# Abstract

## Kingdom and Glory – developing a 2D crafting and strategy platformer.

The games market is being flooded with new games, most of them being very similar with little to no innovation. The aim of the project Kingdom and Glory is to combine different game mechanics and create something truly transformative. The foundation on which the project is being built is Kingdom Two Crowns. Kingdom Two Crowns is a 2D strategy and adventure platformer in pixel art style. Today many games are released which are based on the Kingdom franchise. However none of them added a crafting system or a different art style. The goal for Kingdom and Glory is to develop a 2D crafting and strategy platformer based on Kingdom Two Crowns with a different art style in comparison to Kingdom Two Crowns. The first step is to have a look at the source material the project is going to be built on. Afterwards one has to take a look at a myriad of different games and how they implemented and used their crafting system. The following games serve as a starting point: Minecraft, Terraria, World of Warcraft and Clonk Rage, while also giving special consideration to the Kingdom Two Crowns art style and the art style from games like Eastern Exorcist and Ori and the Will of the Wisps.

The first game under scrutiny is Kingdom Two Crowns. The goal in Kingdom Two Crowns is to secure your kingdom against the Greed. To achieve this goal the player needs to build their kingdom and to construct a kingdom one needs to build walls and an army. Now to fully secure the kingdom against the Greed, the player must command a counterattack.

Moving on to the next game. Minecraft is a 3D open world, survival and sandbox game. There is no specific predefined goal in Minecraft other than slaying the Ender Dragon. The player has the option of setting their own goals they want to accomplish, meaning someone may want to build a large house and someone else may want to build the largest railway.

Next on the list: Terraria. Terraria, like Minecraft, is a survival and sandbox game with the additional difference of being a 2D platformer. Terraria also gives the player the freedom to set their own goals. Nevertheless, in Terraria one can defeat different kinds of boss monsters on top of that.

The fourth game in this analysis is World of Warcraft. World of Warcraft presents a 3D massively multiplayer online role-playing game. In this game the player can create their own character, choosing from different classes and races. Afterwards, the player heads off into the world with the goal being set by different quests. Quests are mainly story elements the player can complete to level their character.

Finally, Clonk Rage is an action real-time strategy game and 2D platformer. Clonk Rage is made up of different levels. For example, one level could be to search for skulls and despite the predefined goal, the player here is also able to pick their own objectives to a certain extent.

Next comes the discussion about art styles. The art style in  Kingdom Two Crowns is called pixel art. Pixel art is more common in 2D games because most 2D games are developed by Indie Studios, which do not have the same budget as AAA studios most of the time and additionally the time investment is significantly lower compared to a more hand painted art style. However, Eastern Exorcist and Ori and the Will of the Wisps both do not use pixel art and both of these games incorporate a hand painted and stylised art style. This results in features rather unique to these two works that lets them stand out among other 2D games on the market .

As already mentioned, the final product is also supposed to include a crafting system. There are two ways to craft in Minecraft, the first one being crafting in the inventory. Here the player has a 2x2 field to craft smaller objects like sticks, torches, crafting tables etc. To craft bigger objects like a pickaxe, a door or a sword, the player needs to acquire the crafting table to then be able to produce these objects. On the crafting table there is a 3x3 field to create a layout of the materials in a specific pattern to build an object.

Crafting in Terraria can also be done in two separate ways. One of them being, crafting in the inventory as well. Here one is able to craft smaller objects like torches. To generate bigger objects a crafting table is needed and to forge weapons or armour the player needs an anvil.

Crafting in World of Warcraft is called a profession. Professions are jobs the player can learn where they can craft different items based on their chosen profession. To get these professions one must learn them from a trainer and to gain new recipes the player must craft items in their profession and level up their rank to afterwards learn new recipes from the trainer.

In Clonk Rage the player is able to craft items and buildings. To craft a building the player needs a construction kit and with this construction kit they can choose between different building blueprints . Some items need a specific type of building to craft: for example, to craft a flint stone the player first needs to build a chemical plant.

After looking at all the references for their crafting system or art style, Kingdom and Glory will adapt the core features of Kingdom Two Crowns. Despite the character customization system in World of Warcraft, Kingdom and Glory will not have its own. Also, the player will not be able to build as freely as in Minecraft or Clonk Rage. The crafting system for Kingdom and Glory should be clear and intuitive and it should be like the crafting system Terraria is using. Moreover, the project will be developed with the Unity Engine and the programming language C#.

The first step in development is the creation of the player character. Implementing the movement, dropping coins and picking them up are first on the list, after that the interaction with buildings and finally shooting arrows. Therefore, physical calculations for projectile motion need to be included. After the player the NPCs are next. The NPCs should have basic movement and should be able to hunt, build, attack or defend. Following that the crafting system needs to be considered. The question is how to access the crafting system, how the crafting logic should work and resource prices for different items. Lastly, an inventory system has to be developed, including the values for resources, weapons and gear.

After all the steps from character creation to inventory system were completed the NPCs still had a bug causing them to be stuck inside the wall while defending it. This results in the NPC not being hit by enemies. Nevertheless, the bug does not change the functionality of the defense. The desired art style was also achieved with a little adjustment, being that the planned art style inspired by Eastern Exorcist changed to Ori and the Will of the Wisps due to time-dependent problems.