

# KID'S LEARNING TOOL

NEETHU P  
RollNo:MES23MCA-2036

Department of Computer Applications  
MES College of Engineering  
Kuttippuram

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# Introduction

- ▶ The Kid's Learning Tool is an Android-based educational application designed for children aged 5 and above. It combines advanced technologies like Malayalam handwriting recognition using Convolutional Neural Networks (CNN), puzzles, storytelling, and speech recognition.
- ▶ The app is complemented by a web platform for parents to monitor their child's progress securely
- ▶ The goal is to make screen time meaningful, combining education with entertainment while empowering parents to actively participate in their child's learning journey.

# Existing System

- ▶ **Distinctive Features:** Combines Malayalam handwriting recognition, puzzles, storytelling, and speech recognition.
- ▶ **Comprehensive Learning :** Supports cognitive, linguistic, and creative development.
- ▶ **Unique Approach :** Offers integrated features not commonly found in other educational apps.
- ▶ **Check for Updates :** Explore app stores or contact developers for the latest information on releases and updates.

# Proposed System

- ▶ **Enhanced Learning Experience** : Tailored for children aged 5 and above to make smartphones and tablets more productive
- ▶ **Cognitive Development**: Use Includes diverse puzzles (number- and image-based) with adaptive difficulty levels
- ▶ **Parental Involvement** : Offers a web platform for progress tracking and insights into milestones.
- ▶ **Story Mode** : Features inspiring narratives to enhance listening, pronunciation, and language skills.
- ▶ **Speech Recognition** :Improves verbal communication through interactive exercises.

# System Requirements

## ► Hardware:

- Minimum Intel i5 processor, 8GB RAM.

## ► Software:

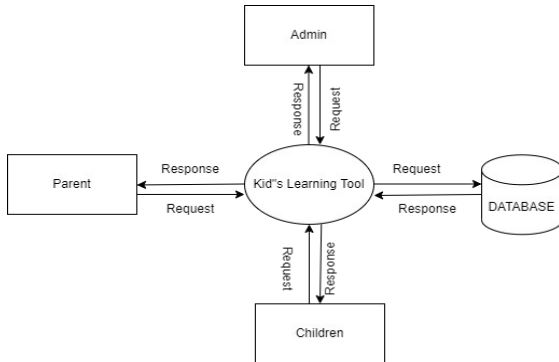
- Backend: MYSQL Server.
- Frontend: HTML, CSS, JavaScript .
- Languages: Python,Dart.

## ► Development Tools:

- IDE: Visual Studio Code,Android studio.

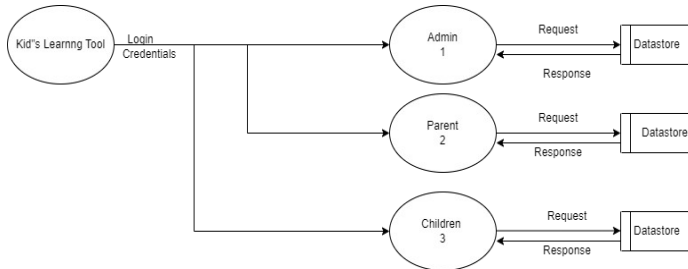
# DFD

## ► DFD Level - 0



# DFD

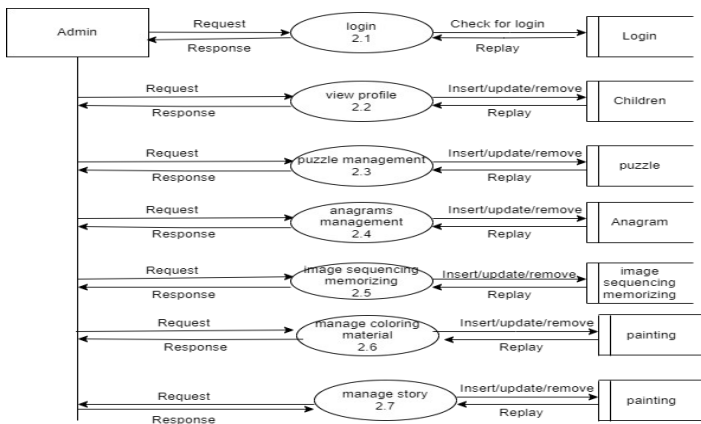
## ► DFD Level - 1





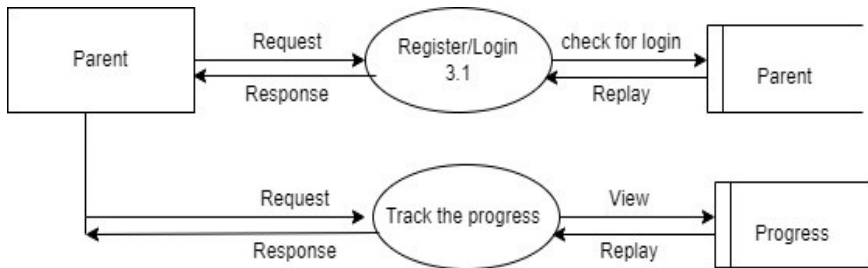
# DFD

## ► DFD Level - 2 Admin



# DFD

## ► DFD Level - 2 Parent



# DFD

## ► DFD Level - 2 Children



# User Story

| User story ID | As a  | I want to                                 | So that I can  |
|---------------|-------|---|--|
| 1             | Admin | Login                                     | Access the system.   |
| 2             | Admin | View Profile                              | Admin can view the profiles of children.                       |
| 3             | Admin | Manage Trainings                          | Trains the children [alphabet, numbers, pronunciation]         |
| 4             | Admin | Puzzle management                         | create a puzzle to children by uploading images.               |
| 5             | Admin | Anagrams management                       | create a shuffled words  |
| 6             | Admin | Image sequencing<br>memorizing management | upload images to children for testing the memory [delete,add]. |

# User Story

|    |          |                           |  |
|----|----------|---------------------------|--|
| 7  | Admin    | Manage colouring material | create a image to children for colouring[add,delete].                      |
| 8  | Admin    | Manage story              | Manage the stories .   |
| 9  | Parent   | Register and login        | To access the system   |
| 10 | Parent   | Track the progress        | Track the progress of children.  |
| 11 | Children | Listen story              | Listen to the story.   |
| 12 | Children | Practice the training     | Pratice the training [alphabet, numbers, pronunciation]                    |
| 13 | Children | Solve the games           | solve the games [puzzle, Anagrams, image sequencing memorizing, colouring] |
| 14 | Children | Listen the sounds         | Listen the sounds of birds and animals,alphabets,organs                    |

# Product Backlog

| ID | Name   | Priority | Estimate hours | Sprint | Status   |
|----|--|----------|----------------|--------|----------|
| 1  | Login into the system                        | Medium   | 7              | 1      | planning |
| 9  | To access the system                         | Medium   | 9              |        | planning |
| 2  | View the profile of children                 | Medium   | 8              |        | planning |
| 3  | Trains the children                          | High     | 13             | 2      | planning |
| 4  | Verify Create a puzzle to children           | High     | 14             |        | planning |
| 5  | Create a shuffled words to children          | High     | 10             | 3      | planning |
| 7  | create images to children for testing memory | High     | 10             |        | planning |
| 6  | upload images to children for painting       | High     | 10             |        | planning |
| 8  | Gives stories to children                    | High     | 13             |        | planning |

# Product Backlog

| ID | Name   | Priority | Estimate hours | Sprint | Status   |
|----|--|----------|----------------|--------|----------|
| 11 | Listen stories   | High     | 12             | 4      | planning |
| 13 | Solve the games  | High     | 10             |        | planning |
| 12 | Pratice the trainings                                    | High     | 12             | 5      | planning |
| 10 | Track the progress                                       | Medium   | 9              |        | planning |
| 14 | Listen the sounds of birds and animals, alphabet, organs | High     | 9              |        | planning |

# Project Plan

| ID | Sprint   | Start Date | End Date | Days | Status   |
|----|----------|------------|----------|------|----------|
| 1  | Sprint 1 |            |          |      | planning |
| 9  |          |            |          |      | planning |
| 2  |          |            |          |      | planning |
| 3  | Sprint 2 |            |          |      | planning |
| 4  |          |            |          |      | planning |
| 5  | Sprint 3 |            |          |      | planning |
| 7  |          |            |          |      | planning |
| 6  |          |            |          |      | planning |
| 8  |          |            |          |      | planning |



# Project Plan

| ID | Sprint   | Start Date | End Date | Days | Status   |
|----|----------|------------|----------|------|----------|
| 11 | Sprint 4 |            |          |      | planning |
| 13 |          |            |          |      | planning |
| 12 | Sprint 5 |            |          |      | planning |
| 10 |          |            |          |      | planning |
| 14 |          |            |          |      | planning |

# Sprint Backlog

| Backlog item                  | Status and completion date | Estimate hours | Day 1 hrs | Day 2 hrs | Day 3 hrs | Day 4 hrs | Day 5 hrs | Day 6 hrs | Day 7 hrs | Day 8 hrs | Day 9 hrs | Day 10 hrs | Day 11 hrs | Day 12 hrs | Day 13 hrs | Day 14 hrs | Day 15 hrs |
|-------------------------------|----------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sprint 1                      |                            |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Login into the system         | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Parent registration and login | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| View children                 | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |

| Backlog item      | Status and completion date | Estimate hours | Day 1 hrs | Day 2 hrs | Day 3 hrs | Day 4 hrs | Day 5 hrs | Day 6 hrs | Day 7 hrs | Day 8 hrs | Day 9 hrs | Day 10 hrs | Day 11 hrs | Day 12 hrs | Day 13 hrs | Day 14 hrs | Day 15 hrs |
|-------------------|----------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sprint 2          |                            |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Training material | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Puzzle management | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |

# Sprint Backlog

| Backlog item                | Status and completion date | Estimate hours | Day 1 hrs | Day 2 hrs | Day 3 hrs | Day 4 hrs | Day 5 hrs | Day 6 hrs | Day 7 hrs | Day 8 hrs | Day 9 hrs | Day 10 hrs | Day 11 hrs | Day 12 hrs | Day 13 hrs | Day 14 hrs | Day 15 hrs |
|-----------------------------|----------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sprint 3                    |                            |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Anagram management          | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| coloring material           | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Image sequencing memorizing | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Mange story                 | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |

# Sprint Backlog

| Backlog item    | Status and completion date | Estimate hours | Day 1 hrs | Day 2 hrs | Day 3 hrs | Day 4 hrs | Day 5 hrs | Day 6 hrs | Day 7 hrs | Day 8 hrs | Day 9 hrs | Day 10 hrs | Day 11 hrs | Day 12 hrs | Day 13 hrs | Day 14 hrs | Day 15 hrs |
|-----------------|----------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sprint 4        |                            |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Listen stories  | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Solve the games | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |

| Backlog item   | Status and completion date | Estimate hours | Day 1 hrs | Day 2 hrs | Day 3 hrs | Day 4 hrs | Day 5 hrs | Day 6 hrs | Day 7 hrs | Day 8 hrs | Day 9 hrs | Day 10 hrs | Day 11 hrs | Day 12 hrs | Day 13 hrs | Day 14 hrs | Day 15 hrs |
|--|----------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sprint 5   |                            |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Practice the trainings                                   | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Track the progress                                       | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |
| Listen the sounds of birds and animals, alphabet, organs | planning                   |                |           |           |           |           |           |           |           |           |           |            |            |            |            |            |            |

## Conclusion

- ▶ In conclusion, the "KID'S LEARNING TOOL" Android application represents a thoughtful and innovative solution to enhance the educational experience of young children in the era of widespread smartphone and tablet adoption.
- ▶ Overall, the "KID'S LEARNING TOOL" exemplifies the positive impact of technology when applied thoughtfully to support children's development and meaningful engagement. By leveraging cutting-edge features and security protocols, the application empowers both children and parents, fostering a collaborative and enriching educational experience in a safe and accessible digital environment

## References

- ▶ <https://https://www.madrasresearch.org/post/handwriting-recognition-system>
- ▶ <https://stackoverflow.com/questions/4583776/jigsaw-puzzle-cutting-piecesfrom-image>
- ▶ K. Gaurav and Bhatia P. K 2013. Analytical Review of Preprocessing Techniques for Offline Handwritten Character Recognition, 2nd International Conference on Emerging Trends in Engineering Management, ICETEM
- ▶ [TensorFlow CNN Tutorial](#)

Thank You