AQUA HERO

Kelsey Mae V. Deloeste, Faith Ann J. Maglantay, Charlon T. Valenzuela

Markh B. Jamandre, MSCS, Elmer T. Haro, Ph.D.

College of Information Technology

University of Negros Occidental – Recoletos

Bacolod City, Philippines

{yeslekmae, htiaf31, charvalenz}@gmail.com

ABSTRACT

With the global concern to preserve the natural resources, technology plays an important role in the promotion of raising environmental consciousness. The emerging technology offers a number of ways to mobilize such advocacy, and one of the popular method to leverage persuasion is digital games, an interactive program that integrate edutainment with the premise to educate and entertain.

Aqua Hero is a 2D mobile application that provide edutainment. The purpose is to simulate disastrous consequence of solid and chemical waste found in the ocean coming from various source which includes agriculture, industrial, mining and residential lands. The objective of the player is to capture sinking waste to avoid water contamination resulting to destruction of underwater resources.

The game has four stages with each comprises of three incremental levels. An increasing time requirement is set for the player to pass each level along with significant waste attributes that poses challenges such as quantity, degree of impact, weight, and equivalent points. The accumulated points can be used to acquire power-ups and upgrades in-order to cope with the increasing level complexity of the game play. Substantial information like waste facts, waste effects, and historical events were also added to uphold practical environmental realizations on water resource awareness.

The application was created in conformance with game development concepts and was given a descriptive evaluation of

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very good by experts using the standard software quality assurance validation test. Truly, technology and environment can empower environmental advocacies.

Keywords: digital games, edutainment, 2D mobile application, simulation, game development, software quality assurance

INTRODUCTION

Technology nowadays is essential in the society. Major shift in the climactic condition enables concern citizens to strengthen green computing advocacy. This leads to technological innovation that provide level of persuasion to captures the attention and behavior of the user {ref02}.

Thus, the project introduced is a digital game entitled Aqua Hero, an application aims to provide awareness and learnings about the disastrous effect of water waste {ref01}.

The application is an educational game intended for smartphones and tablet. It provides factual information about the various sea waste and chemicals resulting to water pollution {ref04}.

Aqua Hero is a two-dimensional (2D) game composed of three levels on each stage. These are the residential, agricultural, a mining, and the industrial game scenes.

PRODUCT PURPOSE

The main purpose of the application is to promote effective environmental realizations in protecting the sea from destruction cause by irresponsible waste disposal {ref03}.

With edutainment that highlights the game features, the users will be able to play and explore various challenges equipped in the design of game mechanics.

PRODUCT FEATURES

The four main features of the application were incorporated to illustrate adaptable and generative environment for learning, interactive exploration, reliable source of information, and user-friendliness.

Game mechanics was carefully designed to facilitate easy-to-use navigational controls for flexibility and adaptability of user’s reflex in manipulating game objects.

PRODUCT FUNCTIONALITIES

The game has six major functionalitites described in stages, facts, high score, settings, shop, and help. The stages is considered to be the main source of dumped waste simulated as sinking objects and is collected by the player manipulating the diver as the main character.

Game stages poses an increasing challenge and complexity of the game play. It contains three stages with varying scenes and conditions inorder to surpass level requirements.

Facts encompasses significant topics related to waste information, degree of impact, and past events.

High score display the name of the top players sorted from highest to lowest score being attained.

Setting is a feature that allow users to adjust the background music and sound of the game. The player can slide the volume of the music according to its preference. At any time, the player can set the music on and off.

Shop provides the player with accessories and upgrade items useful for passing the increasing complexity of the game.

Help has two modules: credit and tutorial. Credit shows the brief description of the game as well as the developer’s information. The tutorial is the important module that guide player throughout the game play. The player is not allowed to skip the tutorial stage unless the it performs all the instructions completely.

SUMMARY

Aqua Hero aims to promote an educational game to help the users understand about water pollution and its effects in reality.

It is open to all users and has no age restriction. This is an adventure game with various challenges set on every game level.

Players can easily manipulate all the functionalities with ease and comfort. This application provides educational information that result to widen the knowledge and idea on the importance of keeping the marine life.

RECOMMENDATION

It is recommended that the character must be flexible in terms of user interaction such as speed movement and appropriateness on the use of power items.

Implementation of the application mechanics must be reviewed to properly match character capability with game level requirements.

Also, other recommendations must be set to improving the audio, visual animation, improve the character’s speed, and implement text-to-speech functions for narration. This is to enhance level of attraction and keep the player stay tuned in the game.

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