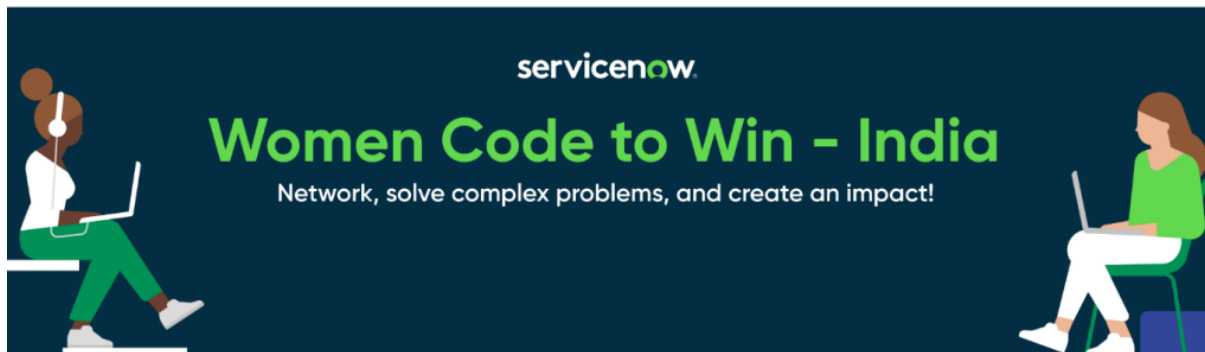# Theme Name: - FUTURE OF EDUCATION

Problem Statement:

With the advancement of technology, educational methods and tools have changed dramatically. Education has now shifted from a more centralized structure to a decentralized model where learning takes place outside of traditional classroom settings. There is a need to provide learning tools that can adapt to the capabilities of the learner, so to provide positive learning experiences. Along with it, we need to develop a sustainable platform for all kids including the under-privileged sections of society so that they have access to the same level of learning opportunities.

Our Solution:

To cater to this problem, we aim to develop a solution that uses cutting-edge technology to provide new and innovative ways of learning that are more interactive, and engaging. It provides students with a more personalized learning experience based on their strengths, weaknesses, and learning styles. This can help students learn more effectively and efficiently.

EduKids

A Smart Learning Platform for Kids

"Let the kids no longer be dependent on Pen and Paper to learn, read and write."

EduKids is an interactive learning platform, especially for kids of age up to 5 to help them learn while playing. This Machine Learning based application helps children draw and learn alphabets, Numbers and Shapes in hassle-free environment that is accessible everywhere without their parents being worried about any accidents occurring with pens and pencils just by using Airpen and Smart Canvas.

Why we are coming up with this solution?

We aim to use technology to open up new and exciting possibilities for education, and it's potential to greatly enhance the learning experience for Kids.

Air Pen and Smart Canvas are the latest tools which detect hand gestures in the air, enabling kids to visualize and write without pen and paper. This is a fun and enjoyable way to spark a young child's interest in academics. And as we know, interactive games and apps simulate a child's senses and they learn much more quickly and efficiently than traditional methods.

## Who are the end-users of our product?

Kids of ages between 2-5, who grasp maximum from their surroundings, will benefit the most from this application. Instead of wasting time playing video games or watching T.V., they can learn to read and write using this app.

We also wish to provide free and evidence-based knowledge to underprivileged kids, who cannot afford to go to schools. They will have the option to learn at their comfort with the minimal requirement of a phone.

What are the top 3 benefits our users will have from our solution?

1. Kids have the advantage of learning alphabets and numbers, addition and subtraction, and identifying objects etc all in a fun and interactive way. This will also make the child tech-oriented.
2. Parents can track their daily screen time and device usage, ensure their kids watch healthy and appropriate content online, and most importantly, learn.
3. The feature of Progress Tracking helps parents to analyse the learning capability of their child, their thinking process and focus on areas in which they need support.

Functional aspect of our idea
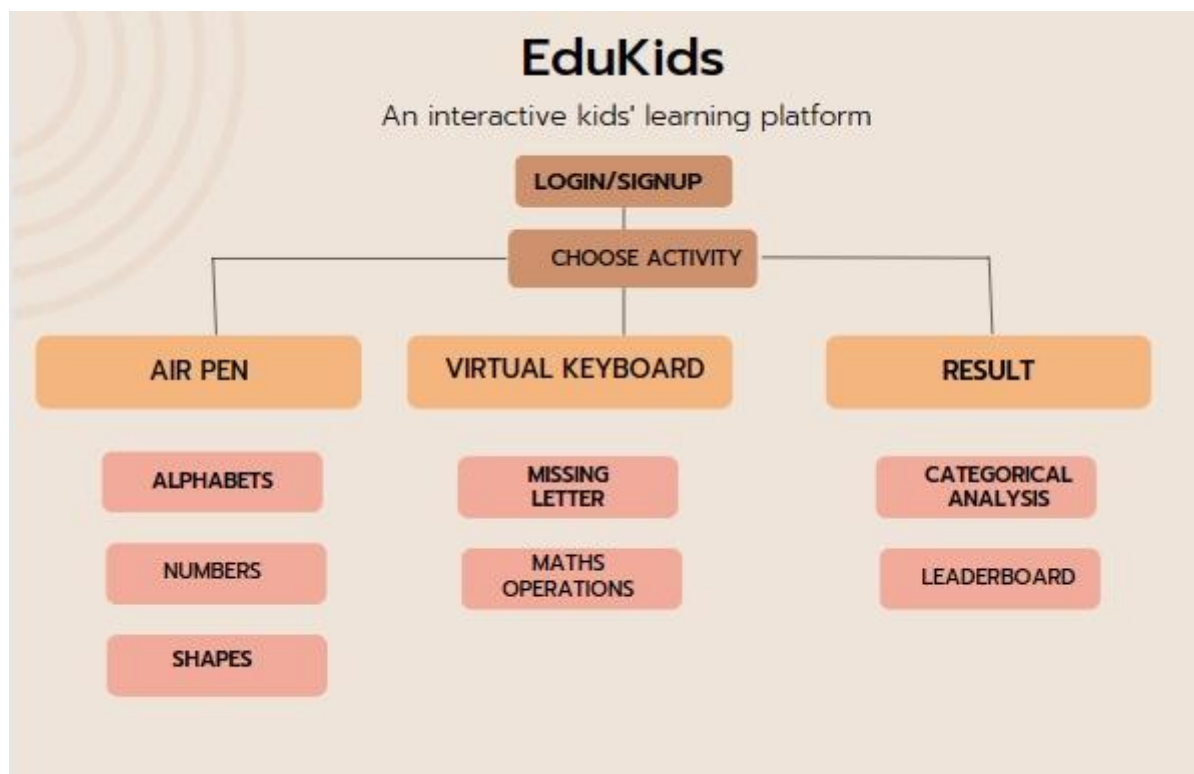
Each kid has a profile on the app using his/her parent's email id. After logging in to the app, the main interface displays 3 options to choose from: Air Pen activities, Virtual Keyboard activities, My result.

Air pen includes activities include:

1. Write Alphabets, Numbers
2. Learn to draw shapes.

Virtual Keyboard activities include:

1. Recognize colours and type their name
2. Perform basic mathematical operations like addition, subtraction, and multiplication.
3. Identify objects and fill in the blanks.

Additional fun activities include:

1. Drop the specified object in the shaded area
2. Learning dictation.

Result analysis is done on a daily and monthly basis. We keep track of Daily Stars earned monthly progress and topic-wise analysis of your child. Our extensive leaderboard maintains your child's ranking.

To maintain the child's interest, we have additional functionality of Unlocking Cartoon Characters upon reaching a certain number of points, so that the child remains enthusiastic to learn more.

The technical aspect of our idea
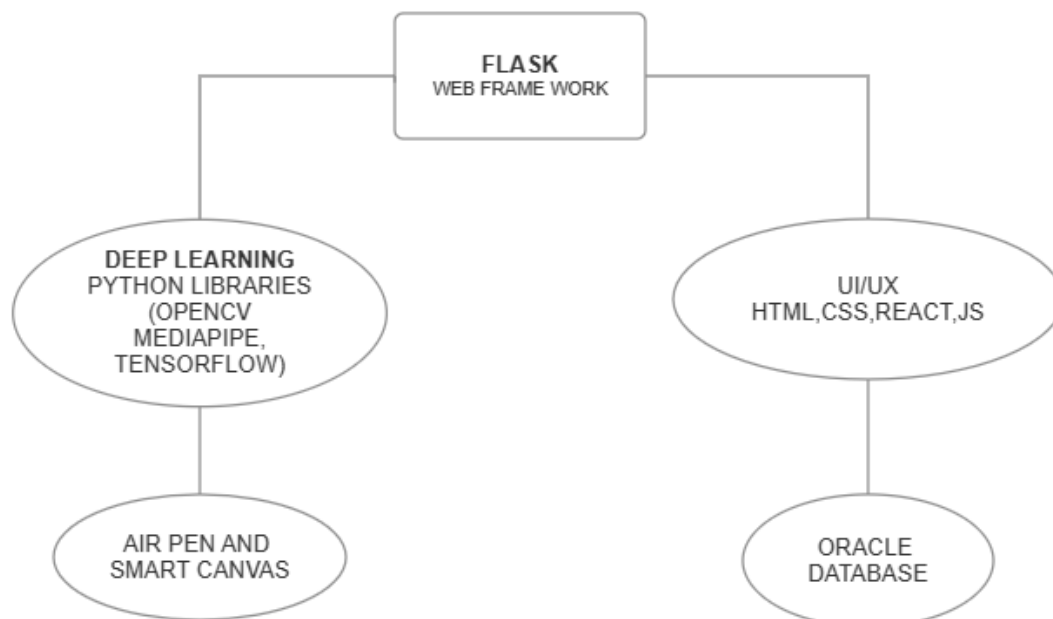
- Air Pen and Smart Canvas will be implemented using Gesture Recognition and Hand Tracking, which will be done with help of Python Libraries like mediapipe, OpenCV, tensorflow.
- The app will detect the number or alphabet written by air canvas using deep learning model trained on MNIST dataset. It uses mediapipe module to track the position of finger and gestures to write.
- Flask will be used to integrate the ML model with our web service.
- Oracle SQL will be used as the database to store the child's data.
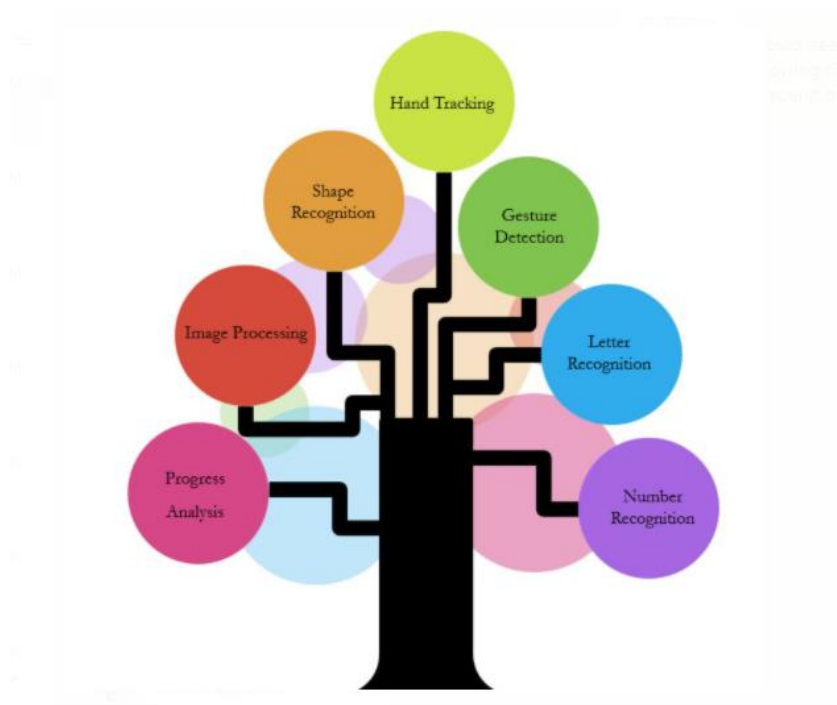
Team Code:519305-U9M510GY

Team Leader: Sanjoli Agarwal

Team Members: Tanisha Parkash, Taruna Jain