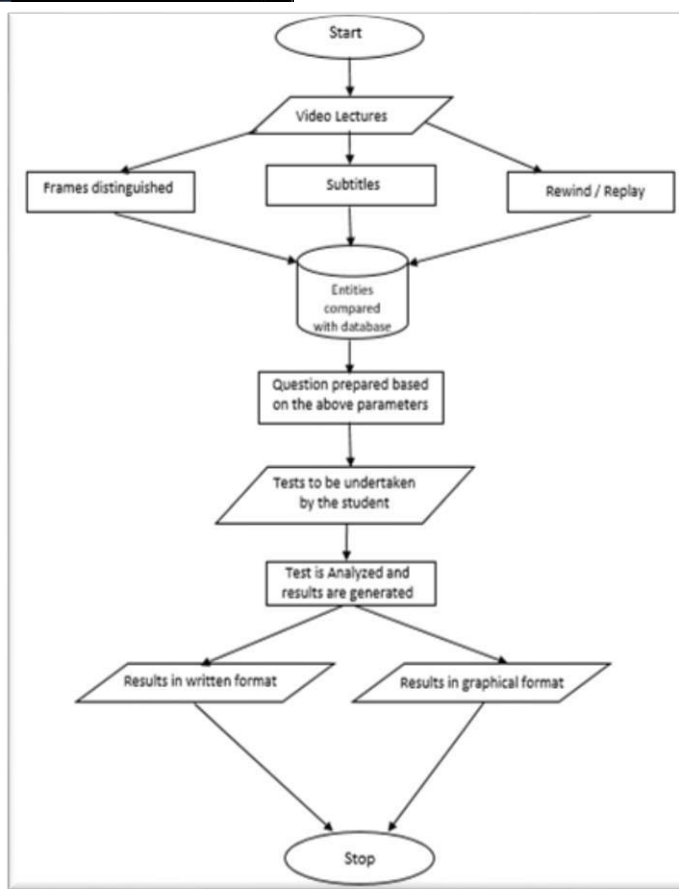
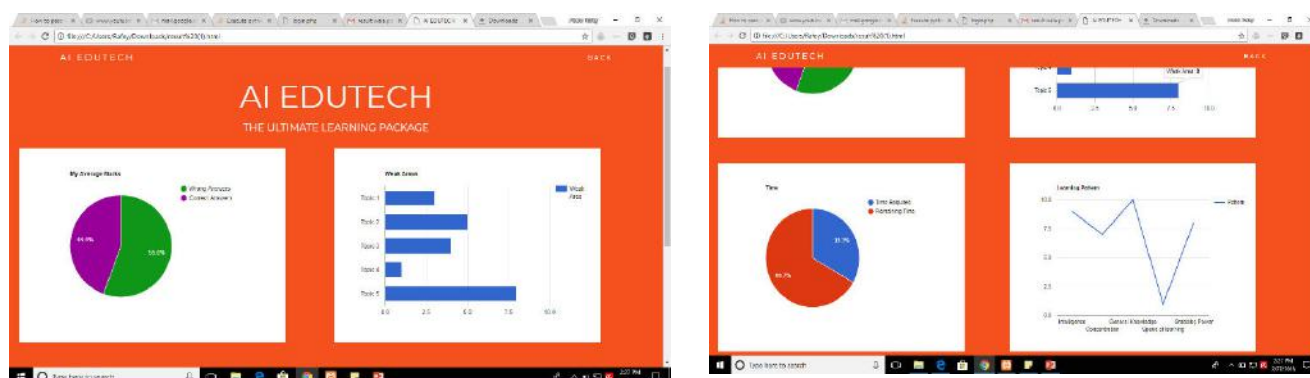


Fig: 1 Work Flow Diagram of AI Edutech.

5. ANALYSIS:

A student will apply for a course which will be consisting a video library, after the video the user will be made to solve certain multiple-choice question which will be related to the video lecture. The student will then answer the given questions. The software will then evaluate the result and predict the areas in which the student is weak or strong. System will also predict the information in theoretical as well as graphical information. The parameters that were extracted from the video and the test will be analysed and the result will be shown to the user.

6. FINDINGS:

- AI will help revolutionize the way in which students learn, and how they acquire basic skills.
- It can make trial and error less scary.
- It can change the role of teachers.
- It can also be used to give helpful feedback.
- It can automate grading system.

- It can help predict the unique learning pattern of individuals. It can help to identify the weak and the strong areas of a student or a user.

7. CONCLUSION :

The technique which will be developed on the above idea will be able to provide a completely new method of learning. It will help restructure the study and learning pattern completely based on video lectures and tests. It will help lighten the burden of the teachers as this website will help the students learn in an attractive and stress-free manner involving more and more use of technology. It will change the concept of learning and reshape the education structure.

This website will prove to be very useful in many ways such as students can easily and efficiently measure the various parameters about his study such as how much time it takes for him to complete a topic or what are his or strong and weak points. The advantage is the consistency that e-learning provides.

8. RECOMMENDATIONS:

AI-Edutech is self-paced, and learning is done at the learner's pace. The content can be or her repeated until it is understood by the trainee. It can be made compelling and interesting with multimedia, and the trainee can be given multiple learning paths depending on his or her needs. So the user must be capable of understanding the complete workflow of the website and try to obtain his personalised unique results in an efficient manner.

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