



TABLE OF CONTENTS

INTRODUCTION.....	2
SYSTEM REQUIREMENTS.....	3
INSTALLATION INSTRUCTIONS	4
MINI-GAMES	5
SETTINGS MENU	8
READABLES CONTENT	11
WATCHABLES CONTENT	13
QUESTION RUNNER	15
STEPPED APPLICATION	16
ABOUT THE DEVELOPERS	17
CREDITS	18

*"The driver on the highway is safe not when he reads the signs, but
when He obeys them."*

– Aiden Tozer



CREDITS

The development of Lakbay: A Three-Dimensional Game about Driving Fundamentals and Road Courtesy and Safety of Gear-1 Driving School was a big challenge to the developers. The support and guidance of the people who believed in us served as the silver lining in the accomplishment of the game. The developers are sincerely expressing their heartfelt gratitude to the following people.

Ms. Khween Princes H. Moncayo and Mr. Paolo M. Rodriguez for their guidance and support throughout the development of study.

Ms. Steffanie M. Bato, Mr. Joshua A. Guevarra and Mr. Alvin D. Catalo for acting as the Research advisers who facilitated the students in this course.

Ms. Rocelle U. Camposagrado and Ms. Donnalyn B. Montallana for being the panelists who imparted their knowledge, ideas, and thoughts for the betterment of the study.

Mr. Darwin L. Atayde, instructor and representative of Gear-1 Driving School for allowing the proponents to be the client in this study.

Mr. Rafael and Mrs. Emilia Atayde, owner/founder of Gear-1 Driving School for founding this incredible school that helped a lot of people to become defensive and ethical drivers.

To the families and friends of the proponents, and lastly, we are heartfully expressing our gratitude to our God almighty, who helped us to be able to survive the hardships of our journey

 **CoDe_A**



ABOUT THE DEVELOPERS

The game was developed by the students of Cavite State University – Bacoar Campus as part of their course, Bachelor of Science in Information Technology. They are John Paul R. Consuelo, Hannie May G. Defacto, and Nommel Isanar L. Amolat. The group name **CoDe_A** was derived from the last names of the three developers – **Consuelo**, **Defacto**, and **Amolat**.

The idea of the game started as a thesis proposal for the requirements in the developer's course. Later on, **CoDe_A** developed further the concept and contents and started the development of the system. The development was a big challenge for the developers but it was worth it as we see how it helps as grow as an individual and as an aspiring IT professional. We are thankful for the hardships and challenge as we overcome them to be a better individual.

 **CoDe_A**



INTRODUCTION TO LAKBAY

- **What is Lakbay?**

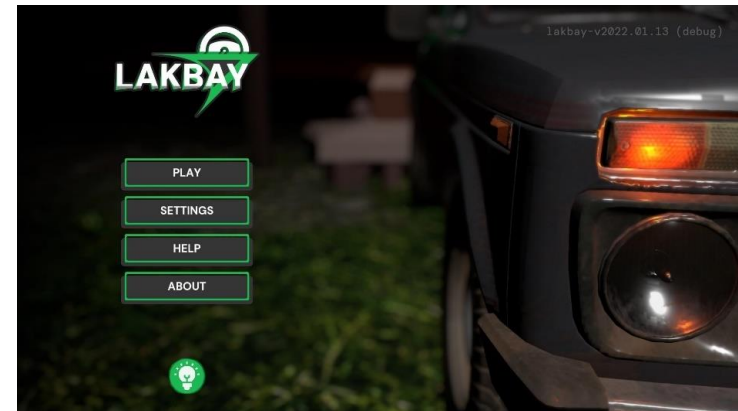


Figure 1. Main Menu of Lakbay

Lakbay: A Three-Dimensional Game about Driving Fundamentals and Road Courtesy and Safety of Gear-1 Driving School was developed to provide a reliable and useful medium for the drivers and aspiring ones to learn driving knowledge through the game. The application provides information about the basics of driving, including rules and regulations on the road.

The Main Menu has 5 buttons namely: Play, wherein you can play the mini-games available; Settings, for the setting preferences of the application; Help, for a detailed instruction of the game's missions; About, for the developer's credits' section; and the Knowledge Explorer which contains lessons about driving.



SYSTEM REQUIREMENTS

- What are the System Specifications required to install the game?

For the game to smoothly run on your device it is advisable to run with bare minimum of higher specifications indicated below:

- Minimum software requirements needed for the application are recommended to be run on phones with an ARMv7 CPU with the minimum requirements: Android 5.1 Lollipop and higher versions.
- Minimum memory (RAM) storage of 1GB, and storage of 300MB.

Note: If the application was run on devices that does not have the minimum specifications required, the game might experience lagging or it would not run at all.



STEPPED APPLICATION

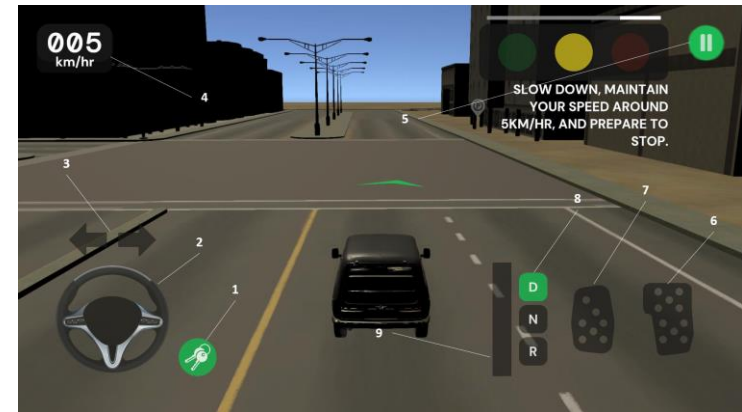


Figure 13. Parts Illustration in Stepped Application

PART NO.	PART NAME	FUNCTION
1	Key	Start the engine of the car.
2	Steering Wheel	Navigation of the car in the game.
3	Signal Lights	Signals for turning left and right.
4	Speedometer	Tracks the speed in km/hr of the car.
5	Menu	Summons the menu.
6	Brakes	Stops the car's motion.
7	Gas	Accelerates the car's motion.
8	Gears	D – Drive N – Neutral R – Reverse
9	Handbrakes	For better stop of the car's motion.



QUESTION RUNNER



Figure 12. Parts Illustration in Question Runner

PART NO.	PART NAME	FUNCTION
1	Left Arrow	Moves the car to the left.
2	Progress Indicator	Indicates the progress of the car towards its end.
3	Life	Indicates the available life chances.
4	Level Indicator	Indicates the current level of the game.
5	Menu	Summons the menu.
6	Right Arrow	Moves the car to the right.
7	Power-ups	Shield. Temporarily protects the car from the obstacles. Stopwatch. Slows the movement of the car. Missiles. Shoots a line of obstacles.



INSTALLATION INSTRUCTIONS

- What are the steps in installing the application on your mobile devices?

Lakbay is a free-to-play game application that can be played on your android devices. To install the application, just follow the following instructions:

- Download the application.
- Install the apk on your phone.
- Wait until the installation is done; and
- You can now enjoy and play the application on your device.

Note: The application only supported Android Operating System only and cannot be install on other existing systems such as IOS, MAC, etc. If there is a problem on the installation, try to download the file again and modify the system settings by allowing to install the application on your device.



MINI-GAMES

- What are the games available in the application?

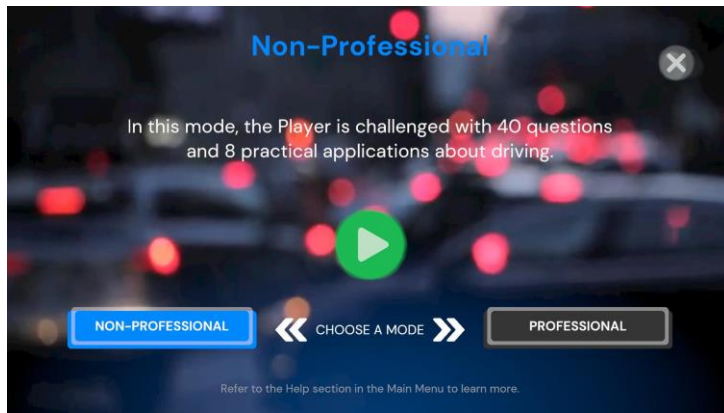


Figure 2. Modes in Question Runner Phase

The game's playable content is divided into Question Runner and Stepped Application. These are the phases of the game, and each one is put under two modes: the Non-Professional and Professional modes. In Question Runner, the goal is for the player to reach the end of the road using a controlled vehicle while answering questions that are triggered through picking questions that are distributed evenly along the road.

To add some challenge, the player must also avoid any barricades. Otherwise, this could lead to losing a life. Additionally, the player is also accompanied by usable perks such as Shields, Stopwatch, and Missile.



WATCHABLES CONTENT

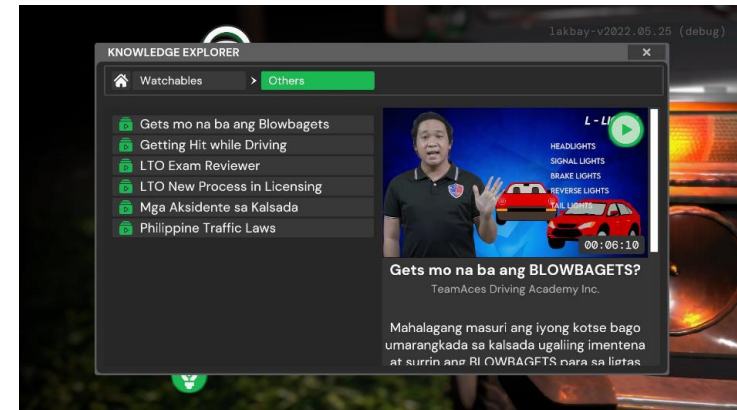


Figure 11. Others category of Watchables

Like the Information Module, this module is also placed under the Knowledge Explorer of the game and contains categories that group the videos available to watch.

The figure above shows the screen layout of the fourth category of the Watchable content, it contains six videos under the Others category.

The availability of the videos was linked in YouTube platform and requires an internet connection.

Note: Not all of the videos are not owned by the developers, courtesy and credits belong to their respective rightful owners.



WATCHABLES CONTENT

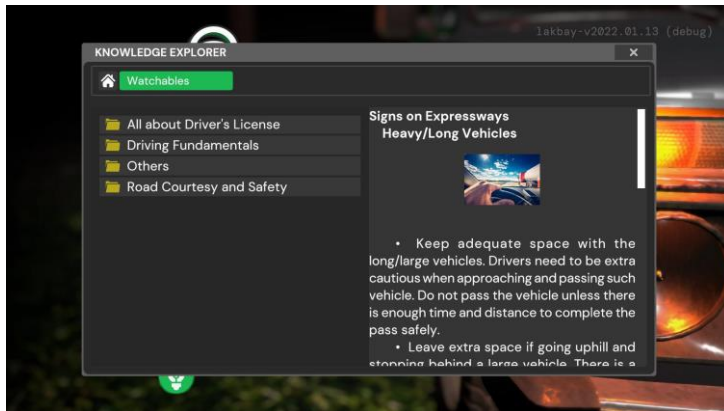


Figure 10. Categories of Watchables

The Watchables Content contain watchable videos that the user can use as a source of information about driving aside from the Information Module. This can be combined with the Information Module to better impart knowledge to the players by targeting learners that learn through reading as well as those that learn more by watching.

The figure above shows the Menu for Watchables that contains four categories of watchable videos: Driving Fundamentals, Road Courtesy and Safety, All About Driver's License, and Others.

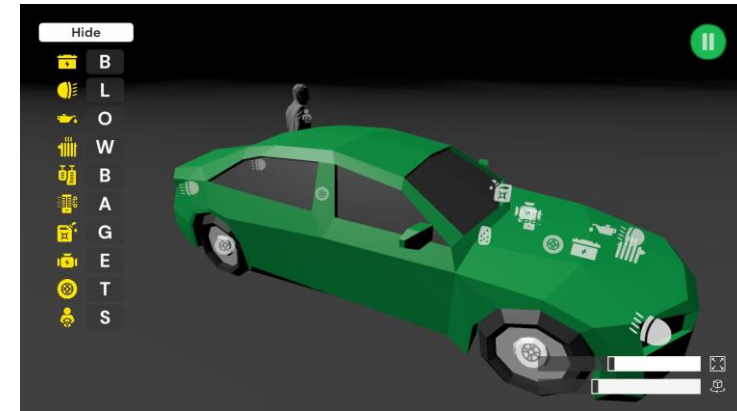


Figure 3. Stepped Application Phase - BLOWBAGETS

The Stepped Application is the next phase played after finishing the Question Runner phase. The goal is to complete 8 missions related to driving. All of these are interacted with by the user using controls found in the User Interface of the game.

All missions must be taken in order to proceed to the next one. The list of the missions are as follows:

- ✚ BLOWBAGETS
- ✚ Traffic Signal Rules
- ✚ Right-Of-Way
- ✚ Three-Point Turn
- ✚ Tailgating
- ✚ Perpendicular Parking
- ✚ Back-in Angle Parking
- ✚ Parallel Parking



STEPPED APPLICATION MISSIONS

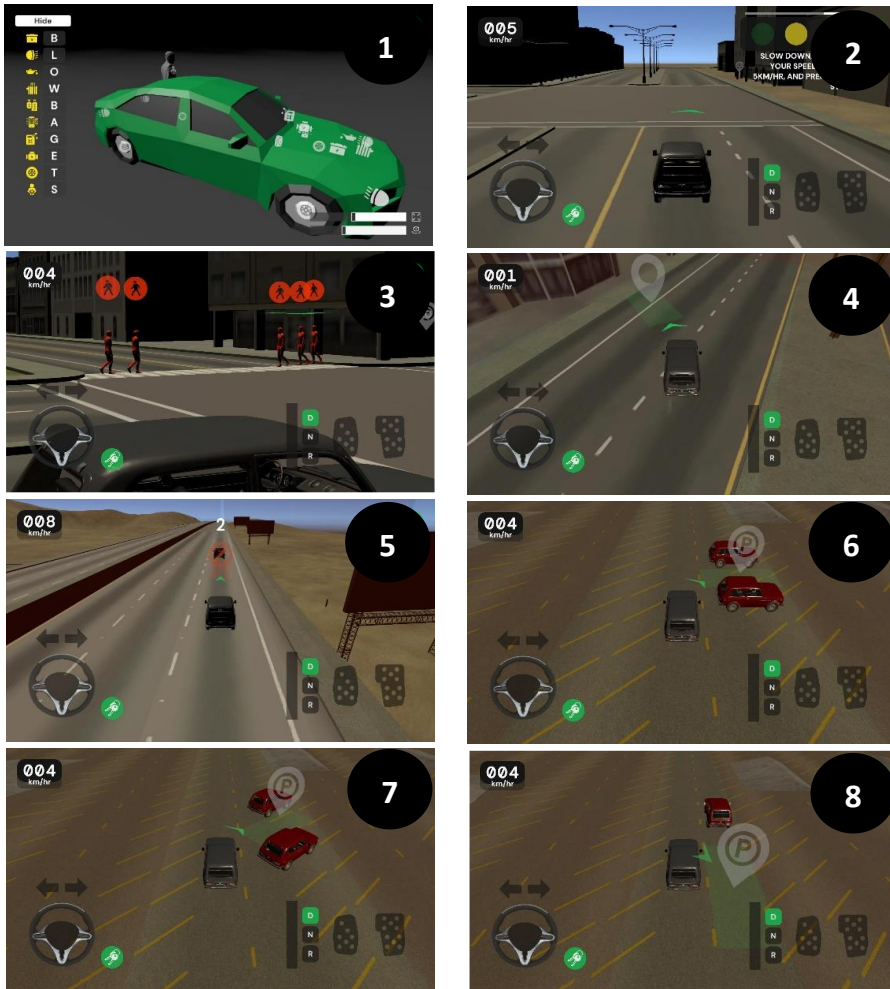


Figure 4. Arrangements of Stepped Application missions



READABLES CONTENT

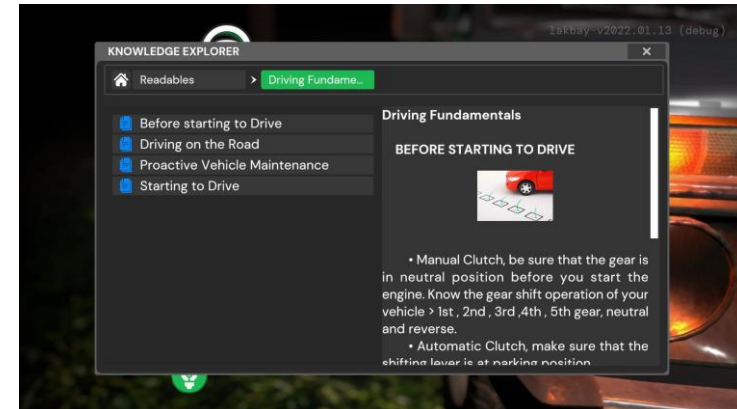


Figure 9. Driving Fundamentals category of Readables

LTO also curates the contents of the lessons since the source of these readable materials is the reliable Land Transportation Management System (LTMS) under the Land Transportation Office. These Informative materials can be found under the Knowledge Explorer of the game.

The figure above shows the screen layout of readable content about Before Starting to Drive under the Driving Fundamentals subcategory. It contains information about Do's before driving a vehicle.



READABLES CONTENT

It offers viewable content that is accessible offline. The materials provided in this module are categorized for better browsing of lessons. The categories the user can pick are Driving Fundamentals, Road Courtesy and Safety, BLOWBAGETS, and Others.

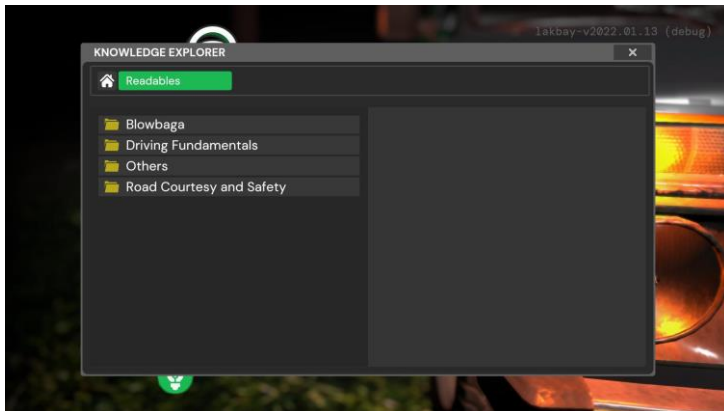


Figure 8. Categories of Readables

All the lessons included in this module are used in the theoretical lessons encountered when getting a license to drive. These Informative materials can be found under the Knowledge Explorer of the game.



SETTINGS MENU

It contains the options that the user can personalize for better playability or just preference. The settings module is divided into the Audio, Video, and Accessibility categories.

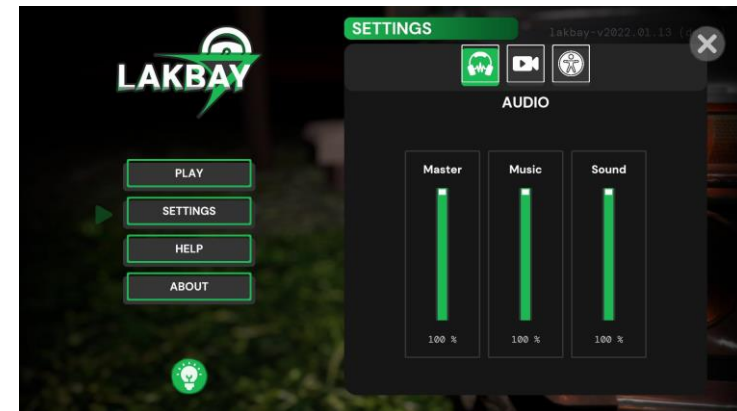


Figure 5. Settings – Audio category

Audio category

It contains controls that can alter the volumes of the game. The game uses 3 channels for playing audio: Master, Music, and Sounds. The Master affects the volume of the remaining channels, while the Music channel is used for playing background music, and Sound is used for playing sound effects in the game.



SETTINGS MENU

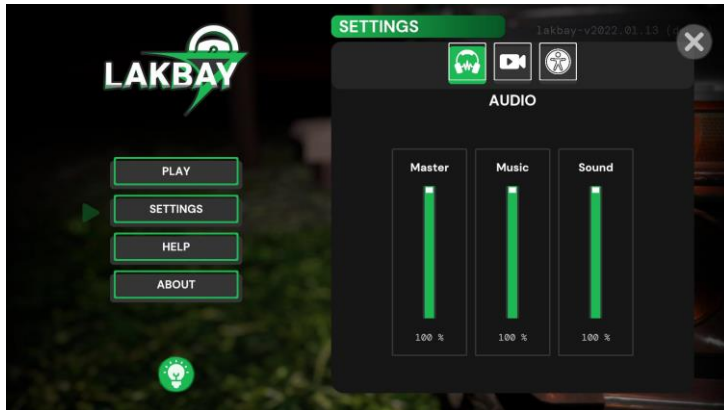


Figure 6. Settings – Video category

Video category

It contains two options related to the game's viewing and graphic performance. The quality sets the game's graphics quality, and the auto-rotation option allows the game to be rotated on both left and right sides in landscape orientation.



SETTINGS MENU

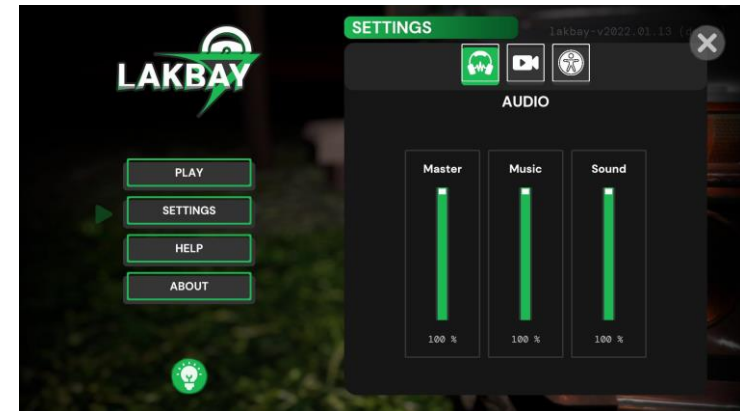


Figure 7. Settings – Accessibility category

Accessibility category

It offers an option that enables players to access the game's contents easily. The language option lets the player choose between playing the game in English (the default) or Filipino



What is Lakbay?

Lakbay is a free-to-play game developed by the students of Cavite State University – Bacoor Campus. It is an android application meant to educate the users about Road Rules and Regulations. It has a user-friendly interface and different modules for learning that anyone will enjoy playing. Also, it aims to be platform or an aid of learning for Gear- 1 Driving School.

The application has four modules namely: Game Module, Setting Module, Information Module, Video Module. These modules work independently to provide the functions of the game as well as to promote better playability and platform of learning.

The developers would like to express their sincerest gratitude to all the people and organizations that helped in the success of the development of the game. May God Bless you all!

 CoDe_A



cvsubacoor@cvsu.edu.ph



LAKBAY: A THREE-DIMENSIONAL GAME ABOUT DRIVING FUNDAMENTALS AND ROAD COURTESY AND SAFETY OF GEAR-1 DRIVING SCHOOL

USER MANUAL A Quick Guide on the **game application**

Lakbay is a free-to-play game meant to educate people about Road Rules and Regulations. It is a convenient platform that can raise awareness about proper driving and instill knowledge about basics of driving and etiquette on the road. This game helps the user to be educated and entertained at the same time and aims to be an aid of learning for Gear-1 Driving School.