Evaluating Performance of Point and Shoot in Bow and Arrow Shoot Mobile Game: Touch, Swipe, Rotate, Artificial Intelligence

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Abstract: **Nowadays, mobile devices are the most widespread hardware platforms. Furthermore, the owners of these devices install millions of applications per day, being videogames the predominant type. As a result, an immense number of people is interacting with mobile videogames at every second. Videogames currently produce more revenue than the film and music industries together. The project present a game genre centered on Bow and arrow shooting through a First-person perspective. It makes efforts to raise player's immersion using interface, graphic effect, and so forth. In game environment space, the player experiences complexities (limited arrows) as the level increases.**

The actual working of the system is that when the shooter finds the target with some indication mark then we have to shoot it and if the target is shot successfully then that level is successfully completed and player moves to next level with some power boosters.

To implement game environment system, Microsoft Unity Framework is used. It is a cross-platform game engine with a built-in IDE. It is used to develop video games for web plug-ins, desktop platforms, consoles and mobile devices. The core aspects of FPS play is to shoot at an opponent and movement through the virtual world.

Keywords: **Unity Frame work, Mobile, Controller, Touch, FPS, videogames.**

I. INTRODUCTION

Multimedia refers to content that uses a combination of different content forms. This contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, or interactive content forms. Multimedia in games can be recorded and played, displayed, dynamic, interacted with or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance.

Multimedia devices are electronic media devices used to store and experience multimedia content. Multimedia is distinguished from mixed media in fine art; by including audio, for example, it has a broader scope. The development of multimedia applications in different fields has increased the impact and development of communications that has led to the development of multimedia storage technology. Therefore, producing information management and retrieval tools for handling these large data is necessary. In this regard, games are one of the most popular multimedia and on top of the games. In addition, multimedia is heavily used in the entertainment industry, especially to develop special effects in movies and animations (VFX, 3D animation, etc.). Multimedia games are a popular pastime and are software programs available either as CD-ROMs or online. Some video games also use multimedia features.

Multimedia applications that allow users to actively participate instead of just sitting by as passive recipients of information are called Interactive Multimedia. In the Arts there are multimedia artists, whose minds are able to blend techniques using different media that in some way incorporates interaction with the viewer. One of the most relevant could be Peter Greenaway who is melding Cinema with Opera and all sorts of digital media. Another approach entails the creation of multimedia that can be displayed in a traditional fine arts arena, such as an art gallery. Although multimedia display material may be volatile, the survivability of the content is as strong as any traditional media.

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II. BACKGROUND

Unity is a powerful engine with a variety of tools that can be utilized to meet the user's specific needs. The editor is intuitive and customizable allowing you a greater freedom in the work flow.

i. Unity empowers game designers to make games. There are a handful of basic workflow concepts needed to learn Unity. Once understood, one will find themselves making games in no time. With the time the developer will save getting your games up and running and can have that much more time to refine, balance, and tweak the game to perfection.

ii. MonoDevelop is the *integrated development environment* (IDE) supplied with Unity. An IDE combines the familiar operation of a text editor with additional features for debugging and other project management tasks. The text editor will not be covered here since it is fairly intuitive, but the integration of the editor and debugger with Unity are described below.

iii. In a 3D game, most characters, props and scenery elements are represented as meshes, while a 2D game uses sprites for these purposes. Meshes and sprites are the ideal way to depict "solid" objects with a well-defined shape. There are other entities in games, however, that are fluid and intangible in nature and consequently difficult to portray using meshes or sprites. For effects like moving liquids, smoke, clouds, flames and magic spells, a different approach to graphics known as particle systems can be used to capture the inherent fluidity and energy.

iv. Just as cameras are used in films to display the story to the audience, Cameras in Unity are used to display the game world to the player. You will always have at least one camera in a scene, but you can have more than one. Multiple cameras can give you a two-player splitscreen or create advanced custom effects. You can animate cameras, or control them with physics. Practically anything you can imagine is possible with cameras, and you can use typical or unique cameras to fit your game's style.

v. Concurrent computing is used in the game product is a form of computing in which several computations are executing during overlapping time periods concurrently. The computation can make progress without waiting for all other computations to complete where more than one computation can make progress at the same time. In this system operations are executed in concurrent.

III. RELATED WORK

Our game product basically involved the contents of the shooter games like Archery 3D, Jungle hunter: Archery Master .

i. Archery 3D:

 An amazing Bow and Arrow game to maks the player thrill. The player can test their skills. One can become Archery Masters with your shooting skills. The player can complete each mission to win coins. By upgrading the bows , one can become perfect bow master.

ii. Jungle Hunter: Archery Master:

The player enjoys the jungle hunt while hunting jungle animals in one of the best horse archery games. Jungle hunt is a complete treat for jungle hunting games lovers. Relive the exclusivity in hunting jungle animals blended with the concept of 3D horse archery games. Jungle hunting games were never such before. The player experiences awesome jungle hunt, horse riding and archery skills in the jungle and amazing valleys with archery equipment while riding on the wild horse in the jungle. The game introduces a brand new jungle concept.

iii. Wild animal hunting archer:

Wild animal hunting archer is an action and adventurous challenging game where one plays the role of wild horse rider as

well jungle archer hunter. The goal is to shoot and hunt the forest fierce beasts by hitting them with your bow and arrow. Player also have horse to go here and there. The player can move the archer in the environment by using joystick and screen touch rotation on horse or by walking on ground. There are number of animals that the player has to hunt to complete the game such as bears, wolves, and wild dogs etc. the player have unlimited arrows with them. Targets are at different distances and you also have to defend themselves from their attacks. How long can you persist is found out by using the excellent skills in the gaming.

iv. Terminator Sniper 3D: American:

Terminator 3D latest sniper killing and head hunting game to blow the minds! The spirit of the age is of Conflict and Extreme Revolution. It has futuristic Aggressive and massive sniper weapons, sinister guns, ultra hi-def. extreme cities .Being the sniper killing machine, the player can pick their guns and go on exciting headhunting sniper missions. The responsibility is to complete the sniper hunting missions with maximum headshots and kill all the enemies.

v. Archery Zombies:

The game dives into the world of the undead. By defend themselves and going on a shooting quest to kill all zombies, the player friends are their weapons-bow and arrow. In this world of horror, terror, shooting and archery the player is alone. The player has to kill them all and show no mercy. By training themselves as an archery and weapons expert and hunter to hit them all and secure all locations, the player can upgrade their shooting weapons for a better defence and much better kill. The player has to launch the arrows to hit, kill and save themselves from the zombies.

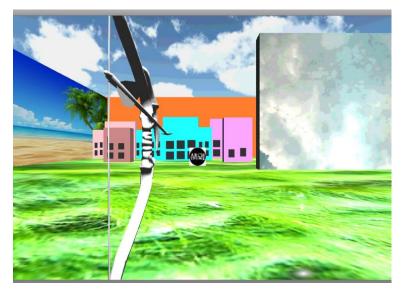## IV. EXPERIMENTAL SETUP

i. Creating Scenes:

Scenes contain the objects of the game. They can be used to create a main menu, individual level. In each scene, the developer can place the environments, obstacles, and decorations, essentially designing and building the game in pieces.

ii. Adding Component & Scripts:

When there is a Prefab or any **GameObject** highlighted then the additional functionality can be added to it by using **Components**. **Scripts** are a type of Component. Components can be added by highlighting the GameObject and by selecting a Component from the **Component** menu. The Component appear in the **Inspector** of the GameObject. Scripts are also contained in the **Component** menu by default.

ii. Working with Cameras:

Cameras are the eyes of the game. Everything the player will see while playing is through one or more cameras. One can position, rotate, and parent cameras just like any other GameObject. A camera is just a GameObject with a Camera Component attached to it.

iii. Graphics:

UnityGUI allows to create a wide variety of highly functional GUIs very quickly and easily. Rather than creating a GUI object, manually positioning it, and then writing a script that handles its functionality, everything can be done at once with just a few lines of code. The code produces **GUI controls** that are instantiated, positioned and handled with a single function call.

iv. Controlling the Physics by scripting:

Rigidbodies:

A Rigidbody is the main component that enables physical behaviour for an object. With a Rigidbody attached, the object will immediately respond to gravity. If one or more **Collider** components are also added then the object will be moved by incoming collisions.

Colliders:

Collider components define the shape of an object for the purposes of physical collisions. A collider, which is invisible, need not be the exact same shape as the object's mesh and in fact, a rough approximation is often more efficient and indistinguishable in gameplay.

Character Controllers:

The character in a first- or third-person game will often need some collision-based physics so that he doesn't fall through the floor or walk through walls. Usually, though, the character's acceleration and movement will not be physically realistic, so he may be able to accelerate, brake and change direction almost instantly without being affected by momentum.

V. RESULT

The designing of this system is for android devices which are prominently in use now a days. It is most popular platform of users. Games make people more out of stress. Basic purpose of this game is to provide entertainment to the target audience.

The designing of this game app is considering target audience of the age of twelve years and above.

Game design is a creative design domain in which creativity is fundamentally expressed through engineering interactive rule systems. A game design ner combines a set of game mechanics such that, when they interact with each other and with the player's actions, they produce the desired game play.

The designing of this system is for android devices which are prominently in use now a days. It is most popular platform of smartphones. So this game app is specially designed for android users. Games make people more out of stress. Basic purpose of this game is to provide entertainment to the target audience. The designing of this game app is considering target audience of the age of twelve years and above. Game design is a creative design domain in which creativity is fundamentally expressed through engineering interactive rule systems. A game designer combines a set of game mechanics such that, when they interact with each other and with the player's actions, they produce the desired game play. The effective methodology used for the problem solving in this system is the product R&D process and team management style referred as Agile Methodology. Agile method put the emphasis on producing demonstrable iterations of a game almost immediately into production, creating prioritized vertical slices that iterate on the most critical elements and features. The method also put great emphasis on the organization of teams and the relationships therein, as well as the cycles in which teams must plan and carry out their project objectives. The result was a central ideology, and a manifesto to go along with it:

1. A working piece of software had more value than a document that indicated what the software should do.

2. Regular collaboration with customers was valued more than extensive contracts that outlined the intended usage of a product up front.

3. Value individuals solving problems rather than processes or tools.

4. And most importantly, they valued responding to change over following a plan.

As a methodology, the same approach is applied to product development in spirit, where project teams are reorganized into small teams that work closely together on specific components of a project. Iterative development is stressed, with the project divided into components that are "shippable" pieces that can be demonstrated, tested and evaluated for functionality.

Idea Matrix:

I	D	E	A
Increase the user engagement by system	Driven knowledge of touch sensitivity	Educate user by providing better controls	Accelerate the speed of arrow
Improve precision	Deliver the complete entertaining game	Evaluate the knowledge opportunities.	Associate knowledge of user and system
Ignore the graphics details	Decrease the size of system	Eliminate low system performance	Avoid the low graphics.

VI. CONCLUSION

With all the accumulated effort invested in our game**,** the game finds itself in a much better shape and close to the users as well as to support team if the entertainment of the users is considered.

In this game, we have used many functions related to the user point of gameplay. We have implement the game system through an application on Android platform. We have adopted Unity Framework to illustrate the effectiveness of the system.

We have tested our game on various platforms. The testing results show that our developed system can work effectively on android devices.

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