Online Blocked Based Programming Interface With LMS

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ABSTRACT

This project presents a method to create a Block-Based programming interface using Blockly. It is a simple and easy to learn without any programming knowledge. In this Web Application there are two users i.e., Teacher and Student. Teacher can create a classroom and assign assignments and work to the students. Students can join the classroom with the help of a code provided by the teacher and can enroll in various courses provided by the Application. Courses are designed to teach basics of programming and to write a program using Block-based programming interface. Web application will have built-in Block based code editor by using a student can easily create a simple program just by dragging and dropping the code blocks. Block-based is a very easy way to introduce new learners to the programming and the field of computer science. As the block-based programming is a visual-based programming language, it becomes much easier for beginners to learn programming.

Keyword: *Blocked-based programming, Blockly, LMS, Education, visual programming, computer science, developer tools, language design.*

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1. INTRODUCTION

Programming is a crucial, complicated, and important part of project and software development an implement algorithm as executable code. There are different types of programming languages, and can be implemented in different ways. But the only thing was that it can be written only in text format, it is known to be programming with text. Coding is achieved in a text-based programming language by typing different characters from a syntax, or list of codes recognizable by that language. The following are some examples of text-based languages java, c++, python, scheme, etc. Now-a-days all the education system are getting upgraded, therefore from 1st grade student till the higher graded students wants to learn programming. For them there is a programming language which is called to be block-based programming language. This will give a different way to the code, and make coding more interesting. Visual programming is the term for this.

Visual programming developed into block-based languages. Our thoughts are frequently visual. Online block-based programming is a method to create a Block-Based programming interface using Blockly. Blockly is a library for web and mobile apps that adds a visual code editor [6]. Variables, logical expressions, loops, and other code concepts are represented in the Blockly editor by interlocking graphical blocks. It enables users to apply programming principles without worrying about syntax or being intimidated by a flickering cursor on the command line. It is a simple and easy to learn without any programming knowledge. In this Web Application there are two users i.e., Teacher and Student. Here the client can login as teacher or a student, where the teacher will able to teach students. Teacher can create a classroom and assign assignments and work to the students. Students can join the classroom with the help of a code provided by the teacher and can enrol in various courses provided by the Application and students are able to learn the programming in different and easier way. This system has different programming courses which can be enrolled by students. Courses are designed to

teach basics of programming and to write a program using Block-based programming interface. Web application will have built-in Block based code editor by using a student can easily create a simple program just by dragging and dropping the code blocks. Block-based is a very easy way to introduce new learners to the programming and the field of computer science. It becomes much easier for beginners to learn programming.

1.1 AIM AND OBJECTIVE

- •   This web application will provide a platform where anyone can learn programming.
- •   Also, anyone with knowledge of programming can teach the programming to students.
- •   Teachers can create courses for students and students can join the courses.
- •   Students can enroll for different courses, and join there coding classes very easily.
- •   It becomes much easier for beginners to learn programming.
- •   Over-coming all the issues are in existing system. Which will provide higher- order thinking, active participation, it can be utilized for both personal and academic use.

2. LITERATURE SURVEY

As the modern technology developed, it also changed the lifestyle of people, and children are no exception. Nowadays, from early age, children started to use mobile devices (Phone, Tablets, etc.) to play games and for entertainment. But they can do much more with the modern technology [1]. As children learn faster when they visualize, watch animation or play games. Block-Based Visual programming language can be used to teach children programming from an early age. Children encounter difficulties to understand the abstract concept of programming language, this program can be solved by Block-Based programming language. The Block- Based programming language consists of blocks that contains code for a particular task (Ex: To print number from 1 to 100). Custom blocks can be created for different tasks. By using Blocks, they can understand the basic programming concept like variables, loops, conditions, etc.
To implement the Block-Based programming, Google provides an Open-Source library called Blockly. Blockly makes it simple to add Block-Based visual programming to an Application. It is designed to be flexible and to support a large set of features for different application. It has been used for programming animated characters on a screen, creating story scripts, etc.

3. METHODOLOGY

3.1 Problem Statement

Now-a-days, some primary and secondary schools want to give their students coding knowledge. For them understanding programs, syntax, loops, variables are too difficult. And they'll not be able to memorize the syntax and operation. On this problem only to make them understand coding, this system is reliable and it will be fun for them to learn coding.

3.2 Scope

- • Blockly helps young people to express themselves through animation, games, and other mediums.
- • Blockly enables kids to collaborate on projects and share their work online.
- • Through the use of technology, Blockly helps students to learn 21st-century skills.
- • Blockly can be used in a variety of subjects, and teachers and students can use it to build and share resources.

3.3 Features

- • Easy sign-up and login options.
- • Easy to understand UI.
- • Profile updating.
- • No need to memorize syntax, drag and drop on the playground.

- Navigation to new page is much reliable.
- Enrolling new courses.
- Creating new projects.
- New lessons to understand syntax, logics.
- Logic building ability increases.

3.4 Limitations

Now-a-days, some primary and secondary schools want to give their students coding knowledge. For them understanding programs, syntax, loops, variables are too difficult. And they'll not be able to memorize the syntax and operation. On this problem only to make them understand coding, this system is reliable and it will be fun for them to learn coding.
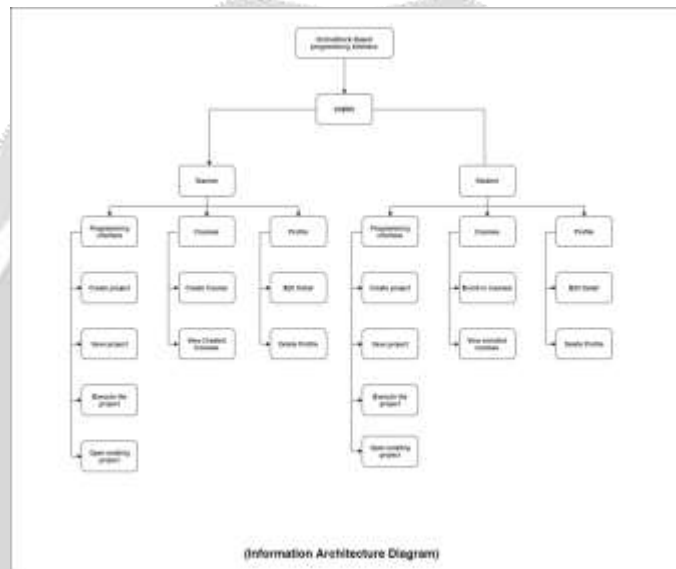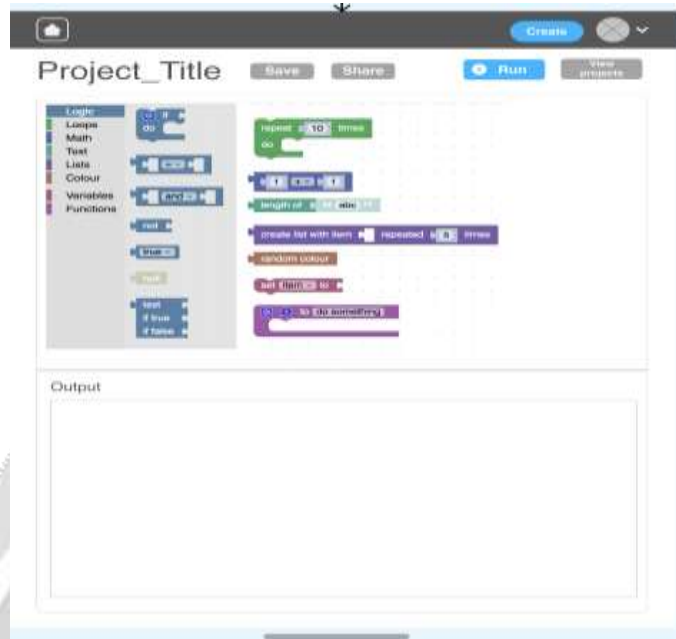
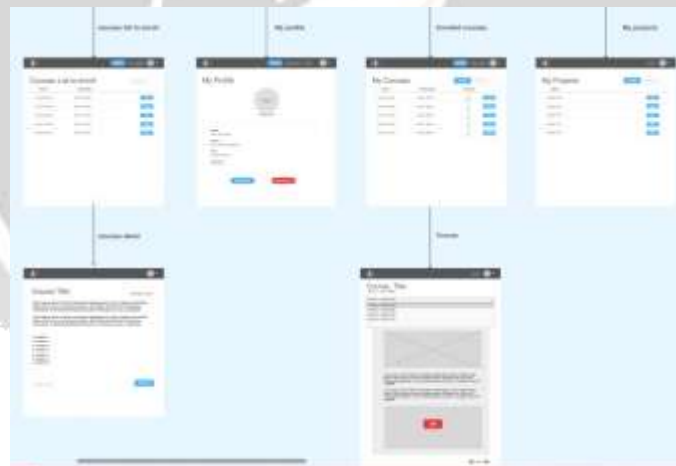**Fig -3.1**: Information Architecture Diagram
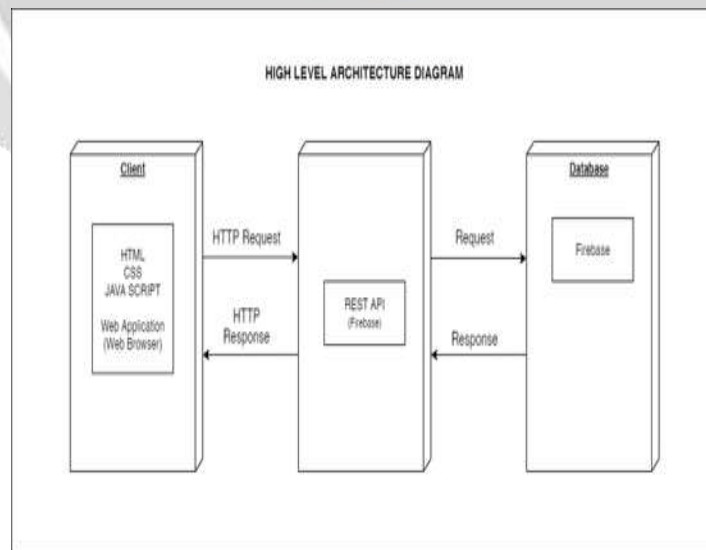
Fig -3.2: High Level Architecture Diagram

4. IMPLEMENTATION

Fig -4.1: Blockly Playground for Coding

The Platform where students can code or learn how to code by using Blockly code blocks by just simply Drag and Drop.

Fig -4.2: Student Portal Overview

These are the functions or activity which are students can do.

Fig -4.3: Teacher Portal Overview

These are the functions or activity which are teachers can do.

5. CONCLUSIONS

The use of Blocked Based Programming Language is based on drag & drop technology which is the first step for children to take in the field of computer science. As children find it difficult to understand the abstract concept used in programming languages, Block-Based programming makes it easier for them to understand. Blockly which is a client-side Open-source library by Google for Block-Based visual programming. Using the Blockly library it becomes much easier to implement the blocked-based programming language. Our application will provide editor for block-based programming, classroom for student and teacher and pre-made courses for programming using the block-based programming that a user can enroll. Block-Based programming develops algorithmic thinking and build foundation for traditional programming languages.

6. REFERENCES

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