

UAT MS555 Assignment 3

Choose Your Adventure

The Killers

Problem Statement

The United States Department of Defense has contracted us to construct a game which can be used as a distributed problem solver for complex combat situations, alike to "Foldit" for solving protein folding if in approach only. Our application will incentivize repeated and timely gameplay in order to promptly solve new problem situations posed by the DOD while obfuscating exact mission details and expanding on possible outcomes.

Gold Card

Cost

\$2 million USD

Schedule

1 year

Scope

- Create a game
- Provide a way for DOD contacts to add new missions & mission parameters
- Provide a way for DOD contacts to retrieve solutions to provided missions

The Problem

Create a new game allowing players to solve combat scenarios for the DOD.

The Customers

The US Department of Defense.

Detailed Plan

(For the sake of this plan we're going to call the game "The Killers".)

The Killers will be a strategy game available on all major gaming platforms that will take the concept of *SWAT 4*'s realistic and strategic squad-based engagements, the aesthetic and gameplay elements of *Breach & Clear*, and the "AI Storyteller" concept from *RimWorld*. Matches will be played as top-down, real-time with pause engagements where the player is provided with a basic mission parameters, allowed to choose their approach and the load-outs for their troops, and then thrust into combat in the chosen mission. During the mission the player will issue orders to their troops, have their perception limited based on the current position of their troops and the environment, and potentially have pseudo-random risk elements thrust upon them during the course of the mission. If the player manages to complete the mission goal they are rated with a score based on their efficiency, adherence to military protocol and international law, total loss of life, and the number and scale of risk elements overcome, then that score, the chosen load-out, and a detailed replay of the mission are categorized and uploaded to a storage server for future reference.

The ChaosEngine AI system will be developed alongside the user interface and gameplay mechanics for *The Killers* and will be the driving force behind gathering truly useful combat data for the Department of Defense. Regardless of competence, no human is able to generate the breadth and depth of possibilities required to accurately create simulations of combat encounters, so the ChaosEngine will be trained with data of a wide variety of types in order to make decisions both before and during mission engagements in order to challenge the player and provide the DOD with extensive data. ChaosEngine will control everything in a mission encounter, ranging from combatant and civilian AI to weather conditions and 'random' occurrences. With the power of this engine, the DOD will be able to collect combat data relevant to everything from a best-case where the mission goes as planned to a worst-case where a sudden sand-storm picks up and an unexpected enemy patrol arrive just as the allies arrive to the encounter. This breadth of experience will also provide players with ample replay value in order to keep up interest in *The Killers*.

Mission results collected through gameplay, after being uploaded and categorized, will be made available to the DOD through a separate web app with authenticated login and a full suite of filtering and replay tools. This app will allow DOD officials to find relevant mission results for new missions they're planning, as well as input new mission formats, parameters, and map definitions in order to fulfill new strategy-generation needs they might have.

Team Requirements

Consultant, Military

The team will require a military consultant with combat experience as a vital source of information on tactics, equipment, and battlefield situations. Their experience will help to flesh out the initial database backing the ChaosEngine's training of situations that can arise before or during a mission.

Artist, Environment Modeler

The team will require an environment modeler to create the component pieces that are used to dynamically construct the mission environment based on the mission parameters. A quality modeler will be able to build pieces at various levels-of-detail that can be reused in a large variety of contexts so the game can run on multiple platforms and build any type of environment that the mission definition requires.

Artist, Character Modeler

The team will require character modeler to model, skin, rig, and animate the character models used for troops, enemies, civilians, and animals. Quality models and animations will keep the players immersed in the combat situation.

Artist, Prop Modeler

The team will require a prop modeler to model and animate weapons, vehicles, and environmental props for the missions locations. Quality models and animations will keep the players immersed in the combat situation.

Artist, VFX

The team will require a VFX artist to create projectile, explosion, and other particle effects for use in the mission environment.

Engineer, Build

The team will require a build engineer with CI/CD experience to setup the build and deployment pipelines for the game app, web app, and storage server. A well run dev-ops pipeline will enable faster iteration and more reliable build and test flow.

O'Connor, Jake

Engineer, Server

The team will require a server engineer capable of building the back-end services used to host the database for mission results, to authenticate user accounts for the web app, and many other tasks.

Engineer, Web

The team will require a web engineer capable of making a responsive web app for the DOD access point of *The Killers*. This engineer would ideally have experience working with large databases, including implementing extensive search and filter logic.

Engineer, Client

The team will require a client engineer capable of making our game app's front-end interfaces and menus, and making them both beautiful and responsive. Ideally our front-end client engineer will have experience creating apps and UI systems for different platforms in order to create portable menus that won't require as much work to deliver to all the target platforms.

Engineer, Gameplay

The team will require a gameplay engineer capable of implementing the in-game systems and rules required for the game app to function properly. This engineer should have experience with similar real-time gameplay systems and integrating with external services.

Engineer, AI

The team will require an experienced AI engineer capable of implementing the ChaosEngine learning AI. Ideally this engineer has experience with machine learning algorithms and implementation, specifically in the context of games.

Designer, Gameplay

The team will require a gameplay designer capable of expounding upon and codifying the basic gameplay rules posed by the project specification.

Designer, UI/UX

The team will require a UI/UX designer with experience in games and on projects targeting multiple disparate platforms. This designer will be responsible for the UI art and layouts for each of the target platforms.

O'Connor, Jake

Audio Engineer / Musician

The team will require an audio engineer to author the menu and gameplay SFX as well as the background music and ambiance for each scene. Audio holds player attention just as much as visuals do, so this is very important.

Tester, Internal

The team will require at least one full-time, internal tester to interface with designers, artists, and engineers to develop proper full-coverage test plans and validate external testing processes, in addition to actually doing the work of testing.

Tester, External

The team will require a team of external testers to perform predefined test plans, run smoke and integration tests, and validate builds based on accepted criteria.



References

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