**MOOC Seminar Report**

**On**

**ANDROID 2D GAMING APPLICATION**

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**CERTIFICATE**

### Certified that Miss Sakshi Rajwar (Roll No.- 1918645) have Completed MOOC Seminar on the topic “Android 2D gaming Application” Seminar (SCS-401) in Graphic Era Hill University, Dehradun. Students have successfully Completed this Course as best of my knowledge.

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**1. PROJECT PLAN OF “ MARBLE RUN”**

1.1 Gaming in the field of software engineering

Gaming in the Field of Software Engineering In the fast growing field of software engineering and development and even more rapidly growing sector of game development the future is hard to predict. We are working with this game as our software project lab-II.SPL-II is a 3 credit course and as part of our degree we choose this type of work for doing better with development cycle, development period, graphics, scripting, adopting new technology, animation. In general software project is a project focusing on the creation of software. Consequently, Success can be measured by taking a look at the resulting software. In a game project, the product is a game. But and here comes the point: A game is much more than just its software. It has to provide content to become enjoyable. Just like a web server: without content the server is useless, and the quality cannot be measured. This has an important effect on the game project as a whole. The software part of the project is not the only one, and it must be considered in connection to all other parts: The environment of the game, the story, characters, game plays, the artwork, and so on.

1.2 Background of this project

Background of this Project Background is a set of events invented for a plot, presented as preceding and leading up to that plot. It is a literary device of a narrative history all chronologically earlier than the narrative of primary interest. In our project it’s a single player strategy game emphasizing logical thinking and planning. They often stress resource and time management, which usually takes precedence over fast action and character involvement. Tactical organization and execution are necessary, and the game creators usually place the decision-making skills and delivery of commands in the player’s hands.

1.3 About Project

. About the Project It’s a complete strategy game with different levels. The main character of ‘”Marble Run”’ is ball which run in the marble. **Marble Run 2D** is a **track** designer **game** that lets your imagination **run** (or roll) wild. Rearrange various types of blocks and planes to create a surface for your **marble** to traverse. You are completely free to design the structures of your dreams, as the sky is the limit here.

1.4 Scope of our game

Scope of Our Game This Report describes all the requirements for the project. The purpose of this research is to provide a virtual image for the combination of both structured and unstructured information of our project “Marble Run”. “Marble Run” is a single-player strategy game on the Android platform. The ball will progress through levels which require precise manipulation of the environment, though the game Encourages creativity and daring via branching pathways. The episodic structure of the game facilitates the pace of the story. We demonstrate the action

**2. SOFTWARE REQUIREMENTS SPECIFICATION OF “Marble Run”**

2.1 Introduction

Introduction In this section the documentation of this report is specified. It specifies the document convention, document scope and also provides a suggestion for the readers of the document.

2.2 Purpose of this chapter

Purpose of this Chapter This Software Requirements Specification (SRS) part is intended to give a complete overview of our Project the game “Marble Run” including the action flow, initial user interface and story therein. The SRS document details all features upon which we have currently decided with reference to the manner and importance of their implementation.

2.4 General Description

General Description This section includes the perspective of our product and the system environment it requires. It specifies the QFD (Quality Function Deployment) of our game and also the User Story of it.

2.5 Product and Business Perspective of the Game

 Product and Business Perspective of the Game Software product development is a paradigm shift from routine application maintenance and support in the software industry. Development a game/software product from scratch is a significant challenge for any organization. It requires considerable investments in terms of effort and cost and also confirms client involvement, knowledge about client market (example: Google play). We have compiled some interesting articles from the web for you which should form the basis for a concluding public discussion about the future of the game industry. Please feel free to interrupt us any time and contribute your ideas. This will make our game much more lively and interesting. Here this report product perspective describes the overall description

2.6 System Environment

System Environment Gamer Gamer can interact with system by giving input (press key to start game) to the system. System give those inputs to script, if any change occur (if the value is changed) this object send to renders to display the things

2.7 Quality Function Deployment of “Marble Run”

Quality Function Deployment of “Marble Run” Quality Function Deployment is a technique that translates the needs of the customer into technical requirements for software/game. It concentrates on maximizing customer satisfaction from the Software engineering process .With respect to our project the following requirements are identified by a QFD. Input Manager (Keypad/game pad) Script (Compile) Renders (Display).

**3. REQUIREMENTS**

3.1 Normal Requirements

Normal Requirements Normal requirements consist of objectives and goals that are stated during the meeting with the actor/gamer/relevant people. Normal requirements of our project are:-

1. User friendly efficient and lucrative system.

2. Minimum maintenance cost (may be graphics definition).

3. Availability of expected requirements within the PC/mobile configuration.

4. Easy to operate.

5. They observe our game as this is build with professional manner.

6. The game with measured coding, professional thinking.

3.2 Expected Requirements

These requirements are implicit to the system and may be so fundamental that the actor/gamer/ relevant people does not explicitly state them .Their absence will be a cause for dissatisfaction.

1. Develop system within limited cost.

2. Maximum high definition.

3. Minimum hardware requirements which is relevant for this game.

4. Design whole system with efficient manner.

3.3 Excited Requirements

These requirements are for features that go beyond the customer's expectations and prove to be very satisfying when present:

1. We may provide some cheat codes.

2. Maximum high regulation with minimum hardware.

3. We may provide an international player rank list.

4. Easy to update

3.4 Specific Requirements

This section covers the project external requirements of our game and also indicates the user characteristics for this project. 2.3.1 External Interface Requirements of the Game

**5. External Interface Requirements of the Game**

5.1 User Interface

 User Interfaces Every game must has a menu so is can be user friendly enough and gamers can easily fulfill their need. Menu is also an important thing while creating the SRS document section. In this SRS document part; we have used the menu snapshots in the user manual part. These snapshots are based on the menu of the game.

5.2 Hardware Interface

 Hardware Interfaces “Marble Run” is a mobile gaming application designed specifically for the Android platform and is functional on both mobile smart phones and tablets. Gaming application data is stored locally on the game engine elements. “Marble Run” has been developed for Android developed Version and all subsequent releases. In the future we released in the android platform. Now the Android platform is graphically adaptable with a 2 dimensional graphics library and a 3 dimensional graphics library based on OpenGL ES 2.0 specifications as well as hardware orientation, scaling, pixel format conversion and accelerated 3D graphics.

5.3 Software Interface

 “Marble Run” has been developed using a series of game development tools. Working tools and platform

• Unreal (Epic Game Engine

• Android Software Development Kit (Android SDK) : Software development kit for applications on the Android platform. We want to release this game in the Android platform. 5.4 User Characteristics For the System

User Characteristics for the System There is only one user at a time in this software and the user interacts with the game (system) in different manner. So, Gamer is the only one who communicates with the system through playing the game. And this gamer can be any person. The primary requirement is that, the gamer must read the playing procedure provided by us (developers).

 Data Model If software requirements include the need to create, extend or interface with database or if complex data structures must be constructed and manipulated, the software team may choose to create a data model as part of overall requirements modeling. Although our game has many data objects, it does not have any data storage. All the objects and their related data are handled by the game engine. So the developers need not think about data storage. For this reason, data model is redundant for this game project.

2.4.3 **Behavioral Model** The Behavioral indicates how software will respond to external events or stimuli. There are two ways to show these responses. One is state diagram and the other is sequence. Usually state diagram can be made in two ways, one is creating a state diagram for each class and the other is to create a state diagram for the whole system. As we don’t have any class, for this is not an object oriented game, we have followed the later one. We used the modules of the use case scenario to create the state diagram. And to lessen complexity we have divided the state diagram into two diagrams. On the other hand, for the sequence diagram, we have created separate a sequence diagram for all the use cases when necessary.

**Backend Programming** The "back end" is the code supporting that front end (responsible for database access, business logic etc). In simple term, application front end is what you see (i.e. the user interface) and application back end is the application engine that you do not see. The "back end" is the code supporting that front end (responsible for database access, business logic etc). Foe efficient implementation, to increase user acceptance both two are very important in software industry.

**CONCLUSION**

Hence I’am glad to have this project Game Developer .I cam to know about Epic Game Engine and how to work with different software game engines .This project leads to enhance my knowledge.

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