Software Architecture Report

1. Date : 28.01.2024
2. Latest version : Commit SHA 139c654f3e17098c8dd0457a3f42d52f14b8233c

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commit 139c654f3e17098c8dd0457a3f42d52f14b8233c (github/feature/chest, devops/feature/chest)
Author: Moisii Lucian <lucianmoisii31@gmail.com>
Date:   Sun Jan 14 23:01:16 2024 +0200
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3. Project Purpose :

A game in which the player takes on the role of a monarch who must build and expand their kingdom. He needs to collect resources, develop a stable strategy and defend their kingdom against attacks from mysterious creatures that come out at night. Players can travel through diverse landscapes, improve technologies, and explore the secrets of the game world.
Fulfilled capabilities : To this date, the game's most important features and mechanics have been successfully implemented by the team, however the game economy needs to be improved in order to enhance the gaming experience and make the game a little more challenging. Also, we need to establish a final layout for the map structures so that the player can follow the desired game progression.

4. Project Guide :

- Running the Project :

Our project has been developed using Unity Engine (version 2022.3.10f1) and the team has created a GitHub repository for a convenient implementation structure. (link to the repository https://github.com/inginerie-software-2023-2024/proiect-inginerie-software-the-weeknd).

After cloning the project locally, we have attached a development guide that the team members follow, you can find it here :
https://dev.azure.com/lucianmoisii31/Proiect_IS_Unity/_wiki/wikis/Proiect-IS-Unity.wiki/2/Development-guide.

- Build & Deploy the project

A current deployed version exists (needed for additional testing) and we created it using the Unity build project feature. Everytime a new feature is implemented, we rebuild the project and a team member proceeds to test every aspect of the improved game

- Contribution Guide

Our main development branch is called 'dev', from which we checkout a new branch for every specific feature implemented. After committing and pushing, you will open a new pull request and assign 2 team members for code review. We use camel case for variable names and uppercase first letter for function names.

5. High level diagrams of the architecture

- User Jouney Map

Stages:
Discovery: Users find out about "Crown & Conquer" through gaming platforms or recommendations.
Exploration: Users explore the game's features, map, and gameplay mechanics.
Gameplay: They engage in building their kingdom, collecting resources, and facing challenges.
Challenges: Users experience difficulty during the Red Night with increased monster attacks.
Success: Overcoming the Red Night makes them feel accomplished and skilled.
Relaxation: Enjoy the White Night, a peaceful break from monster attacks.

Touchpoints:
Discovery: Gaming forums, online game stores, social media ads.
Exploration: Tutorial levels, in-game guides, and tooltips.
Gameplay: Building structures, managing resources, battling enemies.
Challenges: Increased enemy spawns, surviving attacks, upgrading defenses.
Success: Advancement in the game, reaching higher levels.
Relaxation: White Night event, experiencing a calm in-game environment.

Emotional Journey:
Excitement: Initial discovery and exploration of the game's potential.
Challenge: Facing difficult Red Nights, strategizing to survive.
Achievement: Successfully overcoming challenges, upgrading buildings.
Relief: Enjoying the peaceful White Night after surviving the chaos.

This journey map illustrates the emotional experience and key interactions users encounter while engaging with "Crown & Conquer" catering to different gaming preferences and providing a diverse gaming experience.

6. Deployment Plan

Our team decided to deploy Crown & Conquer on Steam, the number 1 game platform for PC, where the majority of gamers get their games from. This is one of the key aspects that will grow the game’s popularity and increase interest for our product.
For the process of deploying a better source for further development, we configured a Github CI pipeline for code linting, which will run a workflow when there is a push or a pull request made into the repository and it will tell the author where it’s not respecting the code standards of the project, so that he can correct it’s code.

7. Description of the QA process

For each feature implemented by a member, after the project rebuild in the Unity editor, a different team member will discuss in a private meeting with him in order to establish how the game should behave. Then, he will start the extensive testing process following the pattern explained by the developer of the feature. It is important for our team to test directly

on the build version of the project to make sure the user gets the same game experience as the one we test and try to improve continuously.