SMART LEARNING SYSTEM USING AUGMENTED REALITY

PROJECT MEMBERS

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ABSTRACT

This project is created to learning 2D Images as 3D Models using Augmented Reality technology. Learn with 2D images are complex to understand all structures. We employed to solve this issue using an Android Application called **AR Learn**. Learning with Augmented Reality is most excited compare than normal way of learn. On top of QR or two-dimensional image displayed respective three-dimensional objects to learn virtually with interactive behavior.

INTRODUCTION

This project was created to help people understand the intricate structures of picture representation diagrams using interactive 3D models. We frequently see diagrams and photos in our daily lives, however 2D visuals do not allow for a complete interaction. To address this issue, we created this project as Android Application called AR Learn. The 3D format makes user more visually appealing and engaging.

OBJECTIVE

- Providing new Learning Experience.
- Simple to Learn Complex structure.
- Improve your Learning skills
- To boost participation and interaction.
- Creating a positive impact among students.
- User friendly understanding environment.

LITERATUE SURVEY

Yogita Bahuguna	Smart Learning based on augmented reality with android platform	2018
Phum Natakuaithung	Development of AR learning Assistance of 3D clay Sculping	2020
Jon paddie	Augmented reality where we will all live	2017

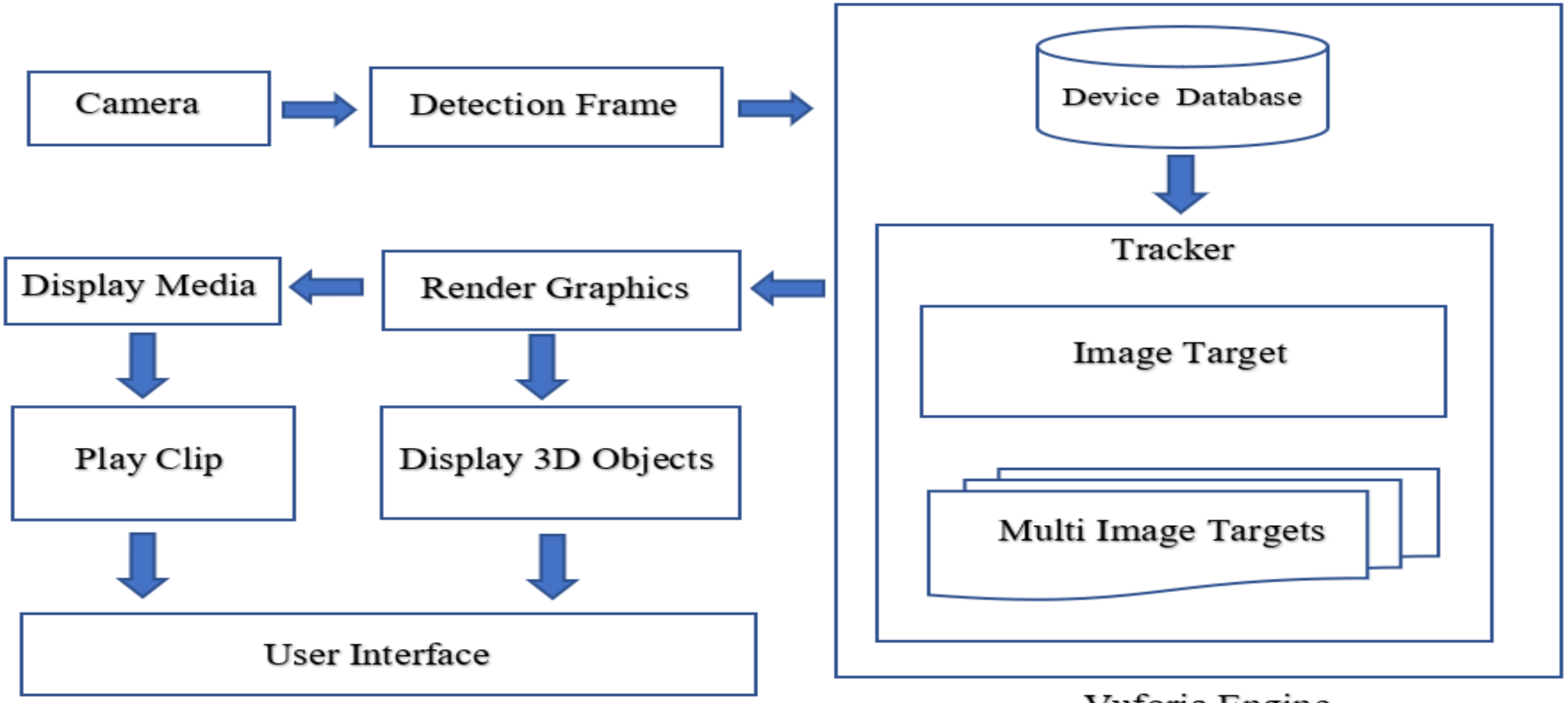
EXISTING SYSTEM

- The students may not fully benefit from the traditional and conventional teaching methods that use the book to thoroughly explain the particular element.

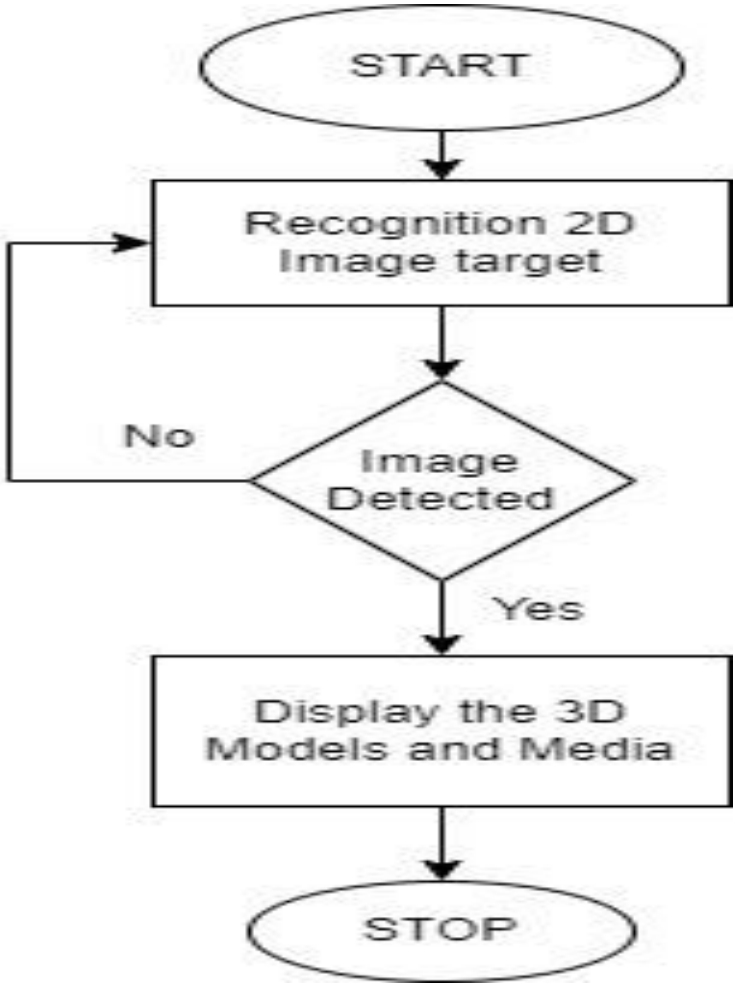
PROPOSED SYSTEM

- To address this issue we are provide an Android Augmented Reality Application for Learning to help teachers quickly explain the elements using 3-D models. This is facilitating successful learning experience between student.

BLOCK DIAGRAM



FLOW DIAGRAM

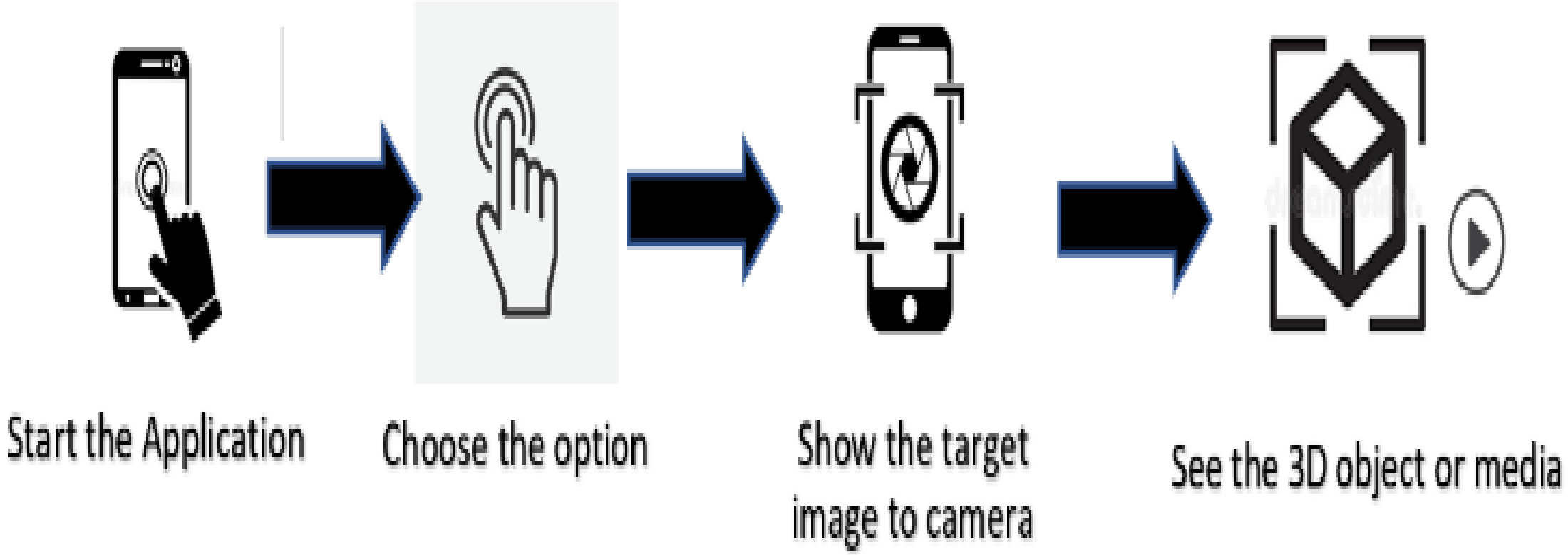


PROBLEM STATEMENT

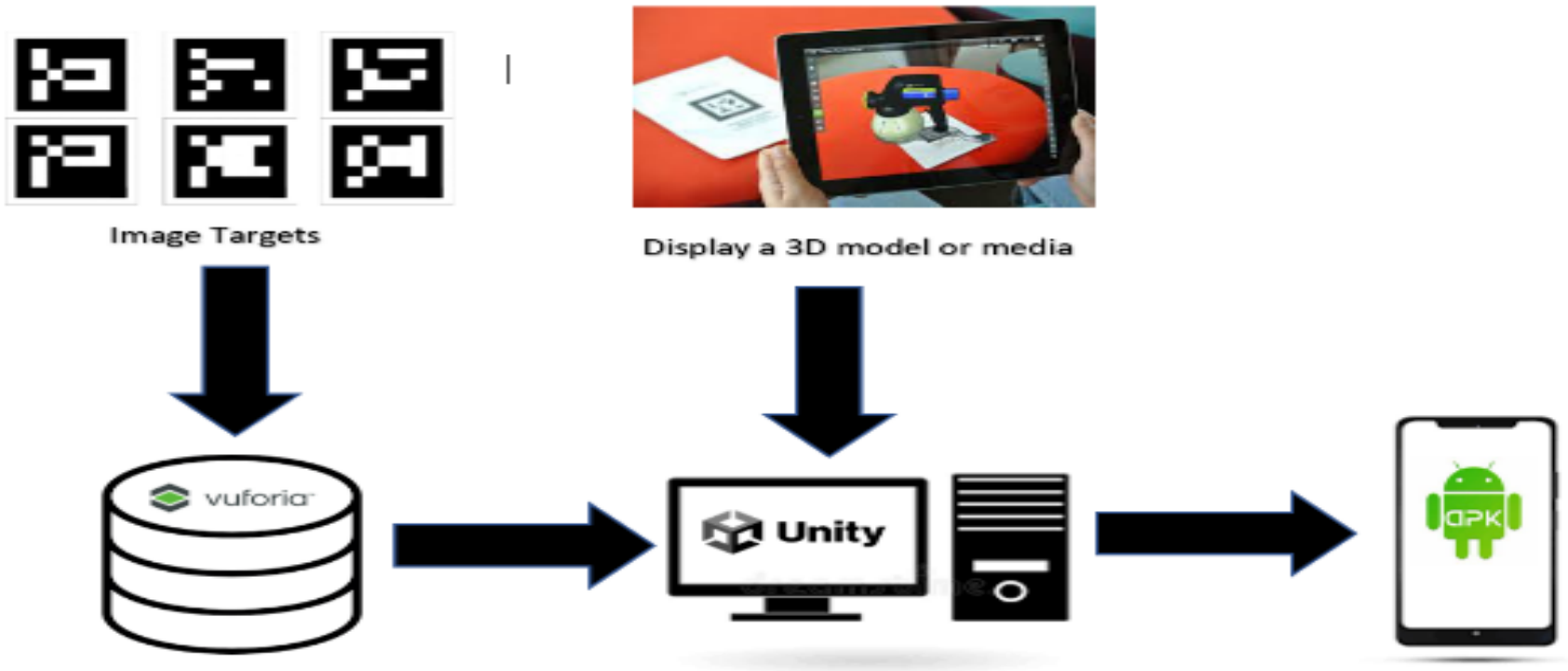
To Develop an Android Augmented reality android based application for comprehending the structure of both living and non-living entities.

MODULES

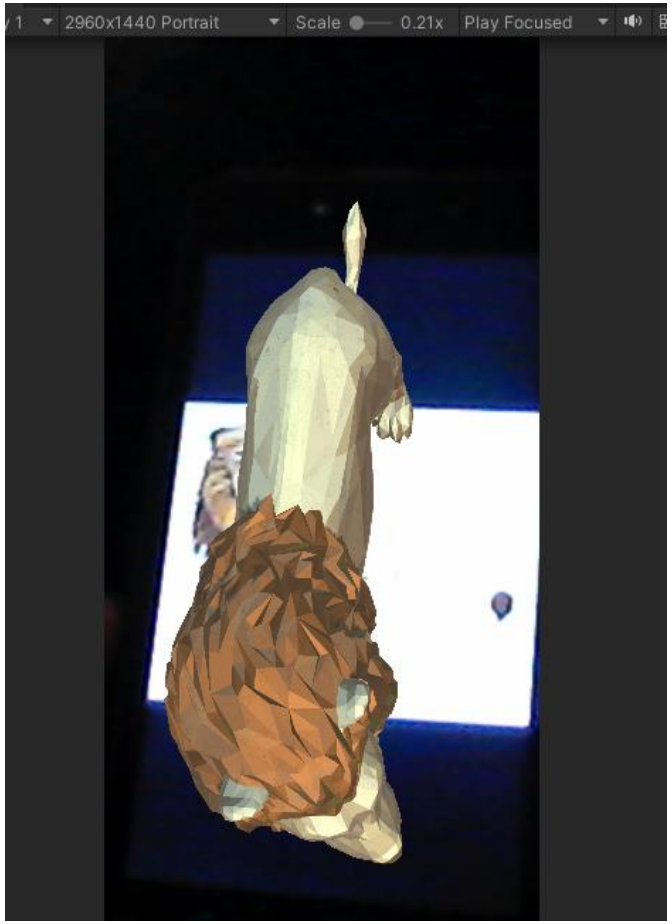
USER MODULE



SYSTEM MODULE



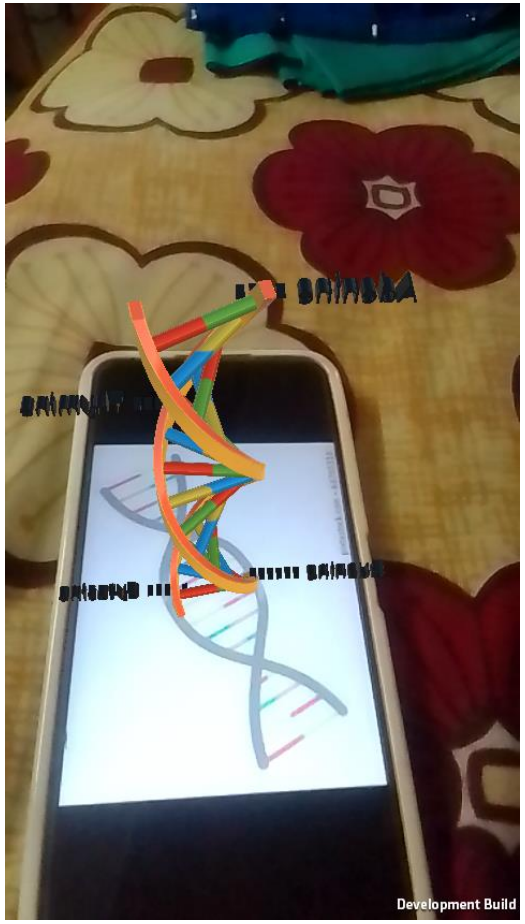
OUTPUT

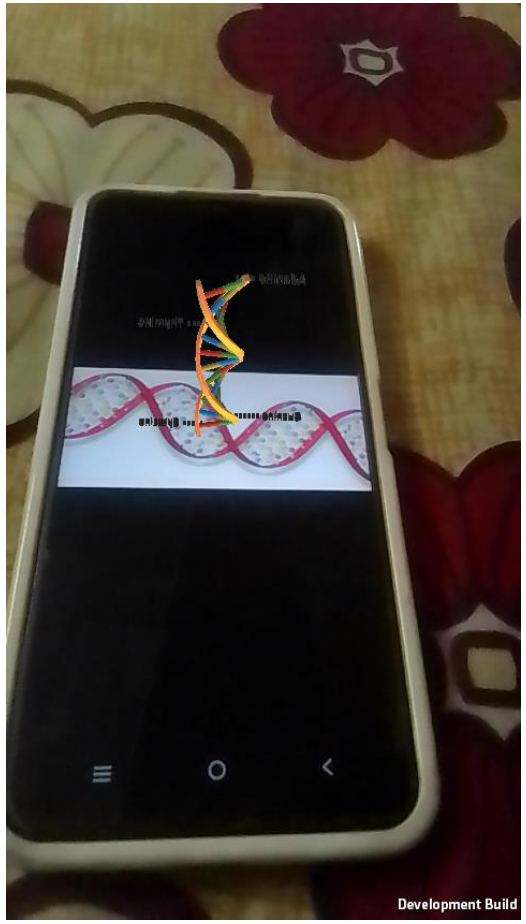

2960x1440 Portrait
Scale 0.21x
Play Focused


2960x1440 Portrait
Scale 0.21x
Play Focused
ED -- NORMAL

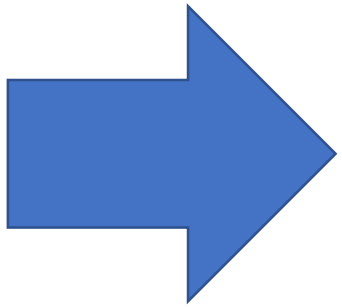

2960x1440 Portrait
Scale 0.21x
Play Focused
TRACKED -- NORMAL

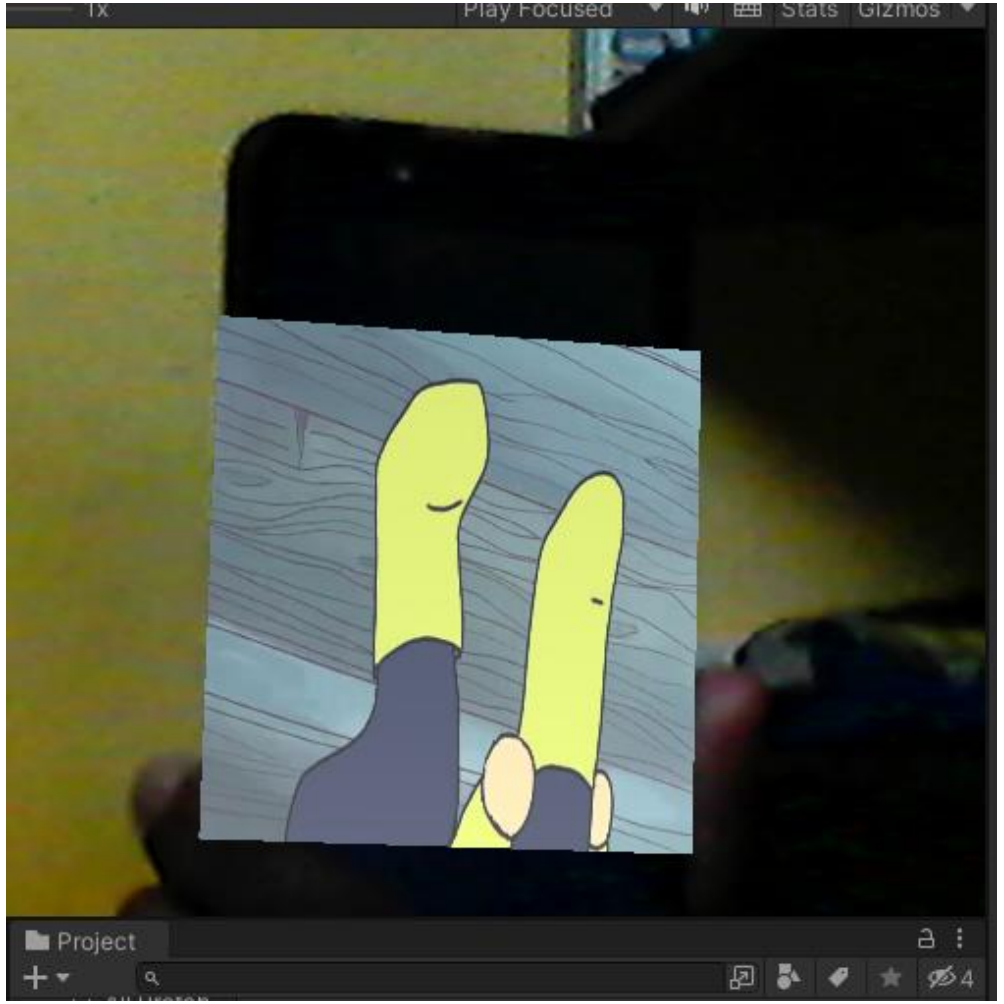
Multi Image Targets





Play clip with QR Recognition





SYSTEM REQUIREMENTS

- **Operating system** – Windows (8, 10, 11), Linux Distros, Mac OS.
- **Hardware** – Minimum 4GB RAM and 20 GB of disk space is required.
- **Graphical Interface** – OpenGL 3.2 or Vulkan Capable or Nvidia and AMD.

SOFTWARE REQUIREMENTS

- **Development Environment** – Unity 3D Engine 2021.3.22f1 or any latest version.
- **Image Target Database** – Vuforia Engine 10.14 and base Vuforia SDK package.
- **Development kits** – Java Development Kit (JDK), Native Development kit (NDK) and Android SDK tools.
- **Packages** – Unity Built-in AR libraries and Android Build Support

Tools Used to Implement

Developing Environment

3D Model Library

Programming Language

Image Target Database

CONCLUSION

At the end augmented reality through smartphone and camera enable device are more helpful for student and teacher to learn every element and parts in depth. It most effective among students because of less requirements.

FUTURE IMPLEMENTATION

In Future, we are combining the machine learning models with Augmented Reality application for more effective way of learning and creating fully functional Virtual classrooms for complete interactions between students and teachers.

REFERENCE

- Smart learning based on augmented reality with android platform and its applicability, *Dept ECE, Tula's Institute, Dehradun. Published in 2018 on IEEE.*

- Development of AR Learning Assistance Tool for Clay-Sculping D Model, *Dept of IT, Mahanakorn University of technology, Bankkok, Published in 2020 on IEEE*

- " Augmented Reality Where we will all Live " *by Jon paddie.*

THANK YOU

Future is on…