



# **Kids Learning Web Application (Kiddy)**

Submitted By

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Submitted To

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**A project turned in to partially complete the requirements for a Bachelor of Science in  
Software Engineering degree**

Fall – 2023

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## APPROVAL

This project titled on “Kiddy”, submitted by **Ahmedul Haque (ID: 201-35-525)** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

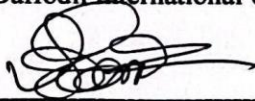
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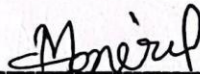
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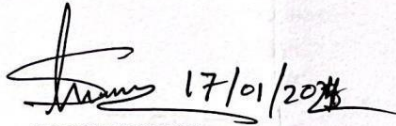
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## DECLARATION

I announce that I am rendering this study document under Dr. Shapla Khanam Assistant Professor, Department of Software Engineering, Daffodil International University. I therefore, state that this work or any portion of it was not proposed here therefore for Bachelor's degree or any graduation.

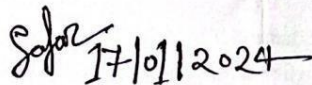
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## RECOGNITION

I'm grateful to Daffodil International University for helping me, and to my supervisor, **Dr. Shapla Khanam** ma'am, for her ongoing oversight, counsel, and direction. I also want to express my gratitude to my parents, DIU members, and all of my teachers for their encouragement and support. I'm also appreciative of all of my friends.

# TABLE OF CONTENTS

<b>Approval .....</b>	<b>ii</b>
<b>Declaration... ..</b>	<b>iii</b>
<b>Recognition.....</b>	<b>iv</b>
<b>Contents .....</b>	<b>v</b>
<b>Chapter 1.....</b>	<b>1</b>
1.1. Overview .....	2
1.2. Purpose .....	2
1.3. Background .....	2
1.4. Benefits.....	2
1.5. Goal. ....	2
1.6. Participants .....	2
1.7. Proposed System Model.....	3
1.8. Waterfall-Model .....	3
1.9. My usage of waterfall and why .....	3
1.10. Project Schedule .....	3
1.11. Gantt Chart .....	4
1.12. WBS Planning for Development Phase .....	5
1.13. Related Work.....	6
1.14. Problem Statements.....	6
1.15. Purpose solution .....	6
<b>Chapter 2.....</b>	<b>7</b>
2. Software Requirements Specification .....	8
2.1 Functional Requirement for user .....	8
2.2 Non-Functional Requirement... ..	8
2.3 SRS.....	9
<b>Chapter 3.....</b>	<b>10</b>
3.1 Use Case Diagram .....	11
3.2 Use Case Description .....	12
3.3 Activity Diagram.....	15
3.4 Sequence Diagram.....	18
3.5 ER Diagram.....	21
3.6 Class Diagram .....	22

<b>Chapter 4</b> .....	23
4.1. User Interface Technology .....	24
<b>Chapter 5</b> .....	25
5.1 User Interface .....	25
5.1.1 Sign-up page.....	25
5.1.2 Home Page .....	26
5.1.3 Math Page .....	27
5.1.4 Paint Board .....	28
<b>Chapter 6</b> .....	28
6.1 Testing.....	29
<b>Chapter 7</b> .....	36
7.1 Limitations .....	37
7.2 Obstacle & Achievements.....	37
7.3 Future Work .....	37
<b>References</b> .....	38

# **Chapter 1: Overview**

# Chapter 1

## Overview

### 1.1. Project Overview

Between the ages of five and twelve, learning is an essential part of a child's development because this is the time when they start to form a sense of self. It is essential to create a positive and engaging learning environment that fosters creativity and exploration. Typically, children learn from their families and their surroundings. This is a critical stage in a child's life where they can acquire new knowledge and skills. However, in real-life situations, learning resources may be scarce, and children may need to rely on memorization to learn new concepts. Consequently, some children may struggle to make smart choices due to inadequate learning processes.

### 1.2 Project Purpose

The website aims to achieve this by providing a range of educational resources, games, videos, and creative tools that are designed to be fun and interactive, while also teaching children valuable skills.

### 1.3 Background:

I've seen many applications about child education. But I never see such an easy way to help kids develop their academic skills and have fun at the same time.

### 1.4 Benefits

KIDDY seeks to enhance learning and creativity through its features, which are tailored to the interests of children in this age group. By providing a safe and engaging environment that encourages exploration, learning, and play, the objective of KIDDY is to help children develop a love of learning and acquire practical skills that will benefit them in the future.

### 1.5 Goal

Kids will develop their academic skills and have fun at the same time.

### 1.6 Participants

In this framework, stakeholders come in three different forms:

- 1) The development groups.
- 2) Administrator.
- 3) Wide readers.



## 1.6 Suggested Framework Model

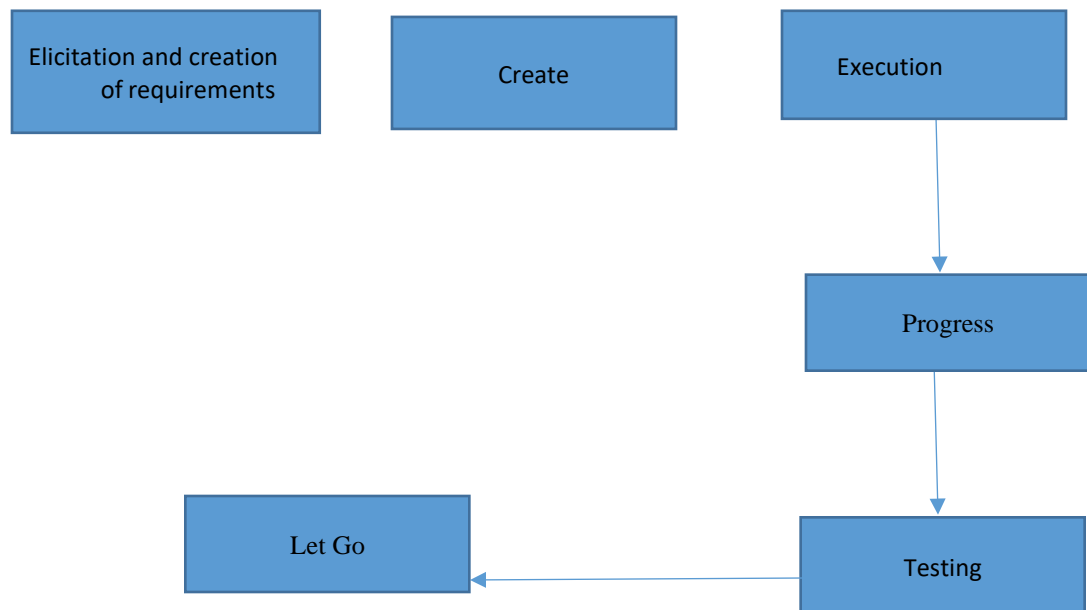
1. This project will be a fantastic tool for teaching children. There are, to start, a few applications. In addition, this will provide more educational tools, including the ability to learn poems, letters, words, flowers, fruits, animals, clothes, families, and a host of other topics. The waterfall approach will be used by this system to facilitate easy development and expedite the completion of necessary software requirements.

## 1.7 The Waterfall Model

Since our needs are set, the waterfall model, which I have suggested as the best, is the best option.

## 1.8 My usage of waterfall and why

For software engineering and IT projects, the most widely used variant of the systems development life cycle is called waterfall. It follows a step-by-step, waterfall-like procedure with only one direction.



## 1.11 Gantt Diagram

This is a production control tool, a Gantt chart. I can use this tool to keep track of whether a task is completed.

Action	Name of Assignment	W e 1	W e 2	W e 3	W e 4	W e 5	W e 6	W e 7	W e 8	W e 9	W e 10	W e 11	W e 12
Planning	Idea												
	Problem Defining												
	Planning												
Requirement	Requirement clarification												
	Requirement Analysis												
System Design	Drawing												
Design Database	Specifications for Design												
Progress	Encoding												
	Execution												
Testing													
Supply													

### 1.12 WBS Scheduling for the Development Stage

<b>Action</b>	<b>Duration of Time</b>	<b>Week total</b>
<b>Conversation</b>	First Week	01
<b>Brainstorming</b>	First Week	01
<b>Problem Defining</b>	First Week, Second Week	02
<b>Requirement clarification</b>	Second Week, Second Week	02
<b>Requirement analysis</b>	Second Week, Week three	02
<b>Drawing</b>	Week Four	01
<b>Design specification</b>	Week Four, Week Five	02
<b>Coding</b>	Week Five, Week Six, Week Seven, Week Eight, Week Nine.	05
<b>Implementation</b>	Week Six, Week Seven, week Eight, Week Nine, Week Ten	05
<b>Testing</b>	Week Five, Week Six, Week Seven, Week Eight, Week Nine, Week Ten, Week Eleven	07
<b>Delivery</b>	Week Twelve	01

### **1.13 Connected Work**

I noticed a few web applications that are similar to my web application. But there is no suchweb application that what I need. That's why I have built it.

### **1.13 Problem Statements**

- All of kids learning application based on animation.
- Learn with smart way.
- Skills development and progress tracking.

### **1.14 Suggested Resolution**

I observed those issues with the current system. I decided to develop and repair everything.

- A user-friendly UI layout.
- Report generation.
- Video learning system.
- Painting board.
- Quiz Option.

**Software Requirements Specification  
for  
Chapter 2**

## **Section 2:**

**2. Software prerequisites Specification:** The user requirements and project nature are reflected in the Software Requirements specification. The report is typically written at the beginning of the validation procedure. It is ready for any type of project or application that involves system planning. To compile the SRS report, a few guidelines must be adhered to. Records of the planning, security, and application processes are contained in this report.

### **2.1 Essential Function:**

- Authorization
- Authentication
- Playing educational games
- Drawing their creativity and imagination
- Learn Poems, Words, Fruits, Flowers, many more.
- kids can learn math.

### **2.1 Non-Muscular Conditions:**

- Usability,
- Availability,
- Reliability,
- Recovery,
- Maintenance,
- Security and Data Integrity

Table 2.3.1: Details of Software Requirements

<b>iD</b>	<b>Name of Requirement</b>	<b>An explanation</b>	<b>F/N</b>	<b>First priority</b>
<b>01</b>	Home page	User can select option	Functional	High
<b>02</b>	Quiz	User can select quiz and play quiz game	Functional	Medium
<b>03</b>	Games	User can play games by selected games option	Functional	High
<b>04</b>	Video	User can learn alphabet by watching video or animation.	Functional	Medium
<b>05</b>	Paint	User can draw something	Functional	Medium
<b>06</b>	Success	Admin can show success	Functional	High

## **Chapter 3**

### **REQUIREMENTS ANALYSIS**



### 3.1 Use Case Diagram:

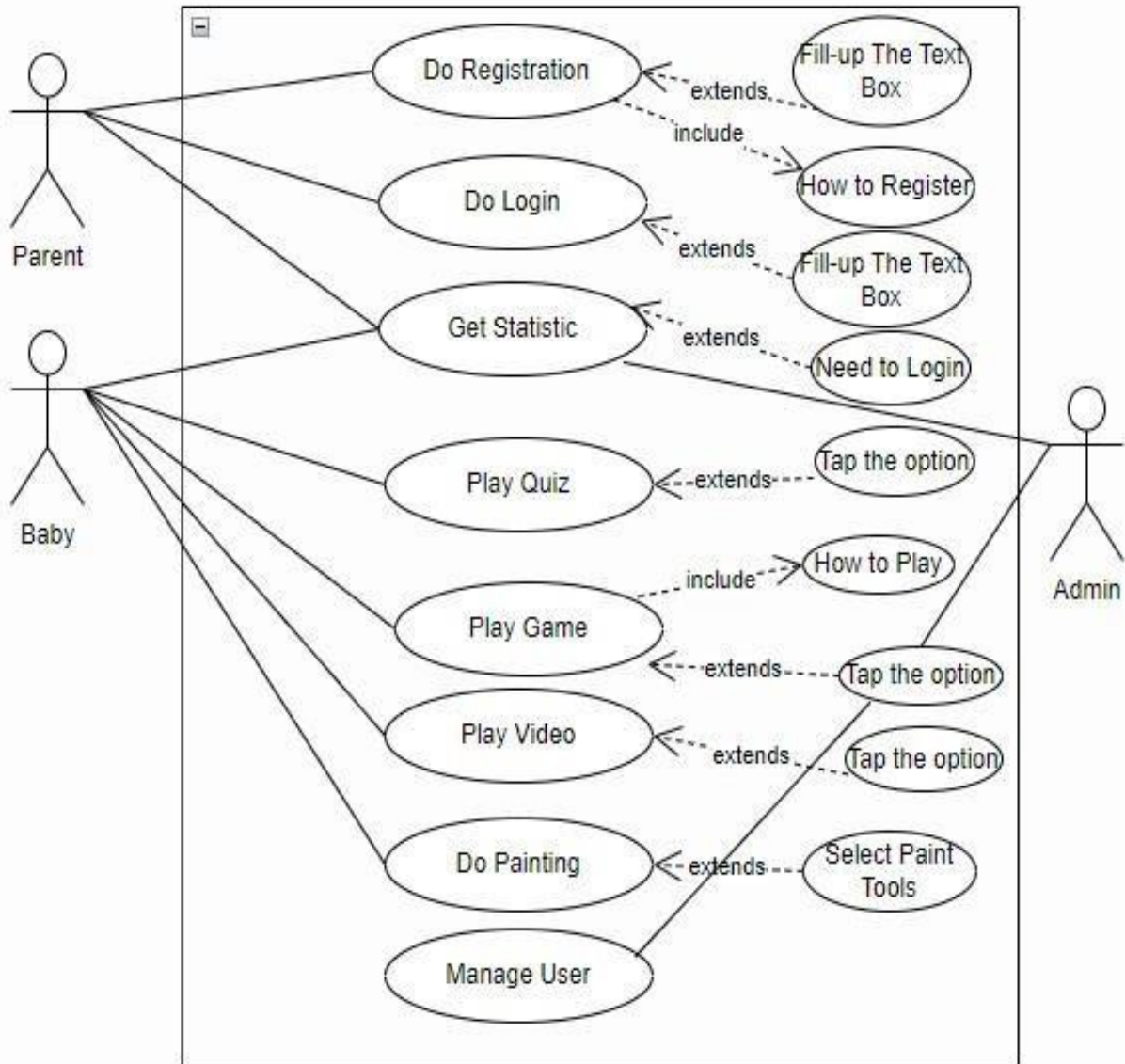


Figure 3.1: Use Case Diagram

### 3.2 Case Description:

<b>Use Case</b>	<b>Parent Role</b>
<b>Goal</b>	To create registration and Get Statistic
<b>Preconditions</b>	User type must be admin
<b>Post Condition</b>	N/A
<b>Primary Actors:</b>	Admin
<b>Secondary Actors:</b>	User
<b>Trigger</b>	Manage User
<b>Description:</b>	Manage user data and get statistic
<b>Alternative Flows</b>	N/A

Figure 3.2: Synopsis of the Case (Parent)

<b>Use Case</b>	<b>Baby Role</b>
<b>Goal</b>	To access all use case data
<b>Preconditions</b>	Need a browser
<b>Post Condition</b>	N/A
<b>Primary Actors:</b>	Parent
<b>Secondary Actors:</b>	Admin
<b>Trigger</b>	Home Page
<b>Description:</b>	Baby can play games, watching video and do painting.
<b>Alternative Flows</b>	N/A

Figure 3.2: Synopsis of the Case (Baby)

<b>Use Case</b>	<b>Admin Role</b>
<b>Goal</b>	Admin can manage user data and get statistic
<b>Preconditions</b>	Need a browser
<b>Post Condition</b>	N/A
<b>Primary Actors:</b>	Parent
<b>Secondary Actors:</b>	Admin
<b>Trigger</b>	Home Page
<b>Description:</b>	Baby can play games, watching video and do painting.
<b>Alternative Flows</b>	N/A

Figure 3.3: Synopsis of the Case (Admin)

### 3.3: Activity Diagram:

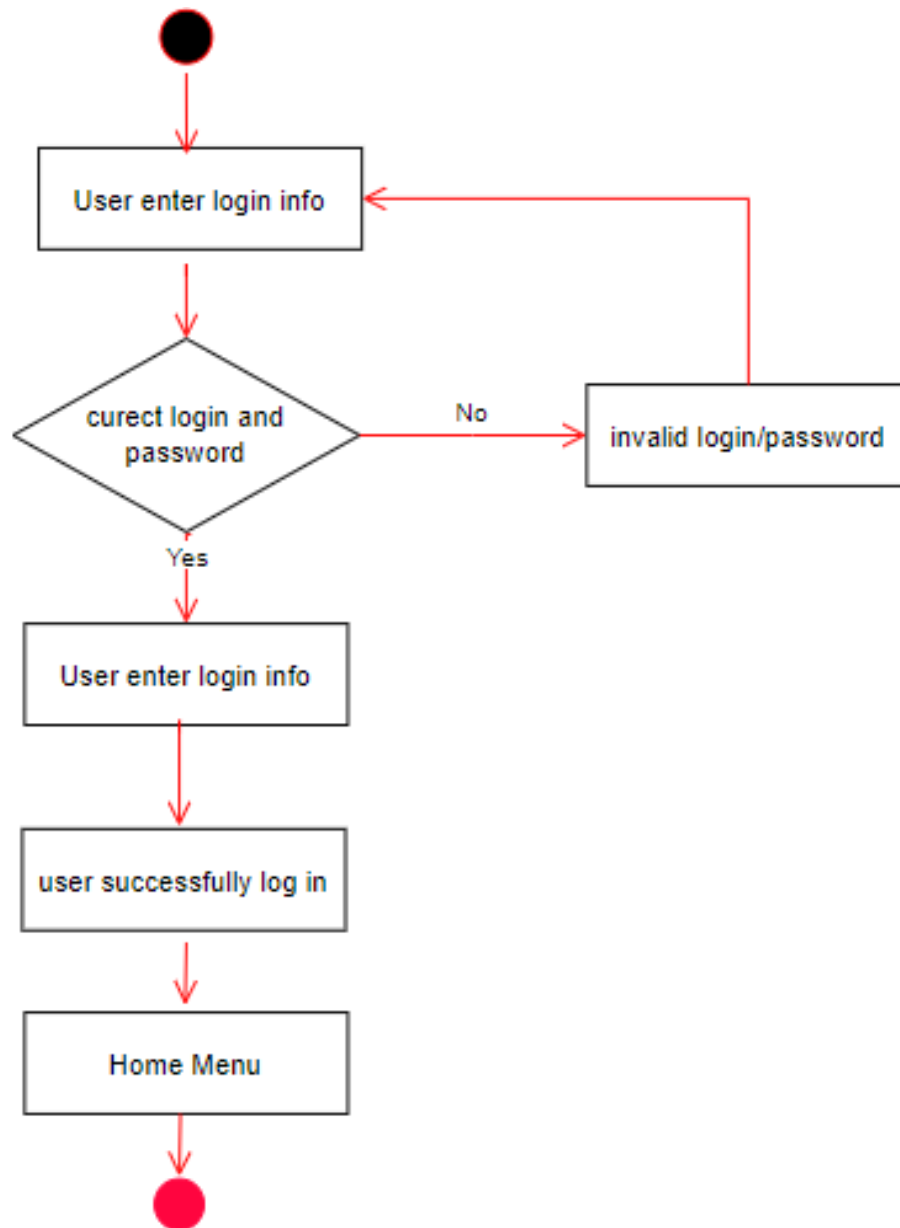


Figure: Activity Diagram (user login)

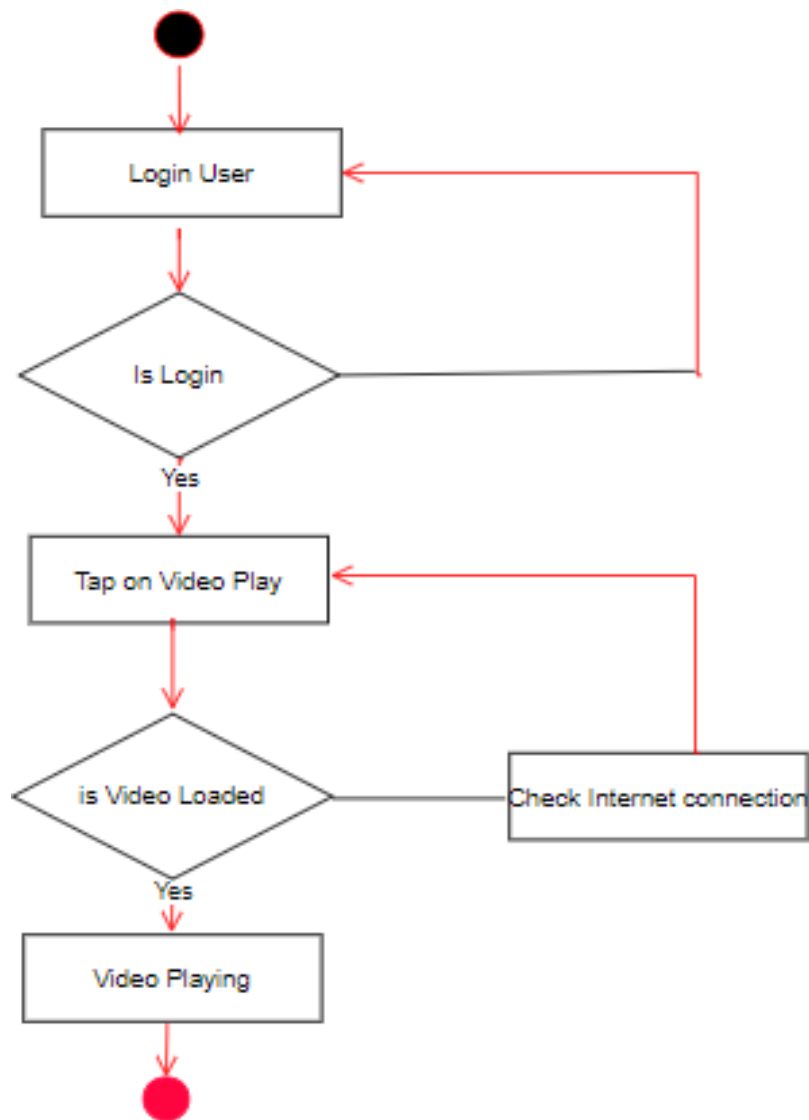


Figure: Activity Diagram (Play Video)

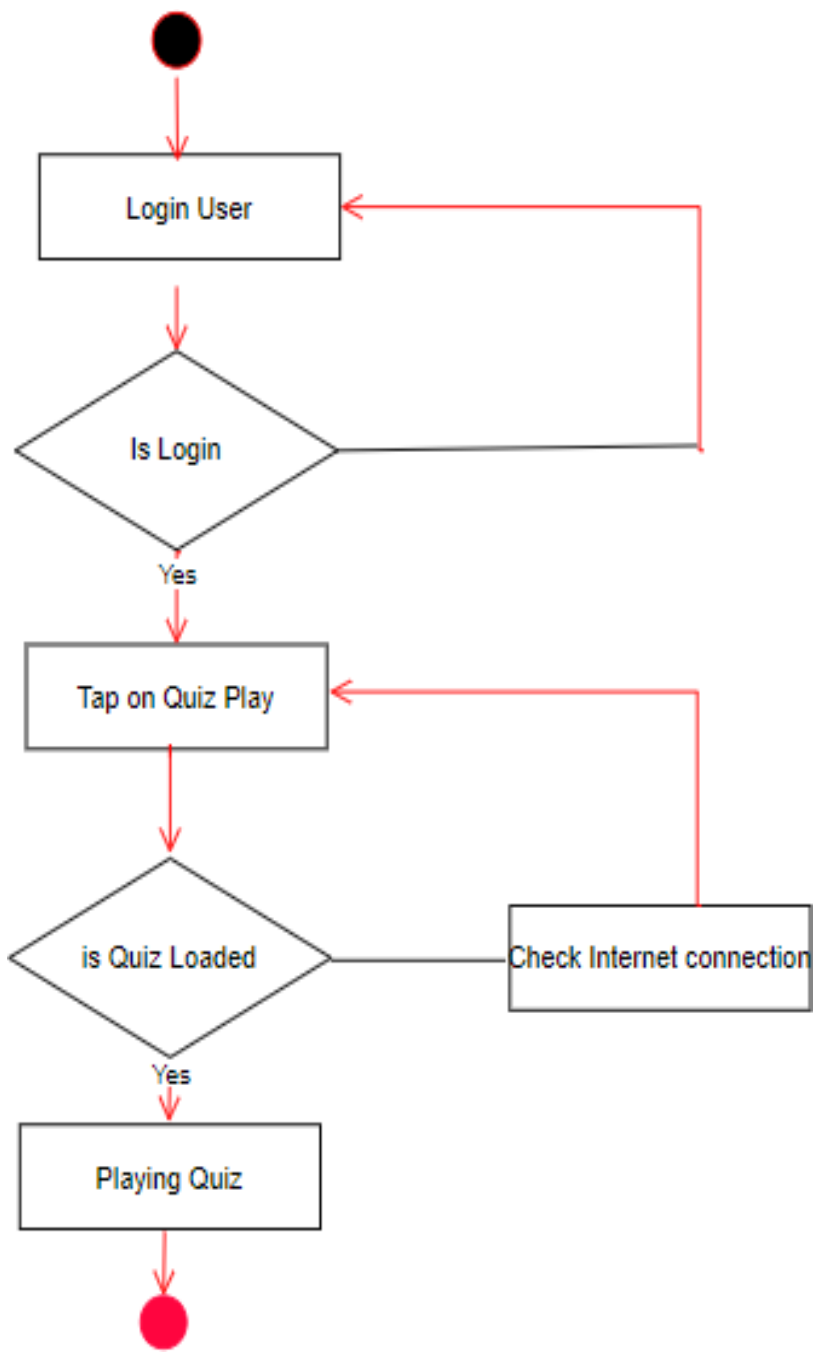


Figure: Activity Diagram (play quiz)

### 3.4 Sequence Diagram:

Because sequence diagrams concentrate on lifelines—that is, concurrent processes and objects—and the messages that are sent back and forth between them to accomplish a task before the lifeline terminates, they are a well-liked dynamic modeling technique in UML. Use this guide to learn everything there is to know about sequence diagrams in UML in conjunction with our UML diagramming tool.

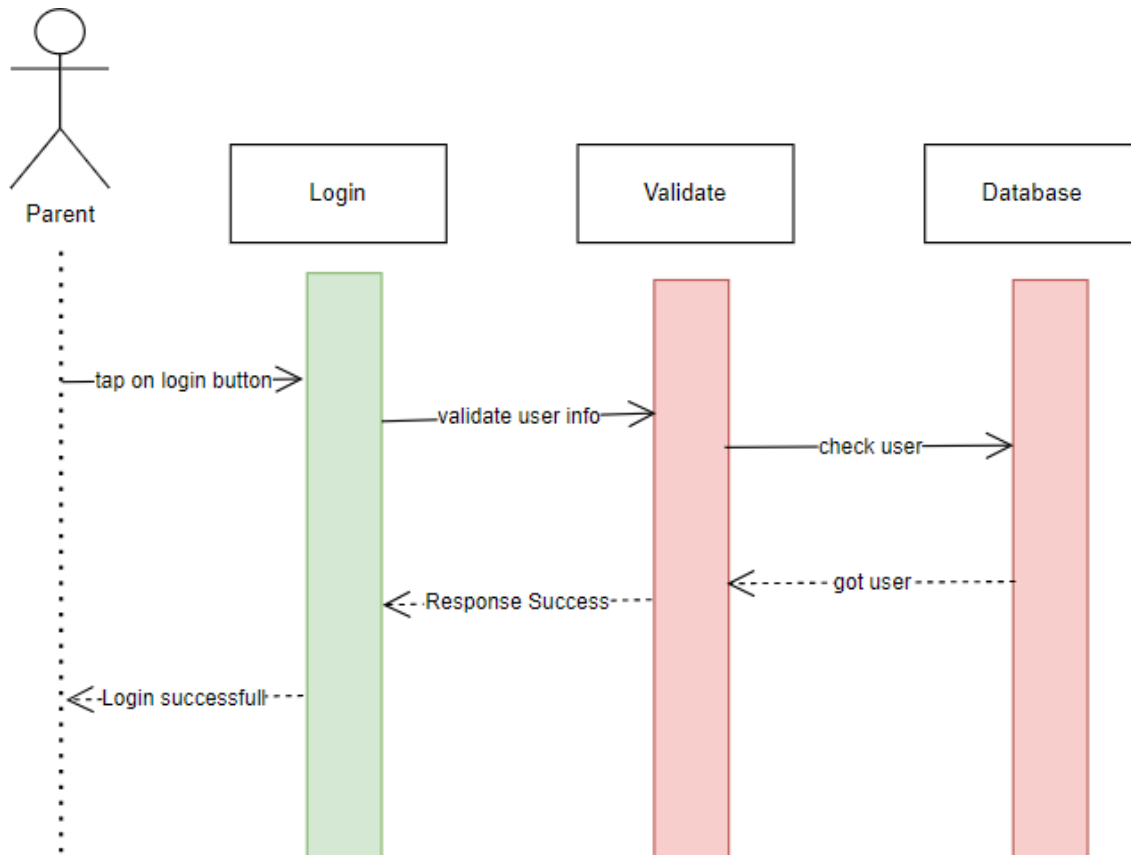


Figure: User login Sequence Diagram



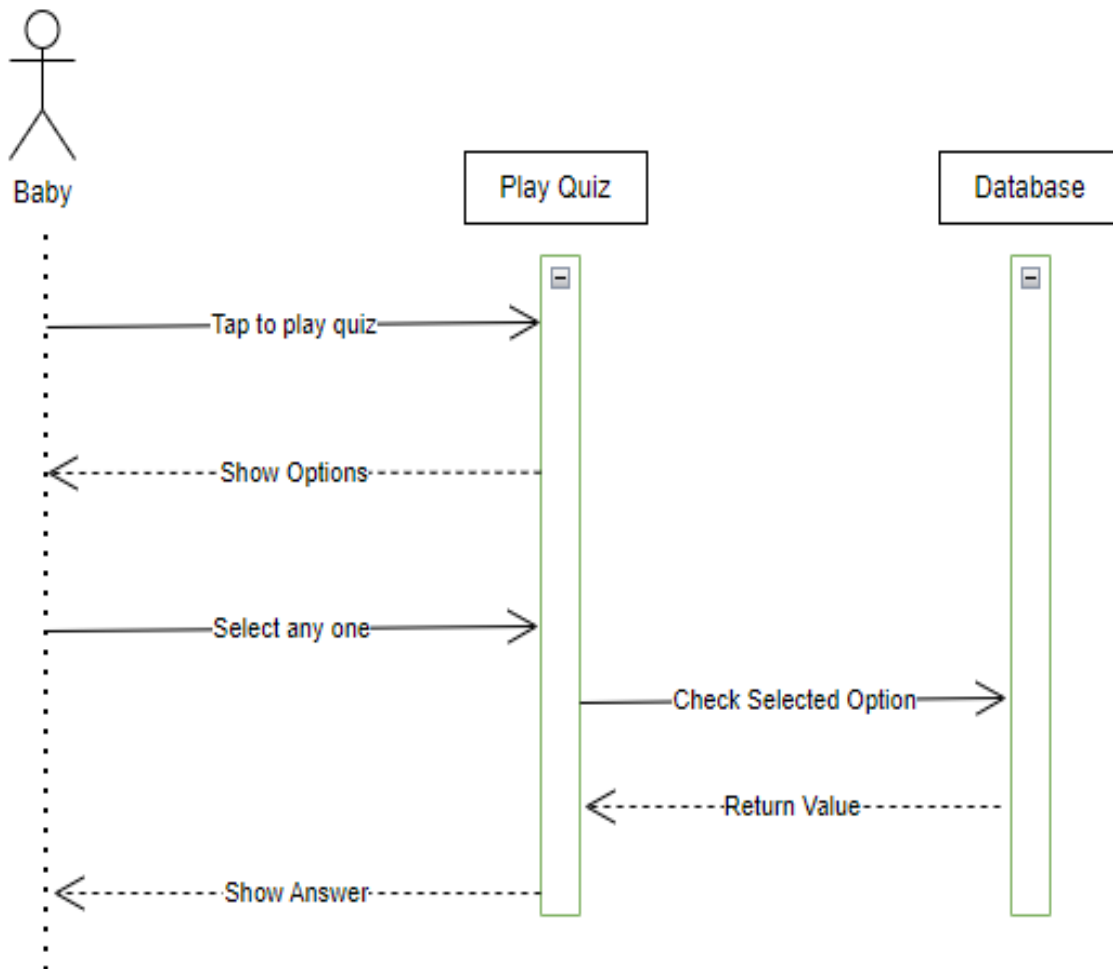


Figure: User Play Quiz

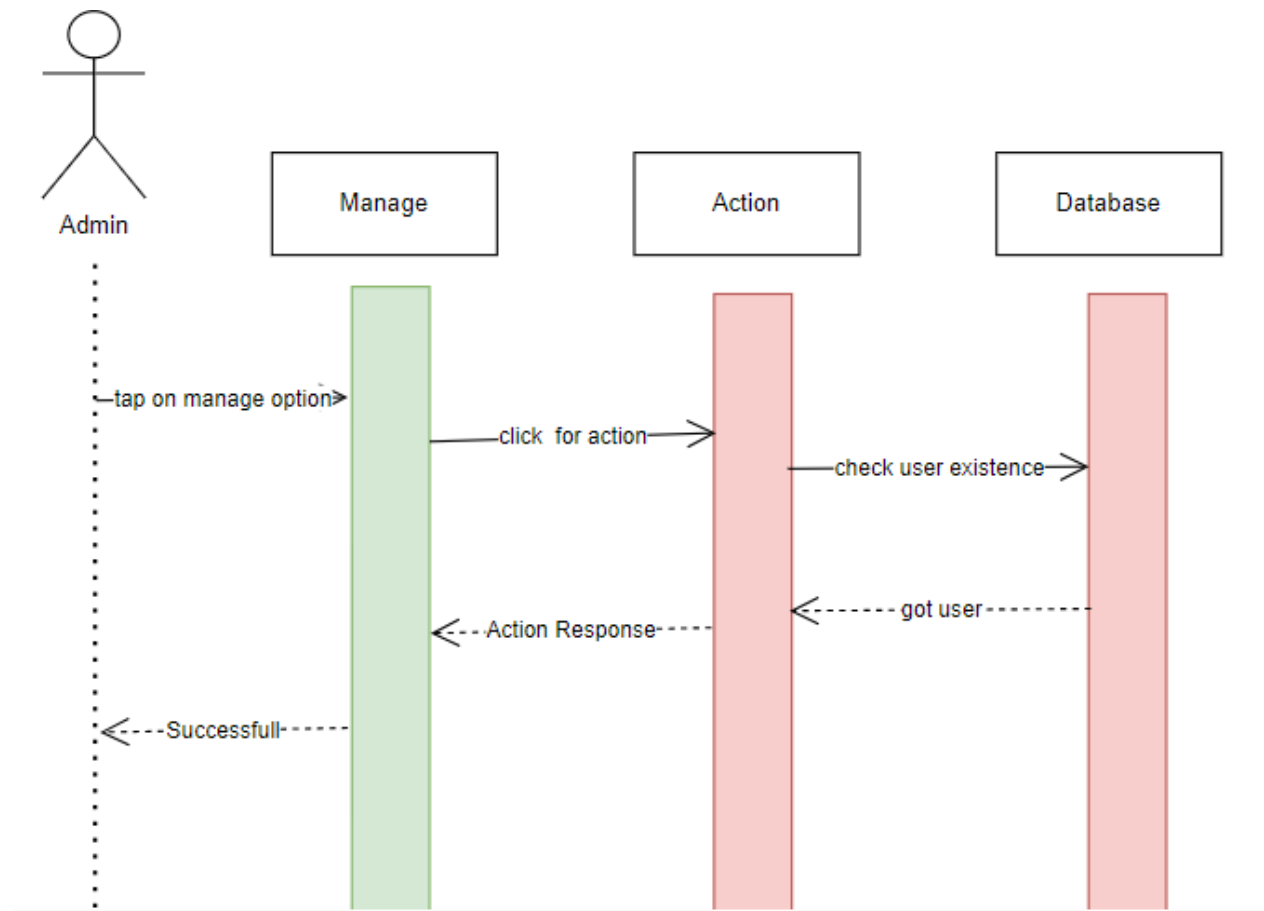


Figure: User Mangement

### 3.4: ER Diagram:

A system's various entities and their relationships to one another are represented visually in an entity relationship diagram (ERD), which also serves as a representation of the system's entity.

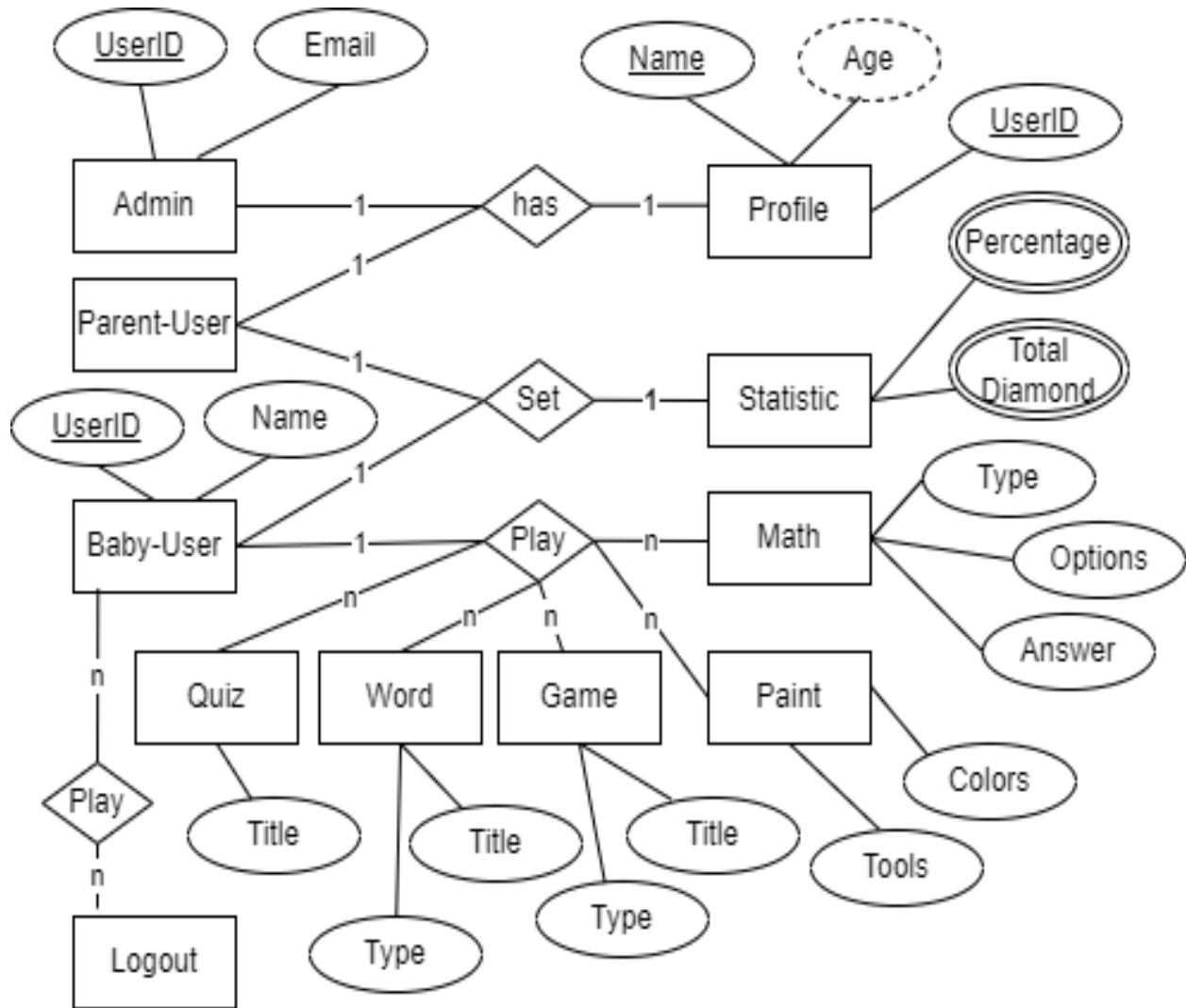


Figure ER Diagram

### 3.5 : Class Diagram:

Class diagrams, which model classes, properties, functions, and relationships between the objects or classes, are among the most widely used and helpful forms of diagrams for clearly mapping the structure of a given system.

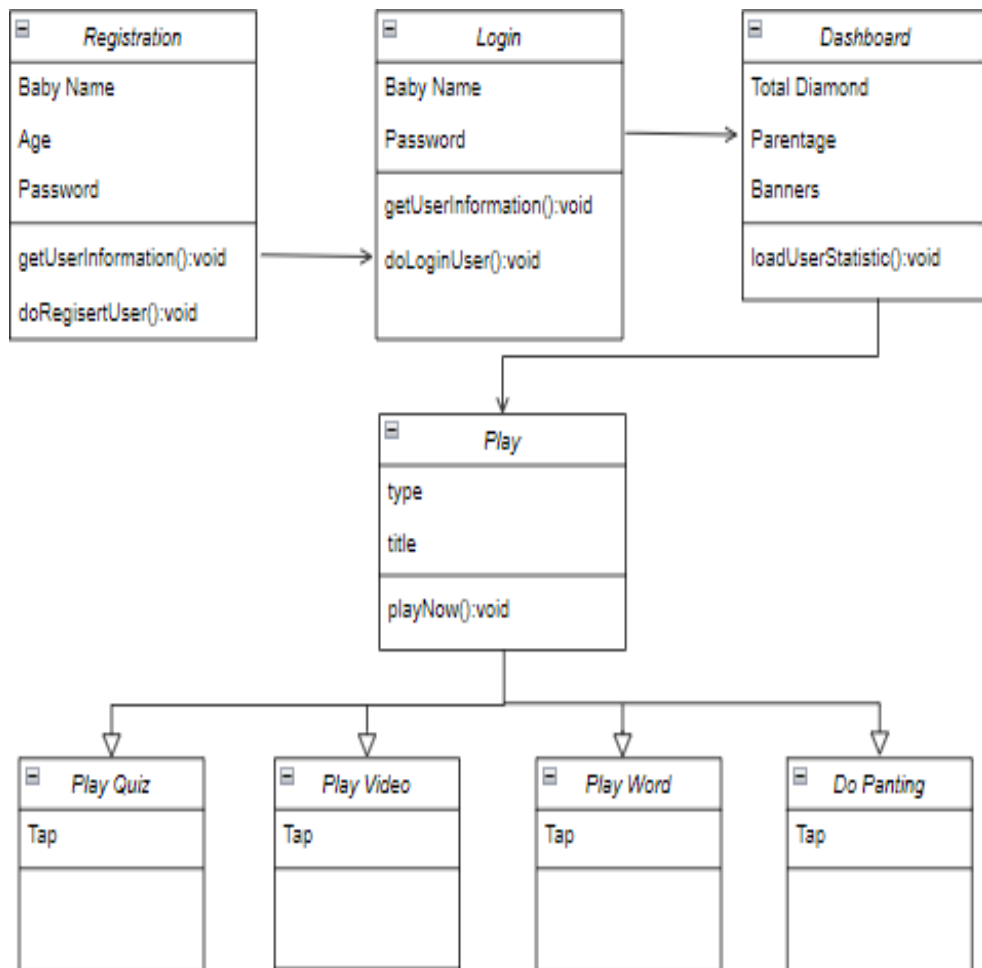


Figure Class Diagram

# **System Design Specifications, Chapter 4**

## **Section 4:**

### **Technology & Development Tools**

The following list includes the technologies and tools utilized in this project:

#### **4.1 User Interface Technology**

- Android Studio
- Dart (helped android studio as better performance)

#### **4.2 Framework**

- Flutter

#### **4.3 Programming Language**

- Dart

#### **4.4 Database**

- Firebase

# Chapter 5: User Manual

## 5.1 Interface with Users

### 5.1.1 Sign-Up Page:

User need to sign up by using their name and age before play games, solve quiz, draw something and video learning.

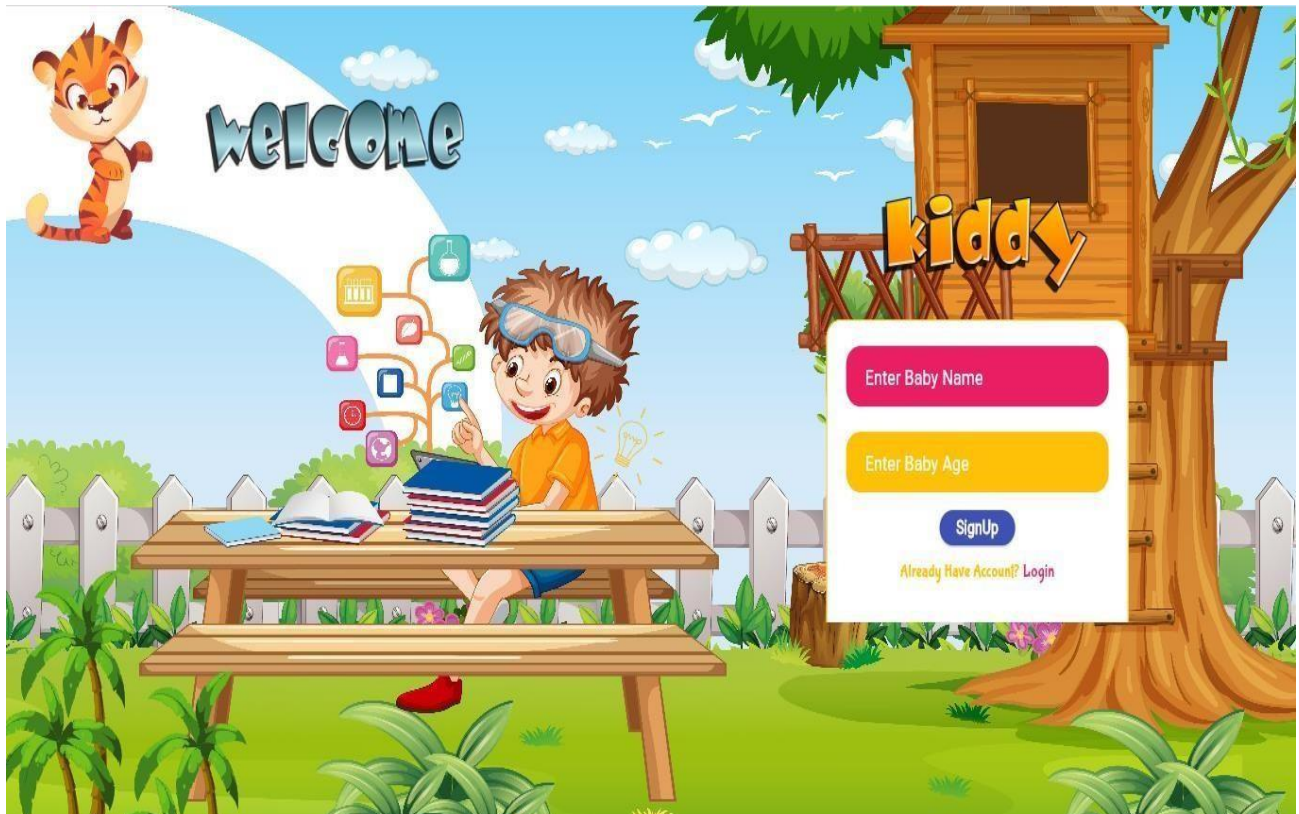


Figure 5.1.1: Sign-Up page

## 5.1.2 Home Page:

User can select any option or page from here. Here is Quiz, Game, Videos, Math, Words, Poems, Draw. Here we can see also diamond shape score board it will progress children's skills. Parents can check the scoreboard to track the progress of their children's skills.

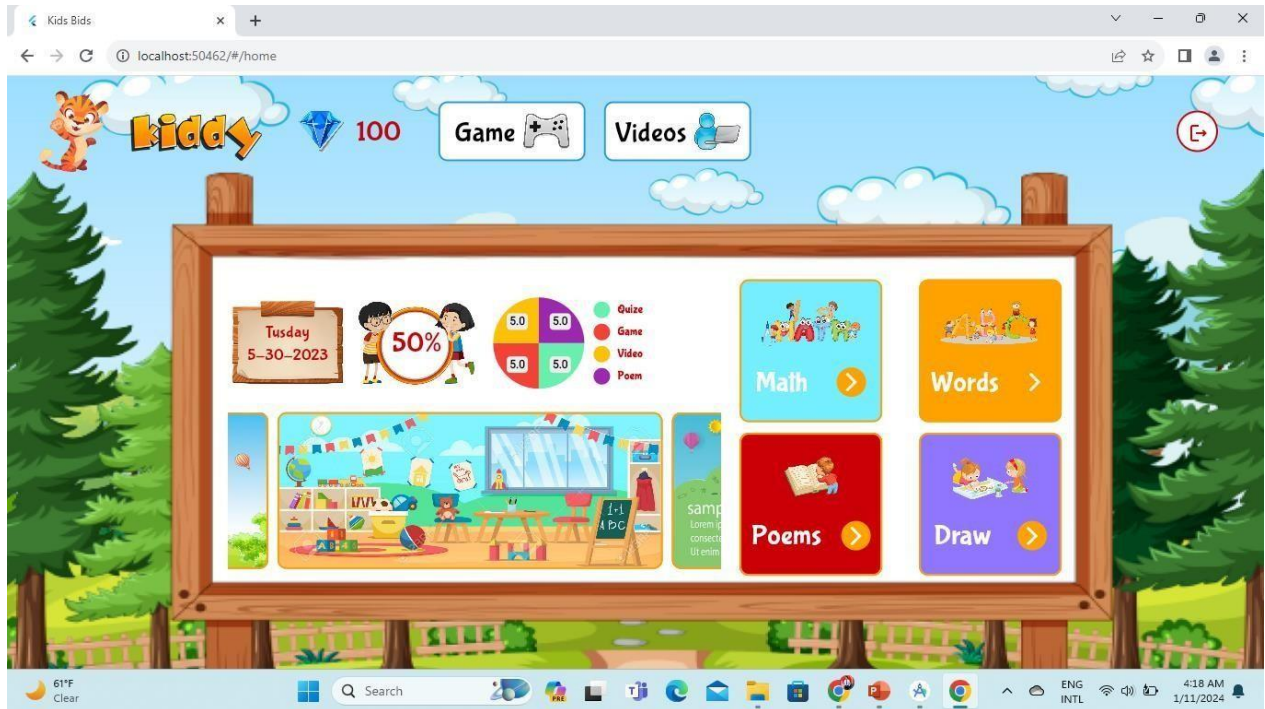


Figure 5.1.2: Home Page



### 5.1.3 Math Page:

Here Kids can learn math solutions such as Addition, Subtraction, Multiplication, Division.

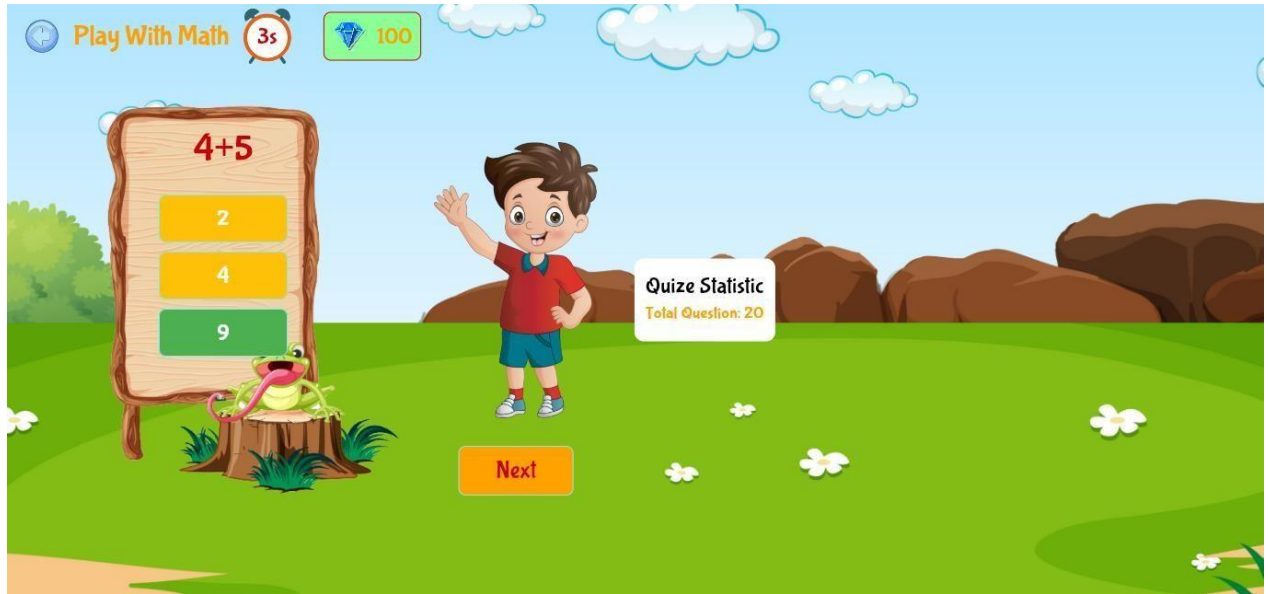


Figure 5.1.3: Math Page

### 5.1.4 Paint Board:

Kids can draw their imagination on paint board.

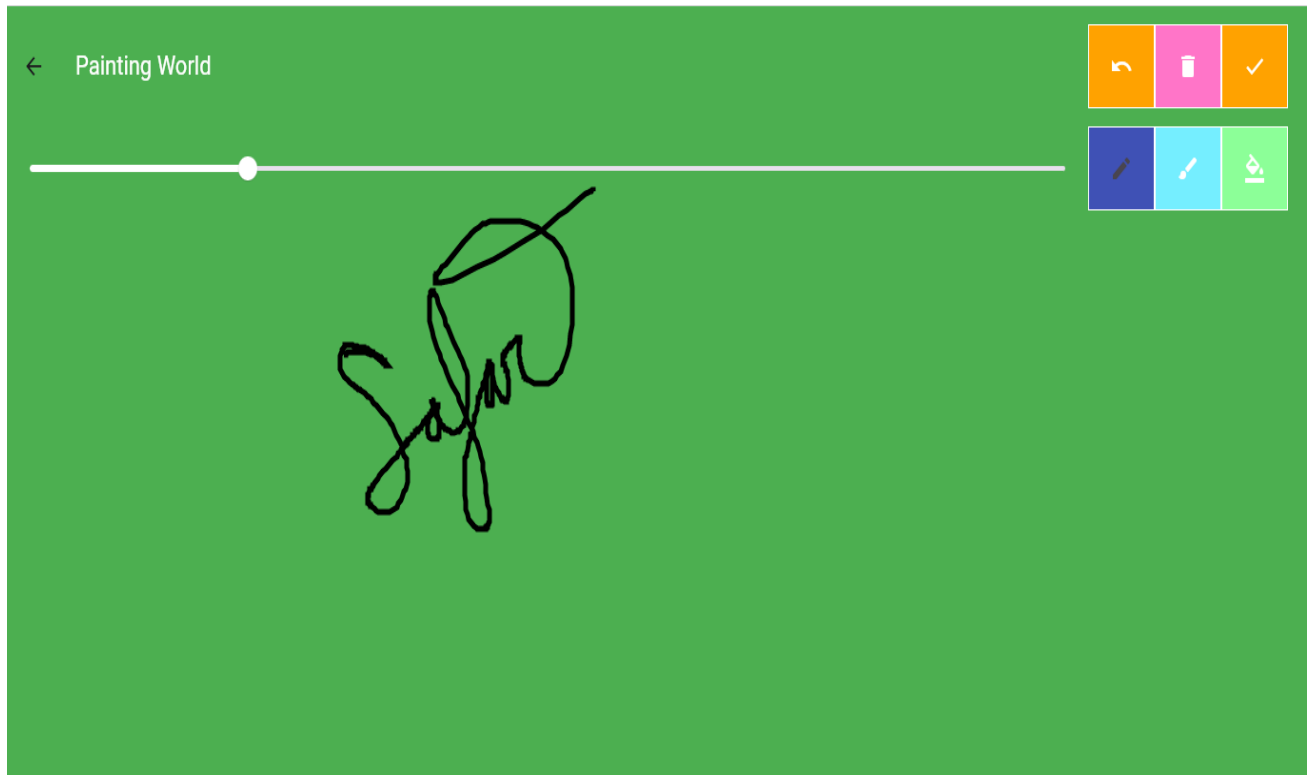


Figure 5.1.4: Paint Board

## **Chapter 6 : Evaluating**

### **Section 6:**

## **Sixth Tests for Systems**

### **6.1 Examining Systems**

The testing process assesses a software application's functionality to determine whether it satisfies user needs and finds system flaws.

System testing is important since it is the initial level of testing for the entire program.

- Must observe the object of testing, the anticipated result, and the actual input.
- A project lacking a test plan indicates a low-quality system that was produced. It is also unacceptable. The system will undergo data testing to determine its capacity to manage a range of conditions, from basic to extreme.

**Example of Test:**

<b>First test case</b>		<b>Name of case:</b> Login Page		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b> 06/30/2023		
<b>carried out by:</b> Ahmedul Haque		<b>Executed date:</b> 12/30/2023		
<b>Short Desc:</b> Target to create account				
<b>Precondition:</b> Sign up and Login Users				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	All data in case	Application sends information to database	Pass	
<b>Post Condition:</b> N/A				
<b>Failure:</b> If you're not logged in, it will say to log in first.				

<b>Case Tow</b>		<b>Case name:</b> Home Page		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b> 06/30/2023		
<b>Executed by:</b> Ahmedul Haque		<b>Executed date:</b> 12/30/2023		
<b>Short Desc:</b> Target to select any page				
<b>Precondition:</b> N/A				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	All Data in Case	Application shows successful result	Pass	
<b>Post Condition:</b> N/A				
<b>Fail Case:</b> System will show error				

<b>Case Three</b>		<b>Case name:</b> Math Solutions		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b>		
<b>Executed by:</b>		<b>Executed date:</b>		
<b>Short Desc:</b> Verify that user can play math games				
<b>Precondition:</b> Need to pass previous test				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	Click on games options	Application shows successful result	Pass	
<b>Post Condition:</b> N/A				
<b>Fail Case:</b> System will show error				

<b>Case Four</b>		<b>Case name:</b> Play Quiz		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b> 06/30/2023		
<b>Executed by:</b> Ahmedul Haque		<b>Executed date:</b> 12/30/2023		
<b>Short Desc:</b> Verify that user can play quiz				
<b>Precondition:</b> Need to pass test case #1				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	Click on Quiz option	Application shows successful result	Pass	
<b>Post Condition:</b> N/A				
<b>Fail Case:</b> System will show error				



<b>Case Five</b>		<b>Case name:</b> Play Video		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b> 06/30/2023		
<b>Executed by:</b> Ahmedul Haque		<b>Executed date:</b> 12/30/2023		
<b>Short Desc:</b> Verify that user can play video				
<b>Precondition:</b> Need to pass test case #1				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	Click on video option	Application shows successful result	Pass	
<b>Post Condition:</b> N/A				
<b>Failure:</b> The system will display an error				

<b>Test case #6</b>		<b>Case name:</b> Drawing Board		
<b>System:</b> Kids Learning Web Application		<b>Subsystem:</b> N/A		
<b>Designed by:</b> Ahmedul Haque		<b>Design date:</b> 06/30/2023		
<b>Executed by:</b> Ahmedul Haque		<b>Executed date:</b> 12/30/2023		
<b>Short Desc:</b> Verify that user can draw something on drawing board				
<b>Precondition:</b> Need to pass test case #1				
<b>Step:</b>	<b>Action</b>	<b>Response</b>	<b>Pass/ Fail</b>	<b>Comment</b>
1	Click on Draw option	Application shows successful result	Pass	
<b>Post Condition:</b> N/A				
<b>Fail Case:</b> System will show error				

## **Chapter 7: SUMMARY**

## **Chapter 7:**

### **Project Synopsis**

#### **7.1 Restrictions**

- At present, this system isn't entirely optimized for the iOS platform.

#### **7.2 Difficulties and Successes**

##### **Challenge:**

- Adapt to emerging technologies

##### **Accomplishments:**

- **Acquired new technological knowledge**
- **Constructed a web application suitable for production use.**

#### **7.3 Upcoming Projects**

Even if the system was developed well, there will be some significant changes in the future, such as:

- **Android & iOS application**
- **Basic to intermediate learning system will be included**

## REFERECES

1. Stephen Schutz founded Starfall on August 27, 2002. Source: [https://en.wikipedia.org/wiki/Starfall\\_\(website\)](https://en.wikipedia.org/wiki/Starfall_(website)).

2. PBS Kids, available online at <https://pbskids.org/learn/>.

3. Your youngster may learn about letters, sounds, and words with the help of this app, which is packed with games, activities, and movies. The source is:

[https://play.google.com/store/apps/details?id=com.sesameworkshop.elabcs.play&hl=en\\_US&pli=1](https://play.google.com/store/apps/details?id=com.sesameworkshop.elabcs.play&hl=en_US&pli=1).

As a "gamified platform for student engagement," Quiz enables you to make, modify, and distribute entertaining and engaging tests and classes. What is Quizizz and how to use it with.html may be found at

<https://www.educatorstechnology.com/2022/10>.

5. The Kahoot! Kids is an educational playground for young children ages 3 to 12 where they can play skill- and age-appropriate games. via this link: <https://kahoot.com/home/kahoot-kids>.

