Summer Research School 2018

**PROJECT TOPIC**

**Taos**

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{\displaystyle d=2t}

{\displaystyle A\_{q}(n,d)\leq {\frac {q^{n}}{\sum \_{i=0}^{t}{n \choose i}(q-1)^{i}+{\frac {{n \choose t+1}(q-1)^{t+1}}{A\_{q}(n,d,t+1)}}}}.}**Table of contents**

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1. Resume

Virtual reality is an interactive computer-generated experience taking place within a simulated environment, that incorporates mainly auditory and visual, but also other types of sensory feedback. This immersive environment can be similar to the real world or it can be imaginative, creating an experience that is not possible in ordinary physical reality. **Taos** is a virtual reality game aimed at entertaining people and releasing of their tensions and stress. The game is designed to be as simple as possible, so it can be used by people of all ages and with minimal computer skills. **Taos** is a single-player game, without any opponents.

1. Objectives and tasks of the project

**Taos** has been created with the idea of ​​being a good helper for tapping into **positive emotions like curiosity, optimism, creativity, and even love.** A recent study has shown that one of the biggest benefits of playing games is that these emotions stay with the people up to 24 hours after they have played. It was also found that **people are more likely to set an ambitious goal for themselves after they have succeeded in a game. T**hey will also speak up more for themselves. **Taos** can be played by people of all ages with minimal computer skills.

1. Description of the applicable field

The popularity of virtual reality is constantly growing and continues to push the boundaries of people’s imagination. People grew tired of ordinary 2D media content, so virtual reality is being called to deliver information in a new way to engage them. Some businesses use the extending virtual reality trend already and adopted the technology to engage and interact with their target audiences.

1. Selection of used techniques

The platform on which Taos has been created is Unity and the programming language is C#.

1. Major points in the implementation of the project

I. Stage: Develop the idea of ​​the project and its implementation.

II. Stage: Construct the program to complete functionality and simplified and finished graphics.

III. Stage: Build the graphic look of the program.

IV Stage: Remove technical errors.

1. Level of complexity of the project

**Main problems in realizing the set goals:**

- choosing the right, interesting, useful and, if possible, unique topic of the project;

- creating the graphic design of the program;

- a complex and long-lasting program implementation of the project.

1. Interface

The interface of the game Taos is varied, functional and stylish.   
The game recreates a desert environment as the player's goal is to avoid the approaching rocks.

1. Logical and functional description

**Basic modules**

1. Game scene;
2. Death scene.

**Basic functions**

1. Generating a random path which was previously initialized as a prefab;
2. Creating controlling-friendly system;
3. Creating a death system which represents the following cases:

* Collision with rocks;
* Getting out of the playable plane.

1. Sources:
2. Unity Documentation - <https://docs.unity3d.com/Manual/index.html>
3. Oculus Developer Center - <https://developer.oculus.com/downloads/unity/>  
   Unity channel - <https://www.youtube.com/user/Unity3D>
4. Game Design Essentials, Briar Lee Mitchell - <https://www.goodreads.com/book/show/13838356-game-design-essentials>
5. Conclusion

**Taos** is a modern and multifunctional virtual reality game that impresses with its excellent design. It is a great helper for anyone who wants to go on a fabulous adventure and wants to tap into positive emotions like **curiosity, optimism and creativity.**

1. Source code:

<https://github.com/mon1313/Taos>

1. Future plans

Creating new levels is key concept of developing the project. Creating multiplayer environment would expand the accessibility of **Taos**. New features will be added so that the players can choose between different types of tracks, weather conditions and number of competitors. When this is done, the game will be uploaded on Google Play Store and App Store.

1. Acknowledgements

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