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Development of DAVE 3D Android Gaming Application

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ABSTRACT: The main aim of our project is to create the classic game, Dangerous Dave, in 3D with improved graphics and gaming environment on the Android Platform. A Computer Game is a Software Program. It involves player/s and is all about making decisions and control. The basic aim of the game shall be to give the player an experience that he/she shall cherish. Mobile games are usually downloaded via the mobile operator's network, but in some cases games are preloaded in the mobile handsets.

Keywords: Android, Game, Smartphone, Unity 3D, Blender, Prototype.

I. INTRODUCTION

Dave 3D is a single-player arcade/platform game. The main aim of our project is to create the classic game, Dangerous Dave, in 3D on the Android platform in which the player's primary form of movement relies upon gravity. As we are making a mobile game, we have to keep in mind the limitations of technologies present on different devices. The basic aim of the game shall be to give the player an experience that he/she shall cherish.

This is single player game. It is famous worldwide. The project is to bring back this fun on handsets with 3D experience. The game will be designed using software Unity3D and Blender, the programming for movements control will be done in JAVA and C#. Introducing this game on smart phones will give an exciting experience to the users when played using screen touch controls. The game can be installed on different operating systems like Android, IOS, etc. We are developing it for android platform.

To develop a game in 3D for Android Phone using Unity3D, Blender, Java, C#. Unity3D is software to design games in 3D, movements, controls, and all other motions are implemented using the codes scripted in it. Blender is for designing different game models. The objective is to design the game using all the things mentioned above and their collaboration. To obtain the game DAVE in 3D for Android phone is the goal of this project.

The scripting of C# and Java in Unity 3D provides a programmer-friendly space to develop the game. The compatibility between Unity 3D and Blender is used for importing and exporting designed models from one into another, it helps in developing the attractive appearance of the game. The final uploading of the game on android will be using android development tool.

II. LITERATURE SURVEY

MDA is a formal approach to understanding games on which one attempts to bridge the gap between game design and development. This method clarifies and strengthens iterative processes of developers, scholars and researchers, making it easier for all parties to decompose, study and design a broad class of game designs and game artefacts. Games are created by developers, and consumed by players. They are purchased, used and cast away like



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other consumable goods. The difference between games and other entertainment products (such as books, music, movies and plays) is that their consumption is relatively unpredictable. The string of events that occur during game-play and the outcome of those events are unknown at the time the product is finished.

As computer games become more complex and consumers demand more sophisticated computer controlled opponents, game developers are required to place a greater emphasis on the artificial intelligence aspects of their games. The fluidity of application markets complicate smart phone security. The rapid growth of Smartphones has led to a renaissance for mobile services.

Computer games have grown considerably in scale and complexity since their humble beginning. Modern day computer games have reached levels of realism, in areas like graphics, artificial intelligence and physical simulation. However, despite significant advances in software engineering, the development of computer games generally does not employ engineering practices and tools. Electronic games are a billion dollar industry developing software system commonly reaching into the millions lines of code, but the development process remains unchanged from the early days of. It's not unusual to move from the game idea directly to coding, where the success or failure depends entirely on the skill and experience of the developers. Although recent efforts have shed light on security issues, there remains insight into security characteristics of smart phone applications. Application markets such as Apple's App Store and Google's Android Market provide point and click access to hundreds of thousands of paid and free applications.

III. FEASIBILITY STUDY

Feasibility study is an un-biased evaluation of an App idea, conducted for the purpose of determining whether the idea is viable and worth pursuing. This study avoids any surprises during the course of App development/launch.

Types of Feasibility study:

1. Product Feasibility
2. Economical Feasibility
3. Technical Feasibility
4. Legal Feasibility (if applicable)
5. Operational Feasibility

Product Feasibility

We use product feasibility to determine whether the idea is a New concept. If new concept is not implemented then really do we need to post on old concept. In our case, Dangerous Dave is an old concept. But, introducing this classic role playing game to the Android Platform shall prove to be very interesting.

Economical Feasibility

This helps us analyze the resource cost. In our case, we are using Free-wares and open source designing and programming, so we do not need to account for any software purchases. Only we will need to specify the Hardware elements required to implement this project, such as an Android based Smart Phone for testing and running of the Project and Laptops or Desktop Computers for development.

Technical Feasibility

This includes experimental features and relevant technologies used. In our case, the technologies being used are the latest ones, with the most advanced features and capabilities.

IV. EXISTING SYSTEM

The idea of Dangerous Dave came to John Romero under the influence of Super Mario. There are definitely similarities that are easily noticeable, such as the secret levels, the level design, the monsters, and the jumping. The mission is to guide Dave through ten levels, collecting trophies in the hideout of his enemy, Clyde. It was developed for the Apple II and DOS and is in 2D.



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V. PROPOSED SYSTEM

To develop a game in 3D for Android Phone using Unity3D, Blender and Unityscript. Unity3D is a software to design games in 3D, movements, controls, and all other motions are implemented using the codes scripted in it. Blender is for designing different game models. The objective is to design the game using all the things mentioned above and their collaboration. To obtain the game DAVE in 3D for Android phone is the goal of this project.

VI. EXPERIMENTAL STUDY

Android is an open source operating system developed by Google. On an average, 75% of the mobile market share is covered by Android..It provides a superb platform for creating apps and games as well as an open marketplace for distributing them instantly. Thus, we aim to create our game on the android platform. In this way, we can develop an interesting, user friendly game with the help of Unity 3D software, which can easily be played by maximum number of people.

VII. ABOUT UNITY 3D

Unity is integrated development environment for developing games. It is for working in 3D virtual worlds. It gives rich out-of-the-box functionality for creating games with interactive 3D content. Unity is used for mapping art and assets into scenes and environments, lights, audio, effects, physics, animation and playing test and editing game, to publish to chosen platforms, like Mac, Windows and Linux desktops, Windows Store, iOS, Android, Windows Phone 8, Blackberry 10, PS3 and Xbox 360.

Unity is helpful in designing GUI for attractive appearance of the game. From Splash screen to playing window, everything can be developed in unity. It is very developer friendly as it is easy to learn and work with. It has got a wide range of acceptance for work done in different softwares like Blender, Photoshop, etc.

Scripting

Scripting in Unity is very similar to JAVA script. It is very compatible for a special run-time environment. It can interpret rather than compiling and automating the execution of tasks which alternatively can be executed.

Versions

The first version of Unity was launched at Apple's Worldwide Developers Conference in 2005. Unity 3 was released in September 2010. It focused on introducing the tools with high-end studios. It captured the interest of developers and bigger firms for providing independent and teams with a game engine and was a affordable package. The latest version of Unity, Unity 4.0, was released in 2012, it included additions such as Mecanim and DirectX 11.

Mecanim

Mecanim is Unity's animation technology that has been in development for years. The technology was built to bring fluid and natural motions to characters with an advanced interface. Mecanim included tools to create state machines, blend trees, automatic retargeting of animations, etc within the Unity editor.

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VIII. PHASES OF PROJECT

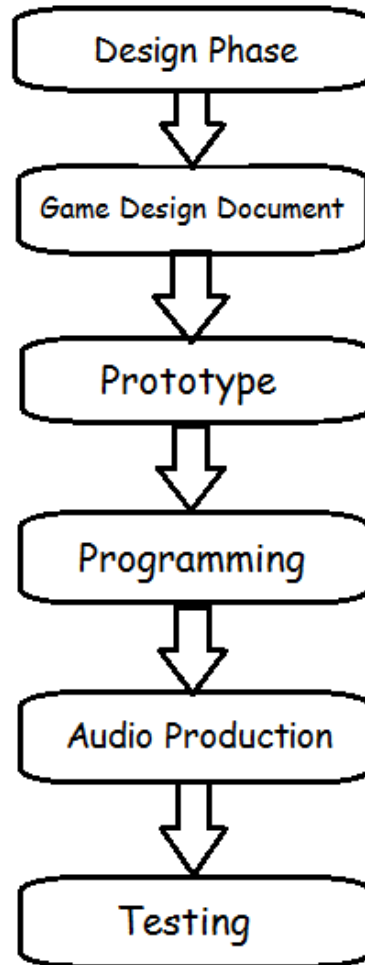


Fig. 1 - Phases of Game Development

1) Design Phase : This is basically the planning phase of the project, which mainly focuses on the idea of concept and development of initial design documents. The main aim of this phase is to produce clear and easy to understand documentation.

2) Game design document : This document describes the game's concept and major gameplay elements in detail. This may include functional prototypes of the basic sections of the game.

3) Prototype : This is a very important part of game designing. It allows programmers and designers to experiment with various ideas and concepts. It plays an active role in determining the features specified by the game design. The prototyping is done in the pre-production phase or during active development.



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- 4) Programming : This phase basically tests ideas that come to the programmers mind by making prototypes. Bug fixes and new patches are released during this phase. This is one of the important phases of Game Development.
- 5) Audio Production : Audio plays a very important role in gameplay. This phase requires knowledge about sound-effects, music and voice-overs. For example, 20 hours of single player gameplay may feature 60 mins of audio.
- 6) Testing : Quality is assured during this phase. Once the game is executable, testing starts. Testing is vital for modern, complex games as single changes may lead to catastrophic consequences.
- 7) Maintenance : After necessary feedback is obtained, this phase is initiated by programmers and developers. Patches are developed and delivered during this phase. This process may take days or months to complete depending upon the quality of the bug.

IX. ADVANTAGES

Make the gaming experience more fun with engaging social features. Give players a way to connect to their friends on social networking websites, such as Facebook and Twitter. They can share their scores and compete with their friends. Social features help build community and improve user engagement, by bringing people closer together during times of joy and happiness.

X. CONCLUSION

An attempt to bring platform games into 3D. It brings a nostalgic experience to the users. The implementation of the techniques is illustrated through the Android Mobile Game and described in detail with the complete code and Gaming Interface. Therefore, this project results in a successful definition of the instructions for the development techniques and a functional Android Base Game Application.

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