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Trainee Toolz

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Abstract: Over the past few years, the usage of online learning has become the most standard and important part of learning practices among the graduating students. This is the basic tool used by both teachers and students. This website is developed promising the students and teachers involvement enabling distant learning is easy and possible. Our website uses new technologies to make the educating a better experience. There are many platform available online for the students to help them study and train them in their fields. But as of now, there is a few of other platform that help teachers keep the track of student's performances. This website consists of all of study material available for the computer science students. They can check their understanding of the specific subject as well as specific topic using the quiz provided on our website. When in doubt students can interact with the teachers and clarify their doubts. The website consists of the study material , quizzes to practice their knowledge , student-teacher interaction for the better understanding of the topic, peer-to-peer interaction for the better and healthy competition. This is a platform which not only helps the student to learn and prepare for their university exams but also helps them widen their horizon and helps them in participating in the competitive exams too. A platform where students can interact with their peers, teachers in order to share their views, opinions and doubts. A place where they can compete themselves for college academics and competitive exams using the percentile grading system. Usually it is seen that there is a wide gap of hands-on programming experience or knowledge among the graduating students. It is seen that they only have the placement required knowledge which affects them in long run. So, our motive is to build the web app which can help student boost their coding skill and master their programming knowledge which can help them compete in the competitive programming competitions throughout their life. Here, students can share their views on blogs which later can be evaluated by the teachers and they can share their opinions on them. There are several apis used here which can help students to practice coding . They can even compete among themselves for the better understanding of the concept and the different approach to the problem they might be unaware of and in this way they will have a better understanding of the topics. And after each problem statement students can evaluate their score based on their performance.

I. INTRODUCTION

The Web application is tool developed for student which serves as a platform for the them to enhances their coding skills and knowledge. This website is used by both the teachers and students where they can share their views, opinions and doubts among the peers as well as with teachers. A place where they can compete among themselves for their better experience and programming knowledge. The goal of the technology is to provide the tool that will provide the better experience for the people using it. While this may seem like to be a tool provided for an individual with the access to the website and the study material provided for them to learn and practice. This is a platform that has been designed for every student wishing to expand and share their knowledge beyond the scope of college. A platform where students can share their views, opinions and doubts among their peers and teachers. A platform where they can compete among themselves for college academics using percentile based grading for each subject. Our web app will contain a competitive environment for users. As after completing a topic you have to give a unique designed quiz which then gives you a percentile.chat rooms ,online forums and doubt sections or solve your doubts and interact with your peers and professionals.Wide variety of subjects and always have the potential to grow. Provide your teachers with a competitive rank among your college mates and allow them to track your progress .This system serves the purpose of providing online learning through the network. Our system can be defined as the tool for online learning, better skills, and interactive platform among the peers and teachers. The website allows the students to progress learning according to the topics they might like to move on to. Each topic have associated learning material for the preparation and the quizzes to review whatever they have learned. Students can make use of all the materials provided for them as they make progress in their learning. Teachers will be enabled to access all the courses and the scores of the students as they login to the website Some activities includes peer-to-peer interaction , student-teacher interaction, quizzes, coding and better programming skills. The purpose of education consolidates to be motivational and vocational. However, in India studying is far less related to the ongoing trends and demands instead the same old conventional methods are used and students are kept very much less aware of the real life hurdles and needs.

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II. LITERATURE REVIEW

As the time is evolving computers have become a more prevalent part of our life. We may be likely to think of laptops or iPads as elements of the classroom. They may even replace the use of textbooks which is an example of the continuous examination and reevaluation of situations that led to theories like Symbolic Interactionism.

Lave and Wenger in 1991 described situated learning as a process that only takes place in a defined setting. Understanding of the situated learning is an important part because the accession of knowledge and development of the skills do not take place in a vacuum. Learners attain this competency by participating in communities like online programming where they can collaborate with mentors and peers such as our platform.

Even in the formal classroom we still see the outlines of situated learning, with a teacher presenting the canon of knowledge and students discussing how it relates to them but sometimes formal classroom setting only helps in bringing out the best in some students leaving the others to catch-up on their own.

The web application that is being used by some universities like PESIT and Christ University Bengaluru only provides the following features and functionalities into their websites such as Login/Sign Up, Dashboard, Viewing of results, attendance, courses, time table, assignments, students progress. On the other hand our website not only provide the study material for the students to study but also provides the Integrated Development Environment (IDE) for the students to practice their programming skills. So, they will not only have the theoretical knowledge about the subjects but also the practical knowledge on the given subject.

The paper on Student Information Management software focuses on providing information to support the operation, management and decision-making functions of colleges. In the face of huge amounts of information, it is required to possess the student information management system to improve the efficiency of student management. Through this system, the standardized management, scientific statistics and fast query of student information can be realized, and thus the workload of management can be reduced. In this paper, a typical student information management system has established to realize the systematization, standardization and automation of student information relationship. This paper only focuses on making the management work easy and has fully neglected the students.

The web based student information system is the application that focuses on a simple interface for maintenance of student information. The creation and management of accurate, up-to- date information regarding a student's academic career is critically important in the university as well as colleges. Student information system deals with all kinds of student details, academic related reports, college details, course details, curriculum, batch details, placement details and other resource related details too. It tracks all the details of a student which can be used for all reporting purposes, tracking of attendance, progress in the course, completed semesters, years. Different reports and

Queries can be generated based on vast options related to students, batch, course, faculty, exams, semesters, certification and even for the entire college.

Asogwa, Mohammed, Ahmed & Danmaitaba (2015) explains that the benefits of Student Management (SMS) software are enormous. On the other hand, Pacio (2013) argues that in recent years, the use of online student information systems has provided students with the capabilities to excel in their academics as well as timely access to their study material via the internet. Students get a new platform not only to gain knowledge but also to express the knowledge.

It was observed that the key benefits of Student Management System to students revolves around the 24/7 web-based access to information about their classes and events.

Asogwa et.al (2015) observed that despite revolutionizing the student information systems, universities in their administrative or academic transaction services, and maintaining student's academic history and profile, paper work is still going on concurrently.

Furthermore, Igweonu (2013) also pointed out that inconsistency in power supply, inadequate funding during implementation, inadequate technicians for computer maintenance, and limited access to internet are some of the challenges that locks most universities in the use of Online Student Information Systems.

The most problem faced by the above systems are either the lack of students knowledge over the subject regarding hand-on practice or focusing of those systems more on management and less on students benefits.

This is where our web application comes in handy. Our website focuses on the Students and provides hand-on coding skills required for the students and a percentile based marking system where they can track their score. Along With this they can interact with their teachers whenever they are in doubt. Students can also engage in healthy competitions with their peers and enhance their knowledge.

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III. MATERIALS AND METHODS

A. Designing Relational Database Schema

A database is used to store the available data which can be accessed over the internet. A database can be hosted on any cloud storage. A well designed database provides the access to all the data available on the website. As achieving the goal in working with a database requires a correct design.

The objective of the website is to provide the student with a platform where they can study and excel their skills for their better understanding of programming .Next step in the database schema will be To gather the information required for the website and then to choose the primary key, which uniquely identify each of the rows. Primary key identifies the rows uniquely and after choosing the key creating relationship among the table is done where foreign key is used to refer to the primary key of the other table meaning it links the two tables. And then after the refining and normalization of the of the database we can connect the database to the website. Here, the database used in the website is SQLite and the cloud storage used for the hosting is Amazon Web Services.

B. Designing User Interface

User interface is an element which creates a big impact on the customer as this is what user sees and interact with ,not the underlying backend of an application. It helps in increasing the user involvement and creating a perfect link between the user and the website. Keeping the interface Simple is one of the ways to lure the user in and they avoid unnecessary elements. Using the common elements in UI makes users more comfortable for using the interface and getting things done.

Correctful placement of the items on the page layout can help draw in attention of the user and aid in readability. Always inform your users of location, actions, changes in state, or errors. The use of various UI elements to communicate status and, if necessary, next steps can reduce frustration for your user. By carefully thinking about and anticipating the goals people bring to your site, you can create defaults that reduce the burden on the user.

C. Developing Backend Server

A backend is one of the important components of website development. A backend server is required for all the core functionality of the website. A backend server is a place which tells the frontend to do all the work on the website. A backend is required for the for the development of the functional and logical system. A backend developer is responsible for ensuring the scalability and functionality of the website irrespective of the traffic volume.

The backend includes the server-side, APIs (Application Programming Interface), databases and frameworks. The language used in this website is Python and the framework used in the app is Django. An application server-side includes login details, course details, study material details. Therefore, any action performed by the frontend or at the frontend is managed, sent and retrieve by the database in the backend. Server is the one that receives all the incoming requests from the clients. Server provides the resources on the website, data and services over a network. Django is the python module which uses an ORM (Object Relational Manager).

D. Deploying It on Cloud Hosting Platform

Web Hosting services can host anything from blogs to dynamic websites in the cloud. The Cloud web hosting services used in this website is AWS (Amazon Web Services). In this we basically create an instance of a server and deploy the application there. That instance has a Local address pointing to it and the domain we buy points to it. The deploying of a web application requires the creation of all the necessary infrastructure required for deploying the web application after it has been made. We need to package our application for the deployment. The first step is to build CDK application and if no error found then we are ready to deploy our application in the cloud. After answering the few account security level question application will be ready to deploy. When it is done, you will receive a message of the ARN (Amazon Resource Name of the Cloud Formation stack that this deployment created for you. If you want to see your application deployed in the cloud, the first thing you need to do is to find the URL of the web app. You can find this URL by going to the Elastic Beanstalk service in the AWS console, and look for the environment.

The benefit of using AWS CDK for all infrastructure is that cleaning up your AWS environment is easy. Just run the following command in your terminal inside the CDK application directory: cdk destroy

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IV. CONCLUSION

The purpose of education consolidates to be motivational and vocational. However, in India studying is far less related to the ongoing market trends and demands .Traineetoolz is an online web application that serves students a platform where they can enhance their knowledge and coding skills.

A platform where students can share their views, opinions and doubts among their peers and teachers. A platform where they can compete among themselves for college academics. A platform that is designed for every student wishing to expand and share their knowledge beyond the scope of college. It allow the end users to go through the list of subjects according to their needs and learn through the content provided on web apps. Some of the benefits of online education are:

1) It saves time, money, and energy.
2) Through it, you can gain a proliferation of effective information while sitting at home.
3) Gives an online platform for people to learn and compete their coding skills among there peers and guidance from there teachers and other professionals
4) It balances the supply and demand ecosystem.
5) Our Application Trainee Toolz offers live query solutions like chat rooms, online forums, and e-mails

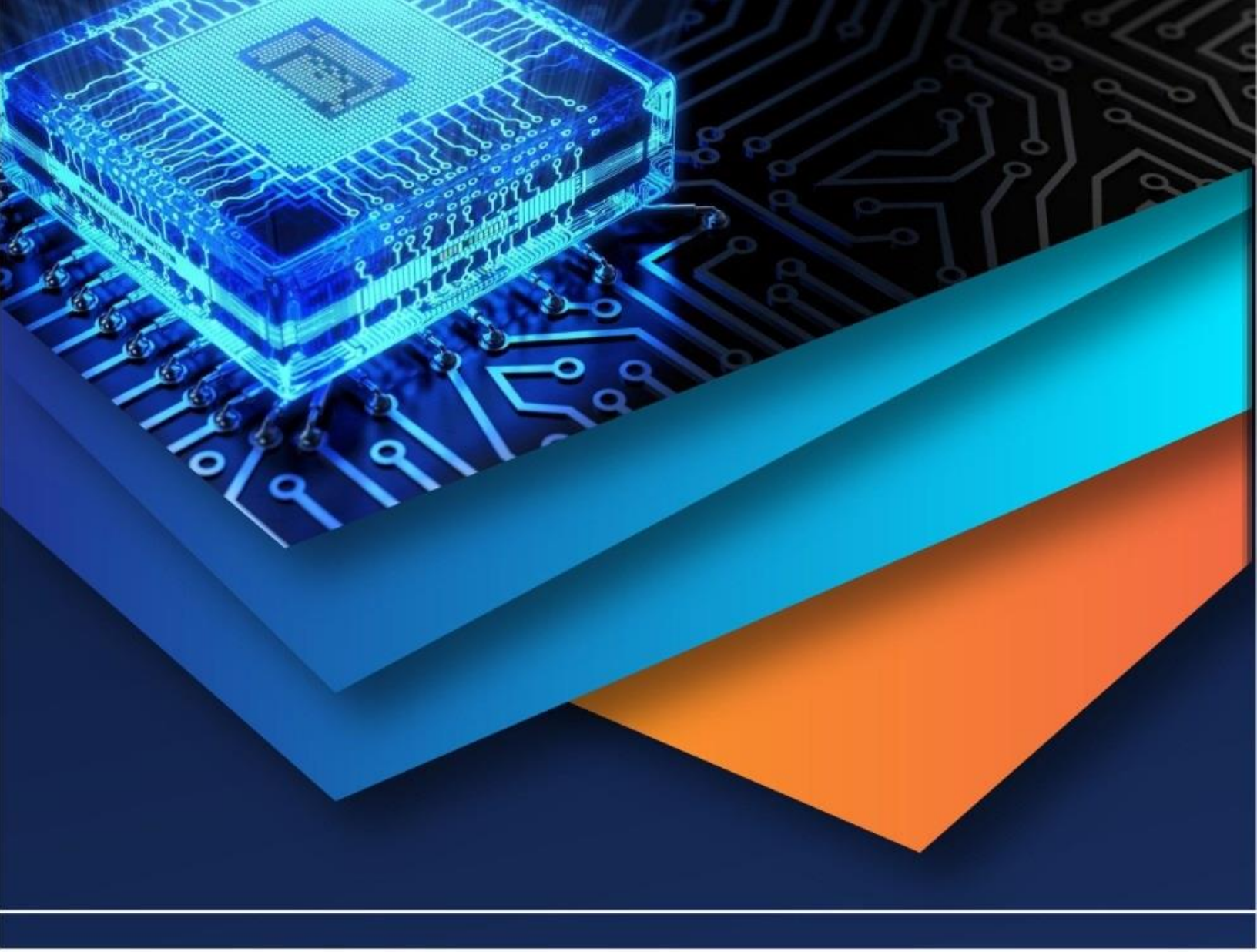
An application's frontend is where all user interact with each other .And the technologies Required for the frontend would be HTML, CSS and JS (React). HTML is used to structure A web page and its content whereas CSS is used for it fundamental web designing which includes the website's look and layouts and colors without it will be just a plain text. Another one of A component of a website is its database that stores all data in tabular format. Database used in this application would be sqLite database. Backend service is where all the logical queries would be handled. It would act as a gateway for both frontend and the database. Technology used for the purpose would be python (Django).

The main outlook is to understand if it is possible to complete the project with the current technologies. This application is going to use many programming languages and frameworks in order to ensure a good user experience for the end user, as well as adopting good coding practices for the developer. This application is gonna help student get better in their academics and in their coding and programming skills which will be helpful in their life later on.

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