PMLAB: A SERIOUS GAME FOR COE-DAT AS A VIRTUAL POLICYMAKING LABORATORY

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Abstract

Traditionally, games are considered as a source of entertainment. However, they can be equipped with educational content; which is known as “serious games”. In this project, serious game theory has been used. Recently, there is a growing interest towards serious games in various fields. Since serious games can be utilized for wide range of opportunities. In this project, we designed a military serious game to provide a virtual policymaking laboratory, which can be used by NATO Centre of Excellence Defence Against Terrorism (COE-DAT) trainees on counter terrorism. The output of this project can be used as a complementary tool to support theoretical counter-terrorism courses.

Key words: *Military Serious Game, Terrorism, Policy Making Strategy*

Introduction

As a senior project group, we are interested in both games and defense domain. In this project, we serve a useful and critic purpose about improving strategic skills of the military personnel about counter-terrorism. To collect data from a multicultural group of officers, a board game has been developed. In addition, the game prototype helps us for comprehensive understanding of digital game and project.

Although theoretical training might be sufficient to a certain level, it is not enough for full improvement of learning efficiency. Supporting strategic theoretical trainings with applied practical lessons is an important progress. This technique allows us to consolidate the theoretical lesson learned. In this context, NATO's Centre of Excellence Defence Against Terrorism (CEO-DAT) has lack of a laboratory for strategic planning and policy making. Considering the needs of CEO-DAT, it is aimed to create a tool for them to gain virtual experience for the military personnel. In recent years, interest towards serious games based on education has been increased. According to detailed research done the project "Sibilla" has the closest features to our project. "Sibilla" is a serious game that is at the idea stage within NATO. It is planned to train military personnel about counter-terrorism.

Company Info

The project has been conducted with Centre of Excellence Defence Against Terrorism (NATO COE-DAT). It is opened in 28 June 2005 with an official ceremony by Chief of General Staff Gen. Hilmi ÖZKÖK. It consists of eight sponsoring nations that are Bulgaria, Germany, Hungary, Netherlands, Romania, Turkey, United Kingdom and United States. NATO COE-DAT advises on counter terrorism. The counter terrorism lessons are given to military officers. The project has been designed to support these theoretical courses of NATO COE-DAT. The project has been conducted with the military information of Colonel Mustafa Dinç and Lieutenant Ali Atalay.

CENTRE OF EXCELLENCE DEFENCE AGAINST TERRORISM

Figure 1 – Company Logo

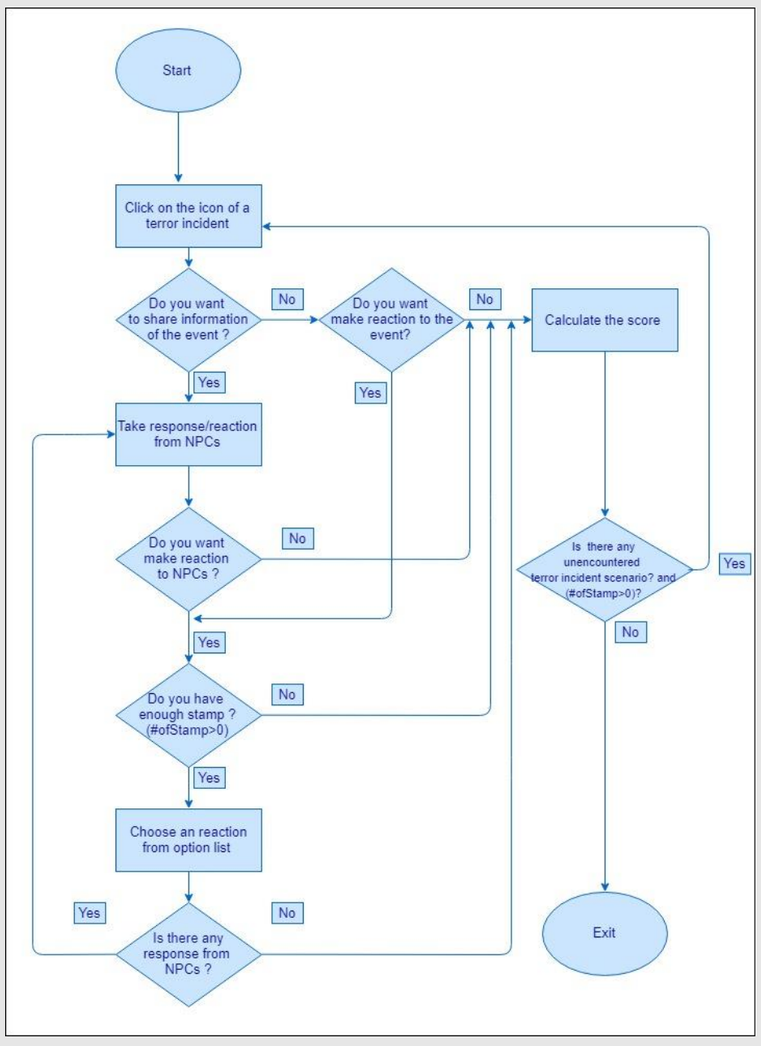

Figure 2 - Flowchart

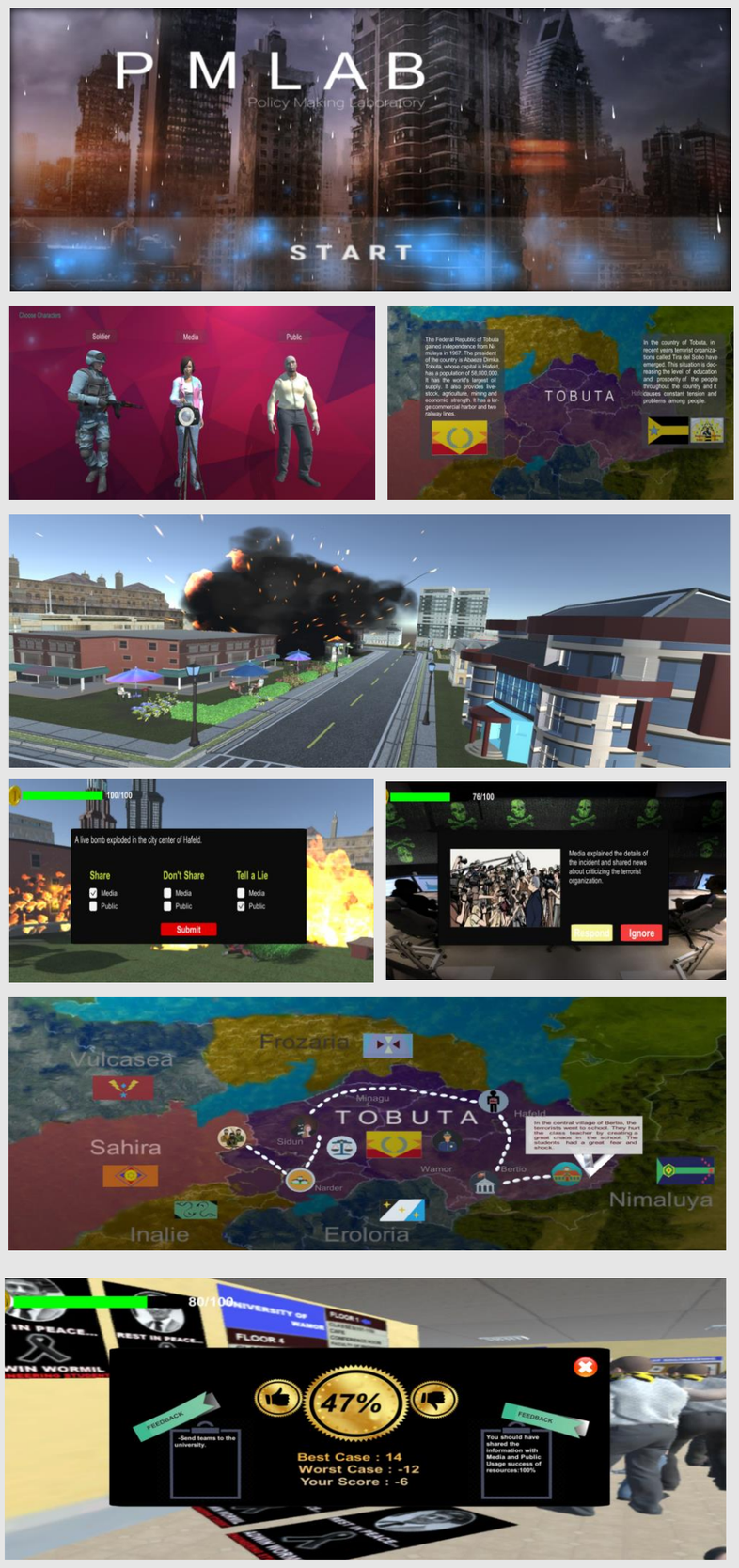

Figure 3 – Finished Product

Solution

A prototype has been developed in order to get a comprehensive knowledge about project. The mechanism of the game has been developed with the prototype. In the prototype, board game, players can have roles as public, media or military personnel. However, in the computer game, public and media roles are planned to control by computer (i.e. as non-player characters (NPCs).

The nine terror incidents have been determined with the help of military personnel. In these scenarios, it is aimed to contain different aspects of terrorism such as political, economic, social, etc. We preferred Unity 3D game engine for simulating terror incidents, and “Mixamo” has been utilized for high quality characters. C# is the programming language used. An interactive approach is created for improving strategic decision-making skills of trainees by a decision making mechanism. According to decisions of the trainee, providing feedback part has been developed. Normalization and min-max algorithm has been created for performance evaluation of the trainee.

<u>Technologies used in the project:</u>

- Simulation
- Gamification
- Min-max algorithm
- Decision making mechanism
- Normalization
- Stochastic Game Process

Results & Conclusion

PMLAB provides an opportunity to experience virtually different terror incident outcomes from various aspects of terrorism. In this way, military personnel can increase own performance in strategic and effective decision-making skills. The project has effective visuals for its participants who could be able to judge their understanding of the terror incidents in a game form. At the end of the game, users, trainees can evaluate their performance and scenario based feedback. Therefore, the output of this project is beneficial and impressive for the military personnel of COE-DAT.

Acknowledgement

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Figure 4 – Project Staff