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## DESIGN & APPLICATIONS OF PROJECT-BASED LEARNING METHODOLOGIES FOR SMALL GROUPS WITHIN THE COMPUTER FUNDAMENTALS

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### ABSTRACT:

**PROJECT-BASED LEARNING (PBL)**, is a new method of learning and implements practical learning and which ensures the users learn and access the materials with ease, project-based learning helps the students to connect to a practical environment, instead of Teacher-centered methodology, PBL creates a new and user-friendly environment to the student which helps in building his confidence as well as practical knowledge. PBL focuses on the importance of using a series of practical situations rooted in real professional contexts, PBL is helpful in real professional situations in the education levels. It is worth mentioning that technology and the future of learning methodology PBL methodology are very useful for small groups and organizations and plays a crucial role in learning fundamentals.

It is extremely beneficial to generate automated learning data to make it more comfortable for people to accomplish tasks. Certainly, the need to decrease teacher workload. this practice allows the student to engage the practical knowledge of the subject. This method helps to simplify the Practical Problems of the Topics. PBL changes the mode of learning into mode of thinking the solution for Real-time tasks.

### INTRODUCTION

**Project-based learning (PBL)** is a Student-centered technique that involves a dynamic classroom approach in which it is believed that students acquire a deeper knowledge through active exploration of real-world challenges and problems. Students learn about a subject by working for an extended period of time to investigate and respond to a complex question, challenge, or problem. It is a style of active learning and inquiry-based learning. PBL contrasts with paper-based, rote memorization, or teacher-led instruction that presents established facts or portrays a smooth path to knowledge by instead posing questions, problems or scenarios.

This is a new method of learning and implements Practical learning and Which ensures the users learn and access the materials with ease, project-based learning helps the students to connect to a practical environment, instead of Teacher-centered Methodology, PBL creates a new and user-friendly environment to the student which helps in building his confidence as well as practical knowledge. PBL focuses on the importance of using a series of practical situations rooted in real professional contexts, PBL is helpful in real professional situations in the Education levels. It is worth mentioning that technology and the future of learning methodology PBL methodology are very useful for small groups and organizations and plays a crucial role in learning fundamentals. PBL changes the mode of learning into mode of thinking the solution for Real-time tasks. Project-based learning also

gives students the opportunity to explore problems and challenges that have real-world applications, increasing the possibility of long-term retention of skills and concepts.

Typical projects present a problem to solve or a phenomenon to investigate. PBL replaces other traditional models of instruction such as lecture, textbook-workbook driven activities and inquiry as the preferred delivery method for key topics in the curriculum. It is an instructional framework that allows teachers to facilitate and assess deeper understanding rather than stand and deliver factual information.

### WHY DO WE NEED PBL?

#### Secured:

Online testing presents adaptability and assurance in the examination. After all the questions have been stored in the system, the system can mix and ask questions to various students in diverse order. However, this is not reasonable on paper tests, and paper cannot be printed separately from student to student, which can commence to abuse. There is also the probability of a paper leakage when transferring to a different examination center, and this jeopardy is overcome by using an online test system.

#### Remote Administration:

Online Quiz can be proctored in automated inspection methods. when a User Opens the Quiz Module the User must Register to and then only he can able to take the test. This allows the same student to attend the quiz and the system can track the student during the exam. The paper-delivered exam requires hiring observers for a specific quantity of students.

#### Immediate Result Processing:

In the online Quiz, the results are determined instantly and precisely. The Quiz requires many levels, so the paper-based evaluation process is time-consuming and likely to human flaws.

### TECHNICAL STACK:

**SQL:** *Structured Query Language* is used to perform operations on the records stored in the database such as updating records, deleting records, creating and modifying tables,

**PHP:** PHP is an open-source, interpreted, and object-oriented scripting language that can be executed at the server-side. PHP is well suited for web development. Therefore, it is used to develop web applications (an application that executes on the server and generates the dynamic page)

**XAMPP:** XAMPP is one of the widely used cross-platform web servers, which helps developers to create and test their programs on a local webserver. It consists of **Apache HTTP Server, MariaDB, and interpreter** for the different programming languages like PHP and Perl.

**HTML:** website HTML stands for Hyper Text Markup Language. It is used to create web pages and web applications and is widely used language on the web. We can create a static website by HTML only. Technically, HTML is a Markup language rather than a programming language

**CSS:** CSS stands for Cascading Style Sheet. It is used to design HTML tags and is a widely used language on the web. HTML, CSS and JavaScript are used for web designing. It helps the web designers to apply style on HTML tags

#### SUBLIME TEXT:

Sublime Text is a shareware cross-platform source code editor with a Python application programming interface. It natively supports many programming languages and markup languages, and functions can be added by users with plugins,

**PHP MYADMIN:** phpMyAdmin is a free and open source administration tool for MySQL and MariaDB. As a portable web application written primarily in PHP, it has become one of the most popular MySQL administration tools, especially for web hosting services.

**PROPOSED SYSTEM:****USER LOGIN:**

Users taking the test must first register and then log in to their account and take the test.

**ADMIN LOGIN:**

The administrator will possess a login account. He can add corresponding question and answers. Answers are saved as the reason for the system to use to validate.

**QUIZ:**

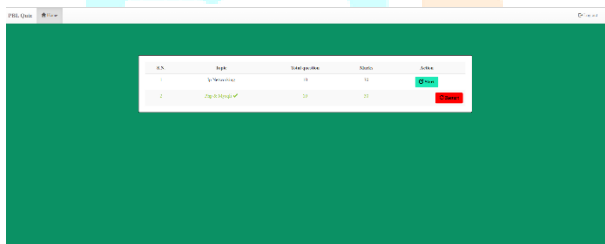
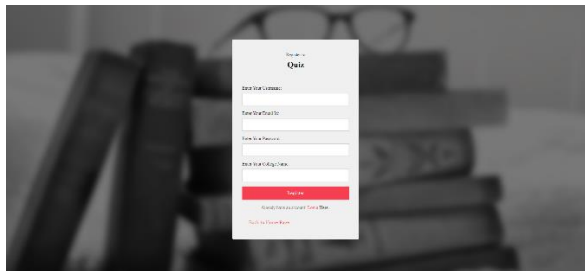
User need to choose the stream and then he can start the Quiz, and also the immediate result page will display personally to every User. User can also save the marks of previous test.

**RESULT:**

Whenever the user completes his quiz then the result page displays each and every details of the quiz like Correct answers, Wrong answers and GPA

**ADDITIONAL QUIZ:**

The ADMIN can Add the Quiz or delete the Quiz into the System

**SAMPLE VIEW:****ADVANTAGES:**

- The project-based learning is that real-world problems capture students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context.
- Reducing the Cost of Effective learning.
- system calculates the score and provides the results instantly.
- It removes the human errors that commonly occur during the manual checking
- Achieving the goal to Make the Practical learning instead of Theoretical knowledge.
- Effective learning and problem solving.
- Increase in the speed of learning.

**CONCLUSION & FUTURE ENHANCEMENT:**

- In the future developments, video-based learning modules can be implemented using which students can access the lecture's videos with ease and can learn as per their convenience.
- This is the beginning of the project-based learning, in future this can be linked with automation of the project where the users can be more interacted with the project based learning and can develop their practical knowledge over the theoretical knowledge.
- It would be useful to carry out a student satisfaction survey on the methodology used, since the feedback that the teacher receives should be based on objective data, although the comments of the students in the web application could also be included in such feedback.

- In the later phases, teacher-student interaction can also be implemented so that students can easily interact with faculty and get their doubts cleared.

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