

RoadAR: An Augmented Reality Mobile Application

A Capstone Project
Presented to the Faculty of the
College of Computer Studies
Lyceum of the Philippines University – Batangas

In Partial Fulfilment
of the Requirements for the Degree
Bachelor of Science in Information Technology
Specialized in Multimedia Technologies

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DEDICATION

We dedicate this project to God Almighty our creator, our family, our friends, and also our fellow classmates. We also dedicate this work to our Adviser; Engr. Joselito Dolot who has encouraged us all the way and whose encouragement has made sure that we give it all it takes to finish that which we have started. Most especially to our groupmates, this is the fruit of our work! Thank you. God bless you.

RoadAR: An Augmented Reality Mobile Application

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ABSTRACT

Augmented Reality(AR) complements the real world with computer generated objects that seem to exist in the similar space as the real world. “RoadAR (Road Augmented Reality)” aimed to determine the performance of the user in relation to the road sign. The problem is out of 40,234 who took driver’s license exam, only 16,625 have passed the written exam and 16,686 have passed in practical exam. In 2017, the total number those who took the exam was 26,286 and 19,421 passed the written and 19, 329 passed the practical exam. So, the researchers decided to develop AR mobile application, which will benefit the examinees and users to interact through the real world. The significance of having the said AR mobile application provides and gives them a photographic memory and with the 2D image of Road Signs you can just augment it using the application. As a result, the researchers would like to recommend installing or using this AR mobile application in order to enhance the way of learning. They might enhance their way of reviewing the road traffic signs. Therefore, the researchers came up with the AR mobile application that will help educate the users to gain more knowledge about road signs.

Keywords: *Augmented Reality, Android Application, Road Signs, Unity 3D*

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Keywords: *Augmented Reality, Android Application, Road Signs, Unity 3D*

1.0 INTRODUCTION

Roadway permission takes a legal responsibility to achieve their road sign and road safety undertaking of vehicular and pedestrian traffic. It is for each

authority to regulate what signages are needed to meet this requirement. Road signs can be used to guide or direct and understand the effect of regulatory requirements.

As stated by Engineer Teodora D. Aguirre from Land Transportation Office (LTO) Batangas, that there are four categories of road signs, First is the danger warning signs, the second one is the priority signs, then the prohibitory or regulatory signs, and the last one is the mandatory signs. The total number of common road signs here in the Philippines are equal to eighty signages. Engr. Aguirre also said that other people choose to learn from driving lessons before taking the exam but it is not totally required according to her statement. In 2016, the total number of people who takes the exam is averaging to 40,234, people who passed the written exam is 16,625 and in practical is about to 16, 686. The total number who failed the exam is about to 6, 923. In 2017, the total number who takes the driver's license exam is 26,286 and 19,421 passed the written exam but 6,865 failed. In practical exam, 19,329 passed but 37 failed out of 19,366 examiners.

According to the Land Transportation Office (LTO), once you failed to the LTO exam, one month after failing one or both of the writing and

practical exams, a driver's license applicant can repeat the exam. Failing on the second try means you cannot repeat the given exam and apply for a driver's license within a year. Lastly, failure to pass the LTO exams on the third try will have to wait for two years before you being certified to repeat the exam and re-apply for a license and take the exam. Alarmingly, only 14% of those under age 24 are fully confident in naming road signs, despite having taken their test in recent years. And two out of five did not know the sign for risk of grounding, with more than half thinking it meant 'bumpy road'. Unsurprisingly, three out of five people aged 55 who have spent years behind the wheel, said they felt confident naming all road signs. Understanding road signs is vital to road safety and not knowing their meaning can result in accidents due to ignorance.

Based on TopGear Philippines by Nicky Tamayo (2016), understanding road sign is an important ability for fresh drivers, however it is one that even expert drivers seem to lack. It is because our road signages seem to be in a continuous

state of flux, and even the authorities painting them often seem puzzled by where they should actually go.

When you find lane markings directing you into a telephone pole planted in the middle of the road, it is probably best to use your better judgment instead. Even so, it cannot hurt familiarizing yourself with these basic lane markings, because they might save your life. RoadAR is to gain more knowledge and understanding of road signs that are meant to maintain order and provide information to motorists driving through major thoroughfares. Ideally, road signs are intended to control the traffic flow and to warn you of an upcoming hazard. Strict operation of rules and agenda is unique stage in lecturing the increasing problem in road signs in the country.

RoadAR is an augmented reality mobile application that has been designed to give information and warnings. The mobile application will let the users practice discipline in driving that will decrease the failure rate of taking a

Driver's License Exam, and give knowledge about road sign for everybody. The primary purpose of RoadAR is to assign right-of-way to conflicting movements and to know the real meaning of that signage. The limitation of the RoadAR is for smartphone android users and the signages are limited to the Philippines only. The application cannot determine whether the path of your way has heavy traffic or not.

1.1 Objectives of the Study

1. Develop RoadAR that provides the needed information to understand road signs and road safety.
2. Provide an offline mobile application that will enhance the understanding of the users about different road signages.
3. Apply augmented reality in a mobile application, which allows the user to view real world road signs in augmented form.

2.0 LITERATURE REVIEW

Augmented Reality

According to Krev Poelman (2010), augmented reality (AR) is the knowledge to produce a “next generation, reality-based interface” and moving from research laboratory around the world into numerous productions and customer marketplaces. Augmented Reality (AR) complements the real world with computer-generated objects that seem to exist in the similar space as the real world. AR was familiar as an evolving technology of 2007 and with today’s smart phones and Augmented Reality, we are starting to embrace this very new and thrilling kind of human-computer interaction. [1]

According to Tomia (2013), Augmented Reality (AR) refers to a technology that gives the capability to the user the sense of the real world while interacting with the virtual and physical object. Mobile can be used as a portable device, thus mobile AR application can be stated as a portable AR application. Through AR, the real world can be enhanced via augmented virtual object into

real environment and give some information for the users. [2]

Augmented Reality (AR) has recently received a lot of attention in education. Different types of AR systems has been developed and tested for learning through empirical studies. Three AR learning environments has been developed in genuine classroom context, some of them being now part of classroom regular practices. With the help of teachers, the systems and the learning activities have been co-designed for their own classrooms, through multiple cycles of prototyping and testing. [10]

ARTAR

Augmented Reality (AR) is the technology to create a “next generation, reality-based interface”. In health for example, the development of medical applications by the use AR technology has been presented. Among others are the visualization of 3-D lung, orthopedic surgery and a few other surgeries. With the help of AR technology, everything can be

a realistic thing and improvement in each work is getting easier. [4]

However, the Sensorex tool is not a part of the AR technology. AR technology capabilities in its operation are usually related with displaying objects visually whether in 2D or 3D shape. Pousman (2016) said that the use of computer-mediated tools to depict personally expressive information in visual ways that support everyday users in both everyday work and non-work states so that the available information is simply accessible and understood well. In these studies, technological growth in health area provides a lot of positive impression to users. However, the use of AR technology in mobile devices is limited. So, this work will create an application that can combine mobile devices and AR technology in producing nutritional material visually to facilitate users in improving their health. [6]

Camera range and pixels

According to Matt Whitlock, augmented reality applications can involve nature to make immersive encounters.

Most of the trial investigations of dealings in AR focus on relations with objects close to the users, usually within arm's reach. As objects move more far away, the effectiveness and ease of use of various collaboration modalities may change. This work finds AR collaborations at a distance, deciding how applications may support interactive encounters in augmented reality.

Real-Tech

According to Catapang (2016), Augmented Reality (AR) is a live or indirect view of a physical, real-world atmosphere whose fundamentals are augmented by computer-generated sensory input such as sound, video, graphics or GPS data. The technology functions by improving one's present perception of reality by difference and virtual replaces the real world with a simulated one. Augmentation is conventionally in real time and in semantic context with environmental elements, such as sports scores on TV during a match. A set of combined instructive simulators supporting teaching and learning of computer construction has been developed

and used to involve students to up-to-date computer systems architecture including computer devices. A new Technology, Augmented Reality (AR), that has gained an increasing interest from education industry, is a potential practice that can be used as a supplementary tool for engaging students in learning this complex material. This is because one of the benefits of AR is that it can develop a user's perception of the real world with virtual matters. AR can be used to expand the description of a complex concept by covering related information on the real object.

SDK 7

According to Wikitude's CEO, Martin Herdina, states that "SDK 7 is another big innovation for AR developers, who can now utilize a single crossplatform SDK to build the complete spectrum of AR experiences existing in the market today." Wikitude SDK 7 is the "all-in-one AR tool-kit" powered with object tracking, instant tracking (SLAM), multiple targets recognition, extended recognition range, and more. Augmented Reality takes a huge step towards tracking the world. It includes

marker, markerless and location-based augmented reality features in one set for developers. The newest version of SDK is also available for Android, smart glasses and supports a extensive range of development frameworks such as Unity, Phonegap, Titanium and Xamarin. SDK 7 has the capability to identify target images from a prolonged range in distance. Target images on A4 format will now be identified from over 2 meters away. This recognition distance is 2x superior to other SDKs available in the market. Extended recognition range works for ondevice image recognition and HD devices.

SlidAR

The SlidAR is developed for Handheld Augmented Reality (HAR) and operates ray-casting. It has the potential to present Augmented Reality (AR) to large users due to the extensive use of appropriate handheld devices. But some of the current HAR systems are not considered very practical and they do not fully answer to the wants of the users. SlidAR utilizes 3D ray-casting for virtual object positioning.

It does not require a perfect 3D modernization of the environment nor any virtual depth cues. We have conducted a user test to evaluate the effectiveness of SlidAR method against an existing device-centric positioning method that is called HoldAR. In the result, SlidAR is significantly faster, required significantly less device movement, and also gets significantly improved subjective evaluation from the test members. SlidAR also has higher positioning accuracy, although not significantly. [6]

Stereo Cameras

Stereo cameras pretend human binocular vision by determining the displacement of pixels among the two cameras placed in a fixed distance apart and use that to triangulate distances to points in the object.

All these sensors have their limitations. IR-based sensors like have a harder time functioning outdoors because bright sunlight (lots of IR) can wash out or add noise to the measurements. Stereo

cameras have no problems working outdoors and consume less power, but they work best in well-lit areas with a lot of features and stark contrast. All you need to do to confuse a stereo camera is point it at a flat white wall. Since all these sensors work on pixel-based measurements, any noise or error in the measurements creates holes in the depth image. Also, at the size and capacity of phones and headset devices today, the maximum range achieved so far has been about three–four meters.

Improving drivers' knowledge of road rules using digital games

According to Richard Tay (2013), although a skilled knowledge of the road directions is significant to safe driving, many drivers do not recall the knowledge acquired next they have got their driver's licenses. More advanced and interesting procedures are needed to expand drivers' knowledge of the road directions. This learning observes the effect of game based learning on drivers' knowledge achievement and maintenance. We find that playing an enjoyable game

that is designed to convey knowledge of the road directions not only expands players' knowledge. However, it also helps them hold such knowledge and learning by gaming looks to be a promising learning method for driver education.

Rating road traffic education

According to Jose A. Romero Navarrete (2018), in the context of road safety, developments in road traffic education have been known in several states as an instrument for reducing road accidents. Though, the level of road safety instruction imparted by different organizations lacks an impartial presentation measure concerning the level of awareness that different applicants in the transport procedure have concerning road transportation dangers.

Based on a logical hierarchy development to evaluate the relative importance of different questions, in this paper, the essentials of a road safety form are presented and discussed, including the corresponding references for the contents

of respectively question. This examination was calculated for six road transportation applicants first is the car drivers second is the commuters third is the public bus fourth is the motorcycle fifth is the bicycle riders and lastly is the pedestrians. For each of these applicants, six areas of information were addressed, applied situations, courtesy and urbanity, organization, safety and human issues, traffic signals and rules recommendations. The mark population for applying the exam was the people of the City of Santiago de Queretaro, Mexico. For a classifying scale of 1 to 10, the bottom and maximum grades were found by motorcycle riders (5.72) and pedestrians (8.84), correspondingly, which means the need for better instructions for motorcyclists about road safety.

3.0 METHOD

3.1 Research Method

Agile methodology believes that every project needs to be checked and spectated by its iteration. Because of it, the customer is able to see the outcome and understand if he is satisfied with it or not. In Agile, the tasks are separated to time

boxes (small time frames) to bring specific features for a release.



Figure 1. Agile Development Model

The advantages of it is the flexible change process that minimizes the risk and defects of the application. Each build is incremental in terms of features; the final build holds all the features required by the customer and lastly, the fast release of the first product version.

Requirement Analysis

The Requirement Analysis started at gathering essential information and data that has been analyzed by the authors for the beginning of the application. An interview conducted by the researchers

helps a lot to gather more facts and figures that will begin the development of the application for the need of the users. The authors compiled all the needed information in developing the augmented reality based mobile application from internet, books and other resources like YouTube. Through the guide of our Adviser in this capstone project the requirements needed defined and stated clearly.

Planning

The project started with initial planning. All the members who conducted the research started meetings and discussion about the capstone proposals together with their adviser. They discussed the usual problems that the society is now facing related to road safety. The proposal was a collation of ideas and suggestions of each member. After thorough discussions, the proposal was consulted by the adviser, Mr. Joselito Dolot and also be approved by the College Dean, Mrs. Roselie Alday.

Designing

In this phase, the authors focused on creating an interface that will be easily understood by the customers. Any users that would like to use the augmented reality application will enjoy the interface with some basic elements of design. The graphic editor software which is Adobe Photoshop and Adobe Illustrator helps us to create a discreet design for the creation of the application.

Development

In this stage, the authors used a software that creates the augmented reality mobile application. The first moved that the authors do for the development of the application was the brainstorming of all the gathered information related to road signs. The second one was to study the application that would help the authors to detect and verify some adjustments. The third one was the implementation of the planned design to the augmented reality mobile application.

Release

After the development stage is the release procedure. This stage helped the application to detect the errors and complications of the application. The stability and functionality of all the features inside the application should be working. It will also distinguish the needs of the application and identify the absent features.

Track and Monitor

The last thing to do is the monitoring and the evaluation of the augmented reality mobile application. This phase helps the application to look for some inaccuracy and if the planned development would run excellently. Monitoring would take too much time but it would give a good benefit and progress for the augmented reality mobile application. With the help of our Adviser in this capstone project, Mr. Joselito Dolot, the evaluation of the application stated clearly and give some suggestion for the development of the application.

Flowchart

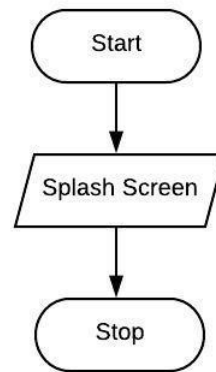


Figure 2. Splash Screen

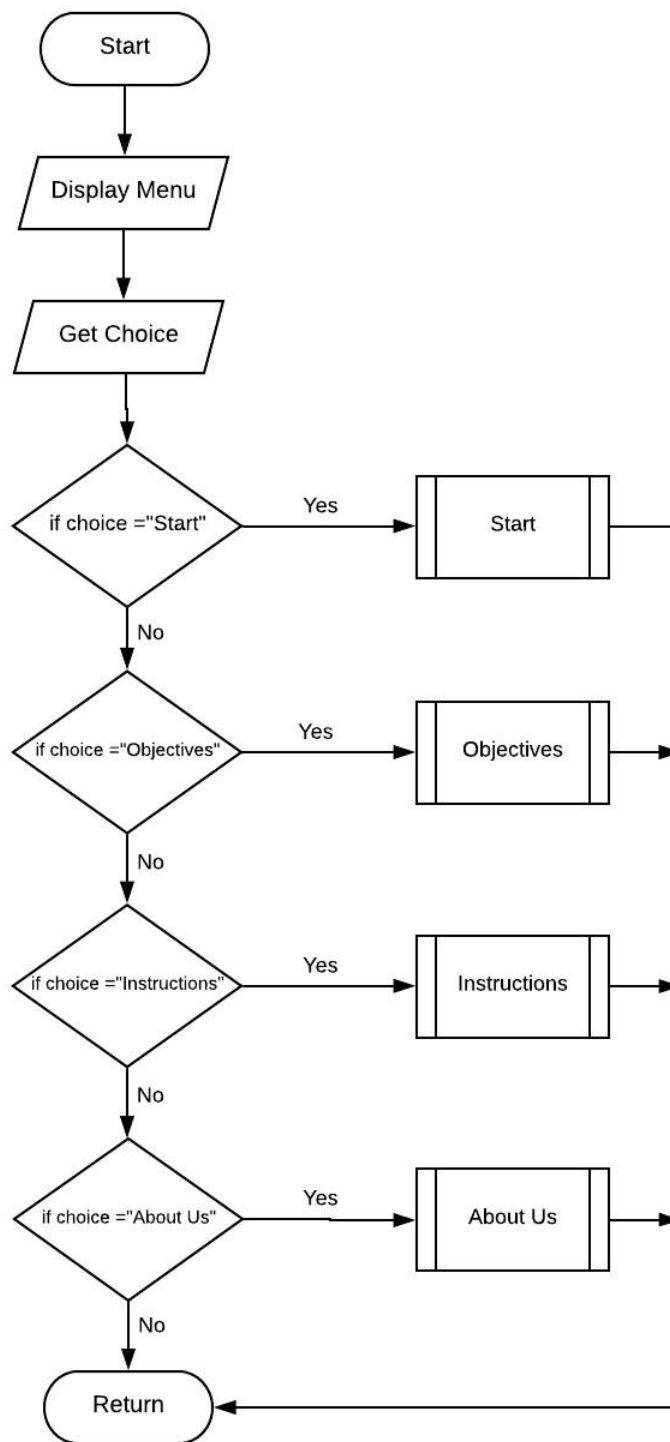


Figure 3. Main Menu

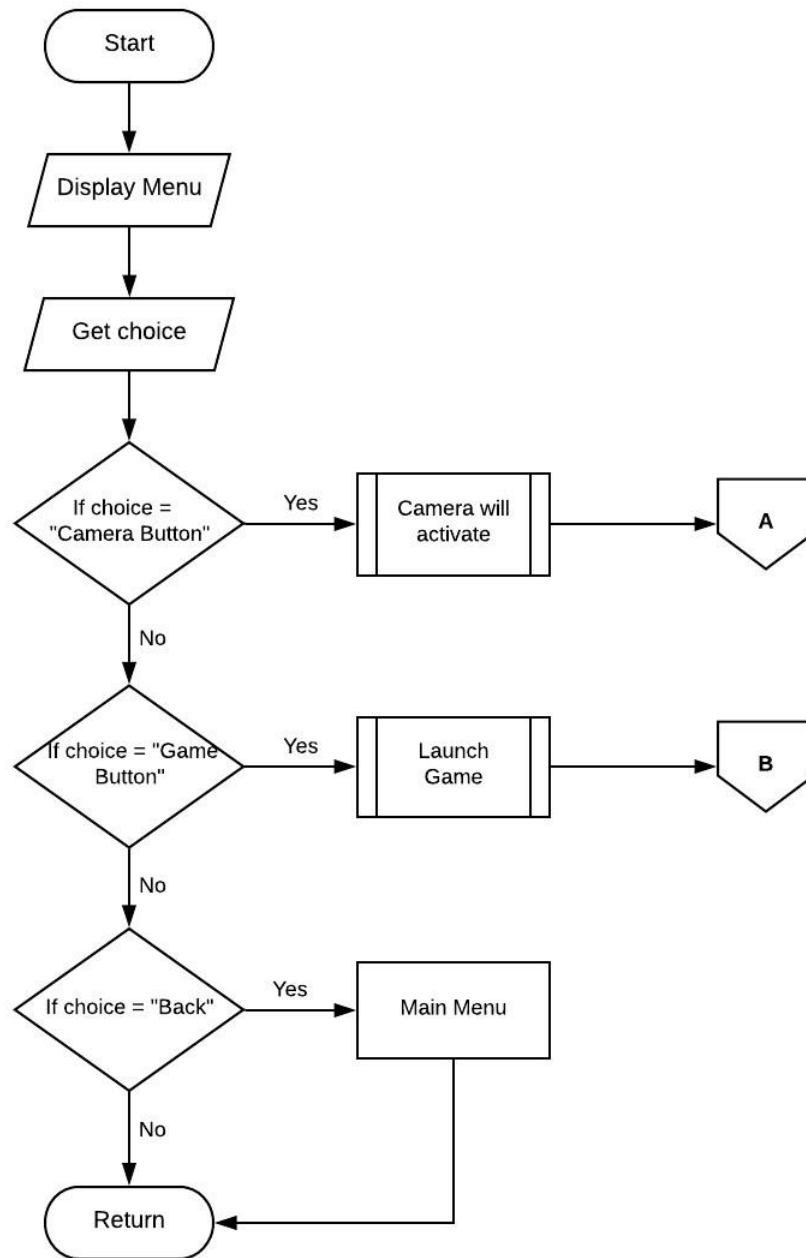


Figure 4. Start Menu

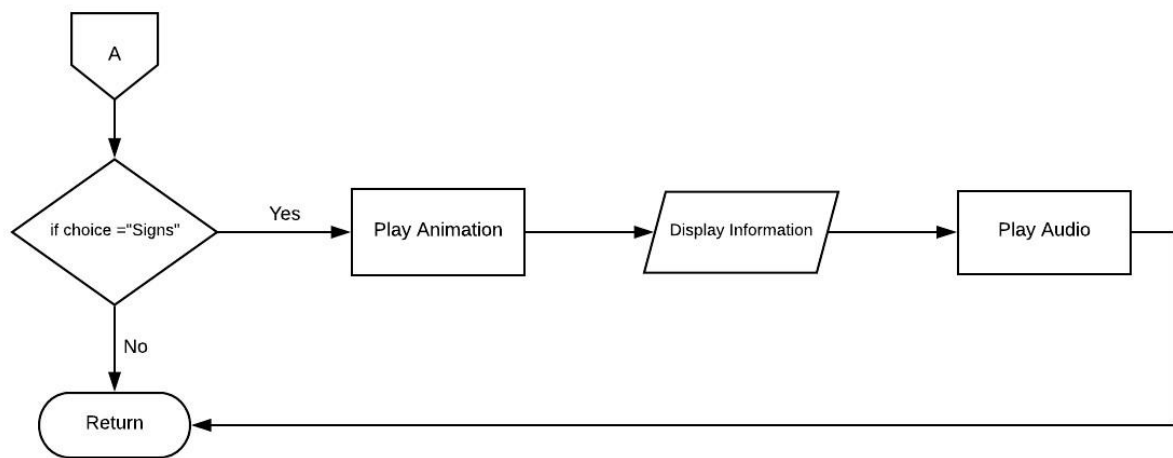


Figure 5. Camera Page

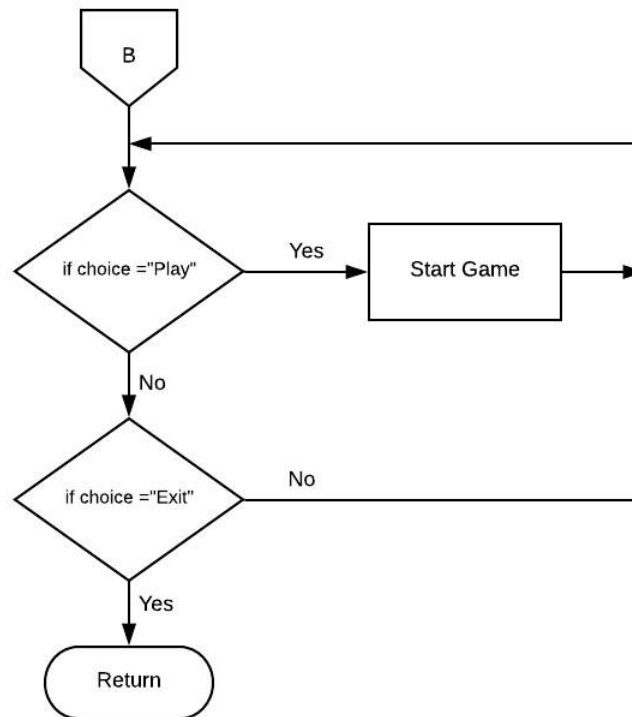


Figure 6. Game Page

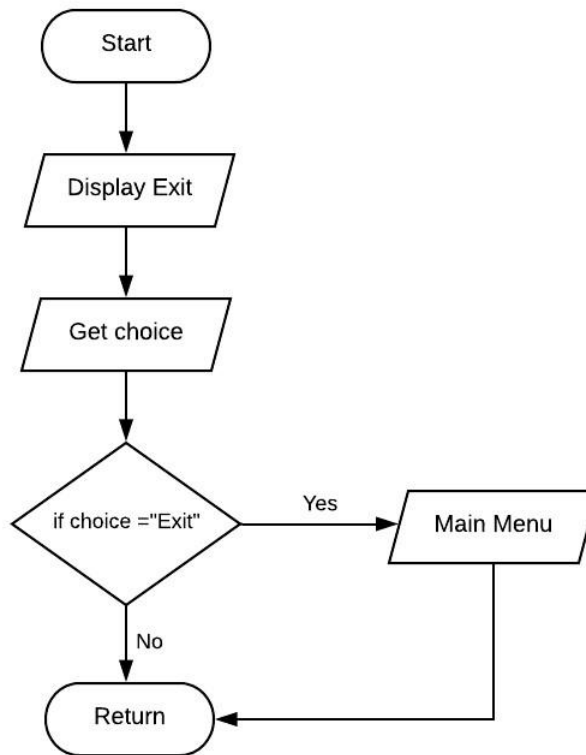


Figure 7. Exit

4.0 Discussion

Screen Layout



Figure 8. Splash Screen

It display the logo of the application before continuing to the main menu.



Figure 9. Main Menu

This page contains of Start, About Us, Instructions and Objectives button, there is an exit button in the upper right of the screen.



Figure 10. Start menu

The start menu has two options, Camera button and Game button.



Figure 11. Camera page

In this camera page, the 3D model of road sign, audio and text information will display after recognizing the 2D image. There is also a back button in the upper left corner.



Figure 12. Game page

This page display two options the Play and Exit button.

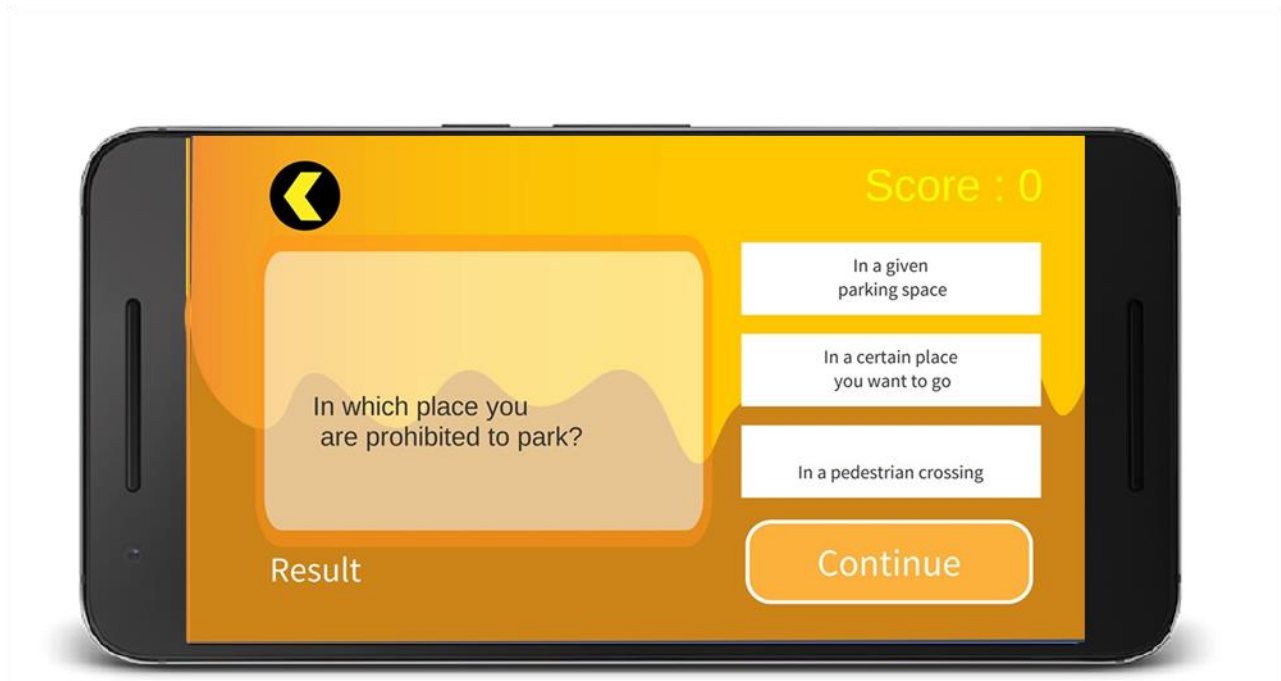


Figure 13. Gameplay

This page shows the question and choices. The color green is the correct answer and if it is incorrect the color will turn red.



Figure 14. Objectives

This page shows the purpose of the developers for creating this application.



Figure 15. Instructions

This page shows how to use this application.



Figure 16. About Us

This page shows the group's mission.
Developer's pictures are also display in this page.



Figure 17. Exit

This page will ask you if you want to exit the application. If the user chooses yes, the application will exit. If no, the user will be directed to the Main Menu.

5.0 Summary, Conclusion and Recommendations

5.1 Summary

RoadAR: An Augmented Reality Mobile Application” has been designed to provide a modern way of learning in augmented form. It was developed to help more people understand the road signs and gain more knowledge about it. This AR mobile application is capable of displaying a 3D model with its meaning and zoom function to provide a detailed view of road signs. It allows the user to view the real world while learning the road signs.

The main goal of RoadAR is to serve as an effective material to minimize the difficulty of understanding the road sign. This mobile application is for anyone who wants to make learning more entertaining. The application will serve as additional material for those who want to learn about road signs. RoadAR features four main categories featuring of warning sign, mandatory sign, priority sign and prohibited sign.

5.2 Conclusion

The following conclusions were based on the discoveries of the study. First, Augmented Reality is a newest trend in mobile application development that can be effective and also a useful learning instrument in the road industry. Second, this application has unique opportunity to make the user more attracted in understanding by giving an interactive approach. Third, Augmented Reality has unique opportunity to make the user more interested in understanding by giving an interactive and modern way of learning.

5.3 Recommendations

The RoadAR: an Augmented Reality Mobile Application is a research about road signs but it will be more beneficial if it is not limited to common road signs. To analyse the road sign the author should rotate the 3D model. The AR mobile application can be reference in developing their mobile application project. Furthermore, additional functionalities are also recommended for improvement, like to add some features and questions in the game.

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APPENDICES

Code Listing

Choices

```

using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class text3 : MonoBehaviour
{
    List<string> thirdchoice = new
    List<string>() { "Ten seconds before
    doing it",
                    "Capability of the
    driver",

    // Use this for initialization

    void Start()

    {

    //GetComponent<TextMesh>().text =
    thirdchoice[0];

    if (textcontrol.randQuestion > -1)
    {

```

```

        "Turning left",
        "Turning right",
        "In a pedestrian
    crossing",
        "Giving direction",
        "Slow down and
    proceed if there is no danger",
        "The vehicle that
    slows down first",
        "The road is two-
    way",

    }

    // Update is called once per frame

    void Update()

    {

```

```
GetComponent<TextMesh>().text =
thirdchoice[textcontrol.randQuestion];
```

```
}
```

```
}
```

```
void OnMouseDown()
```

```
{
```

```
    textcontrol.selectedAnswer =
gameObject.name;
```

```
    textcontrol.choiceSelected = "y";
```

```
    textcontrol.choice = 3;
```

```
}
```

```
}
```

```
//Proceed button
```

```
scoreObj.GetComponent<TextMesh>
().text = "Score : " + totalCorrect;
```

```
if (totalQuestions == 40)
```

```
{
```

```
    fiObj.gameObject.SetActive(false);
```

```
    seObj.gameObject.SetActive(false);
```

```
    thObj.gameObject.SetActive(false);
```

```
        if (scorePer >= 5)
```

```
        {
```

```
            procObj.gameObject.SetActive(true);
```

```
            proc.gameObject.SetActive(true);
```

```
                questObj.text =
                "Congratulations, you passed!!";
```

```
        }
```

```
        else
```

```
        {
```

```
            procObj.gameObject.SetActive(false);
```

```
            proc.gameObject.SetActive(false);
```

```
                questObj.text = "You
                failed!! Retake this quiz.";
```

```

retrObj.gameObject.SetActive(true);

retr.gameObject.SetActive(true);
    }

    }
else
    {

procObj.gameObject.SetActive(false);
    }

    }

    public void
    RandomizeQuestion()
    {
        //Randomize question
        if (randQuestion == -1)
        {
            randQuestion =
            Random.Range(0, 40);

for (int i = 0; i < 40;
    i++)
    {
        if (randQuestion !=
prevQuestions[i])
            {

            }
        else
            {
                randQuestion = -1;
            }
        }
    }

    if (randQuestion > -1)
    {

GetComponent<TextMesh>().text =
    questions[randQuestion];

prevQuestions[questionNumber] =
    randQuestion;
    }

```

//Proceed button

```
scoreObj.GetComponent<TextMesh>
().text = "Score : " + totalCorrect;
```

```
    if (totalQuestions == 40)
        {
```

```
        fiObj.gameObject.SetActive(false);
```

```
        seObj.gameObject.SetActive(false);
```

```
        thObj.gameObject.SetActive(false);
```

```
            if (scorePer >= 5)
                {
```

```
                procObj.gameObject.SetActive(true);
```

```
                proc.gameObject.SetActive(true);
```

```
                    questObj.text =
"Congratulations, you passed!!";
```

```
        }
```

```
    else
```

```
        {
```

```
        procObj.gameObject.SetActive(false);
```

```
        proc.gameObject.SetActive(false);
```

```
            questObj.text = "You
failed!! Retake this quiz.";
```

```
        retrObj.gameObject.SetActive(true);
```

```
        retr.gameObject.SetActive(true);
        }
```

```
    }
```

```
else
```

```
    {
```

```
        procObj.gameObject.SetActive(false);
```

```
    }
```

```
}
```

```

        public void
RandomizeQuestion()
    {
        //Randomize question
        if (randQuestion == -1)
        {
            randQuestion =
Random.Range(0, 40);

            for (int i = 0; i < 40;
                i++)
            {
                if (randQuestion !=
prevQuestions[i])
                {

                }
                else
                {
                    randQuestion = -1;
                }
            }
        }
        GetComponent<TextMesh>().text =
questions[randQuestion];

        prevQuestions[questionNumber] =
randQuestion;
    }

```

USER'S MANUAL

1. Launch the Google Playstore application on your mobile device.
2. Search for the RoadAR and download the application.
3. Download and print the marker from RoadAR Official Facebook Page.
4. Launch the application by tapping the RoadAR icon in the smarthphone's app drawer.
5. Tap the objectives button to view the developers objectives in developing the app.
6. By tapping the instructions button the user can view the step-by-step guide in using the application.
7. User can view a brief information about the app by tapping about button.
8. Tap the Camera button and focus it within the target image. When the camera detected and recognized the image, the 3D model of the road sign and its meaning will instantly appear.
9. User can play the corresponding meaning by tapping the sound button at the upper left corner of the screen.
10. User can zoom and move the 3D model by tapping and holding it.
11. Tap the back button located in the upper right corner of the screen to return to start menu.
12. Tap the Game button to open the quiz part of our application.
13. Click Play and tap the "take the quiz" button to start.
14. Tapping the "x" button on the main menu will close the application.

CURRICULUM VITAE

Personal Information

Name: **Anjela G. De Claro**
 Address: Gen. Luna St. Lemery, Batangas
 Email: anjeladeclaro@gmail.com
 Date of Birth: September 28, 1999
 Citizenship: Filipino
 Religion: Roman Catholic
 Gender: Female
 Age: 19



Educational Background

Primary: Lemery Pilot Elementary School
 Secondary: St. Mary's Educational Institute
 Tertiary: Lyceum of the Philippines University

Skills

Graphic Designing using Adobe Photoshop, Adobe Illustrator, Adobe InDesign
 Web Development using Adobe Dreamweaver
 Microsoft Office Literate (MS Word, MS Excel and MS PowerPoint)
 Basic knowledge in Database: SQL and Microsoft Access
 Knowledgeable in Programming Languages such as VB.NET, C++ and Java
 Knowledgeable in Troubleshooting (Hardware/Software)
 Good communication skills and Hardworking
 Ability to start and complete assigned task

Awards and Recognition

First Place in the Web Development Competition during the celebration of CCS Days 2018
 Best Project in recognition of the team's outstanding performance to the OOP Project (Common Illness Cure and Treatment (CICT) Mobile App)
 Computer System Servicing NCII Passer (Troubleshooting and Computer Repair)

Seminars and Trainings Attended

PLUG IT: JPCS TECH CARAVAN IN BATANGAS

Freedom Hall, Lyceum of the Philippines University - Batangas, Batangas City
 February 17, 2018

iSITE: "Data Science and Artificial Intelligence"

Lyceum of the Philippines University-Laguna
 October 1, 2018

Speakers' Training Camp 2018

Freedom Hall, Lyceum of the Philippines University Batangas, Batangas City
 August 11, 2018

Women Rock IT Webinar Series

Lyceum of the Philippines University Batangas, Batangas City
 September 25, 2018

Personal Information

Name: **Jowelyn Jonah G. Hornilla**
 Address: Kamalig Pag-Asa, Taysan, Batangas
 Email: hornillajowelynjonah@gmail.com
 Date of Birth: August 23, 1998
 Citizenship: Filipino
 Religion: Iglesia Ni Cristo
 Gender: Female
 Age: 20



Educational Background

Primary: Panghayaan Elementary School
 Secondary: Taysan High School and Child Development Center
 Tertiary: Lyceum of the Philippines University

Skills

Graphic Designing using Adobe Photoshop, Adobe Illustrator, Adobe InDesign
 Web Development using Adobe Dreamweaver
 Knowledgeable in Troubleshooting (Hardware/ Software)
 Basic knowledge in Database: SQL and Microsoft Access
 Knowledgeable in Programming Languages such as VB.NET, C++ and Java
 Microsoft Office Literate (MS Word, MS Excel and MS PowerPoint)
 Ability to start and complete assigned task
 Good communication skills and Hardworking

Awards and Recognition

Top 10 Finalist (Round II) Cisco Networking Academy 2017 NetRiders Asia Pacific and Japan
 CCENT Competition
 Computer System Servicing NCII Passer (Troubleshooting and Computer repair)

Seminars and Trainings Attended

PLUG IT: JPCS TECH CARAVAN IN BATANGAS

Freedom Hall, Lyceum of the Philippines University - Batangas, Batangas City
 February 17, 2018

iSITE: "Data Science and Artificial Intelligence"

Lyceum of the Philippines University-Laguna
 October 1, 2018

Speakers' Training Camp 2018

Freedom Hall, Lyceum of the Philippines University Batangas, Batangas City
 August 11, 2018

Women Rock IT Webinar Series

Lyceum of the Philippines University Batangas, Batangas City
 September 25, 2018

Personal Information

Name: **Carlos John B. Panaligan**
 Address: Balanga Lemery, Batangas
 Email: pcarlosjohn@gmail.com
 Date of Birth: January 31, 1999
 Citizenship: Filipino
 Religion: Roman Catholic
 Gender: Male
 Age: 19



Educational Background

Primary: Lemery Pilot Elementary School
 Secondary: Gov. F. Leviste Memorial National High School
 Tertiary: Lyceum of the Philippines University

Skills

Graphic Designing using Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Adobe Dreamweaver and Flash.
 Knowledgeable in Microsoft Office such as Word, Excel and PowerPoint.
 Knowledgeable about Database Management in My SQL.
 Basic Knowledge in Troubleshooting.
 Good communication skills.
 Knowledgeable in Programming Languages such as VB.NET, C++ and Java.

Awards and Recognition

SAP Business One
 Computer System Servicing NCII Passer

Seminars and Trainings Attended

Leadership Training Seminar (UNEARTHING THE CORE)

Lyceum Philippines University – Batangas
 September 13, 2017

PlugIT: JPCS TECH CARAVAN IN BATANGAS

(“Connecting the Filipino Youth to the Global Horizon”)

Freedom Hall, SHL Building LPU – B
 February 17, 2018

ISITE (Data Science and Artificial Intelligence Conference)

Lyceum of the Philippines – Laguna
 October 1, 2018

Leadership Boot Camp (UnderDog)

Soro-Soro, Batangas City
 October 20-21, 2018

Personal Information

Name: **Nathaniel M. Valencia**
Address: Nonong Casto Lemery, Batangas
Email: natnatvalencia@gmail.com
Date of Birth: June 29, 1998
Citizenship: Filipino
Religion: Roman Catholic
Gender: Male
Age: 20

**Educational Background**

Primary: Lemery Pilot Elementary School
Secondary: Gov. F. Leviste Memorial National High School
Tertiary: Lyceum of the Philippines University

Skills

Graphic Designing using Adobe Photoshop, Adobe Illustrator, Adobe InDesign and Adobe Dreamweaver.
Knowledgeable in Troubleshooting (Hardware)
Knowledgeable in Programming Languages such as C++ and Java.
Capable in Microsoft Office including Word, Excel and Powerpoint
Good communication skills

Awards and Recognition

Best Project to the Object-oriented Programming (Common Illness Cure Treatment) (CICT) (2016 – 2017)
Computer System Servicing (CSS) NCII Certified
SAP Business One Certified

Seminars and Trainings Attended

iSITE Regional Student Conference
Km. 54 National Road, Makiling, Calamba, Laguna
October 1, 2018
SAP Business One
LPU - Batangas
October, 2016
JPCS National General Assembly 2018
Function Hall, Laresio Lakeview Resort, Los Baños, Laguna
March 17, 2018