Analysis and Design Decisions Document

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Citadel Siege for Menthol Bar

Challenge: adapt the game to the Menthol Bar environment.

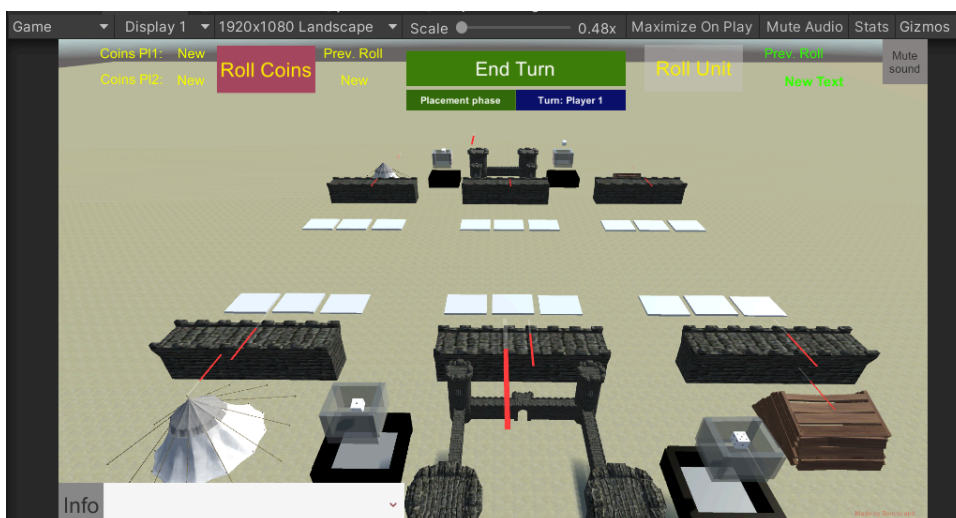**Method(s)**: Explore user requirements (Field), Brainstorm (Workshop)

Approach: I discussed with my Teammate - Borislav and our stakeholder -David, what we can do with the existing Citadel Siege prototype version of the game to make it suitable for the Bar environment and fit the stakeholder's needs. David provided us with footage and pictures of the venue.

Results:

We discovered that the bar had limited seating options on the stage. This made us realize that we had to do something that makes all the participants enjoy the event. This is why we decided to have the games streamed on a white panel. According to our client, the game for the bar should be more fast-paced, have less important decisions, easier rules, shorter game sessions. We realized that some modifications to the game had to be made to ensure people's engagement.

Reason: The bar is also a hotspot for people of all occupations and backgrounds, this in turn meant that we needed to make a game that is simple and easy to play, while limiting the play time!

Prev. Roll
5

Roll Coins

End Turn

Roll Unit

Mute
sound

Placement phase   Turn: Player 2

Info none
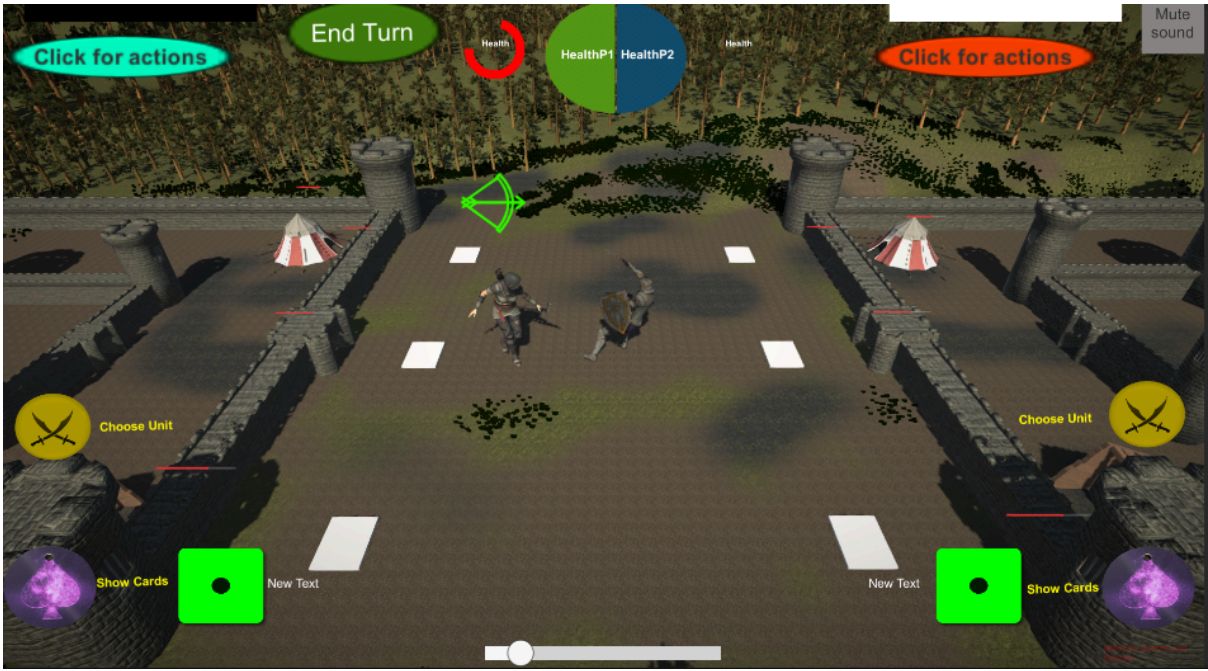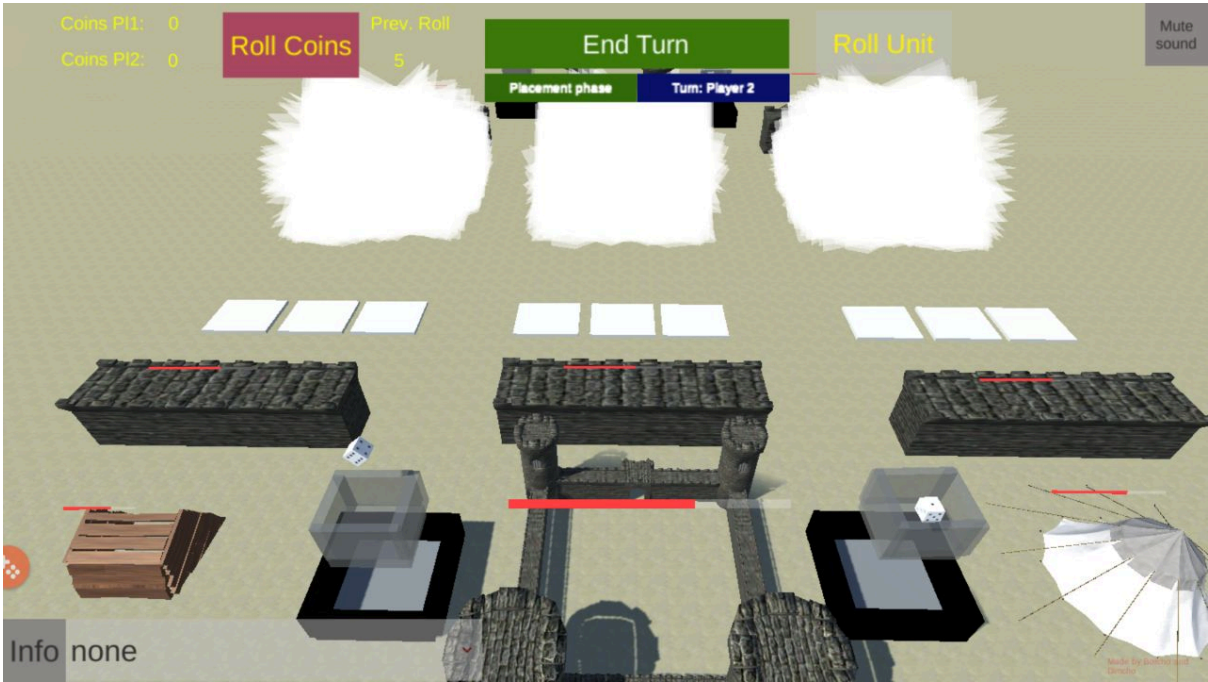
Which games did inspire us to create Citadel Siege gameplay?

Challenge: Choose our path for creating a game

Methods: Available product analysis (Library), Brainstorm (Workshop), Competitive analysis (Library)

Links:
https://www.youtube.com/watch?v=mNbS7He1Zu4 - Orlog
https://www.youtube.com/watch?v=T_Um_i8xMFw - TFT
https://play.google.com/store/apps/details?id=com.riotgames.league.teamfighttactics&hl=en_US&gl=US - TFT
https://play.google.com/store/apps/details?id=com.ironhidegames.android.kingdomrushfrontiers&hl=en_US&gl=US - Kingdom Rush.
https://dotesports.com/tft/news/how-many-player-teamfight-tactics - avegare players p/m

Since June 2019, *TFT* has emerged as the top contender in the genre, putting games like *Auto Chess* and *Dota Underlords* to shame.

In fact, *TFT* has been so successful that it increased *League's* global average peak concurrent players by an astonishing 30 percent in 2019. All in all, that added up to more than 33 million players each month, with a collective 1.725 billion hours.

Approach: Firstly we sat down and discussed with my teammate, what game we recently encountered that was fun and original. After which we wanted to find out what are the popular games in the app store. With high playability, average returns per player etc. After which we looked into what was missing on the market and how we can make something original.

Results: We concluded that easy to play strategy games such as Clash of Clans and Beat em up games like Brawl Stars all have a high return rate and player engageability. Then we were highly impressed with games such as Team Fight Tactics and Orlog(assassin's creed valhalla) , which incorporated multiple aspects in strategy games that we adored. All tower defense games were very popular in the community. (Kingdom Rush). Which led us to create a grand mashup of all of these great games into 1 with a special twist of adding Champions that are the main focus of our game while simultaneously keeping all the main parts of the previously mentioned games

3V3 AND BATTLE ROYALE

Time to BRAWL! Team up with your friends and get ready for epic multiplayer MAYHEM! Brawl Stars is the newest game from the makers of CLASH of Clans and Clash Royale. Jump into your favorite game mode and play quick matches with your friends. Shoot 'em up, blow 'em up, punch 'em out and win the BRAWL.

Reason: We wanted to stay original and create something no one has played before, which is why we incorporated multiple genres and mechanics into our game.

Thor's Strike

Deal damage to the opponent after the Resolution phase.

Priority: 6

4 ⌘	Deal 2 damage
8 ⌘	Deal 5 damage
12 ⌘	Deal 8 damage

Ⓧ Use   Ⓞ Cancel

Select Ⓧ an offering value, or skip ▢

Ⓧ Select   ▢ Skip   △ Help
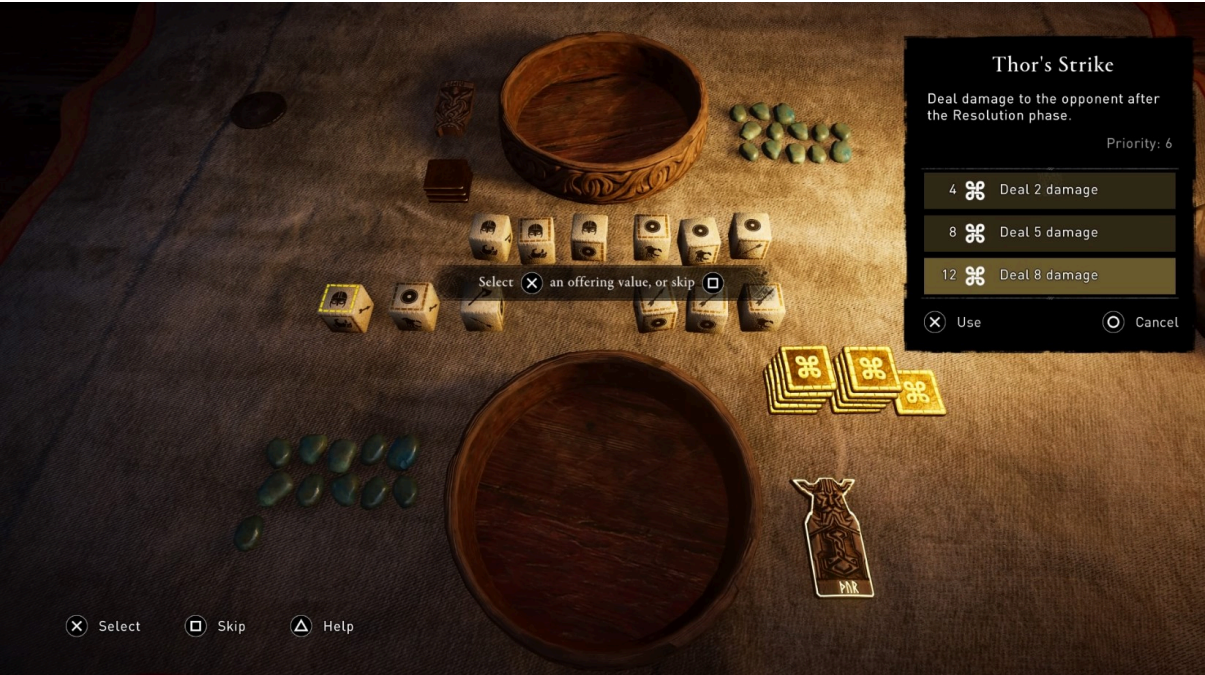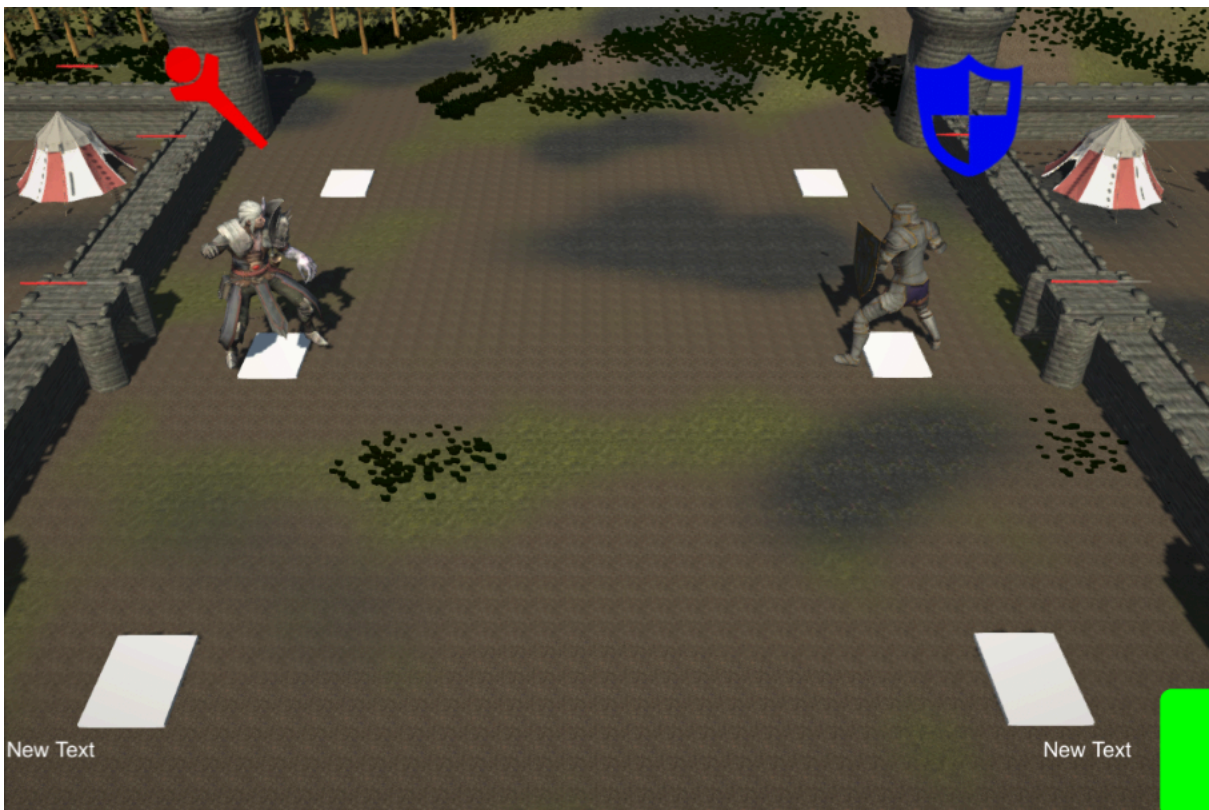
What we took:
Tower Defence
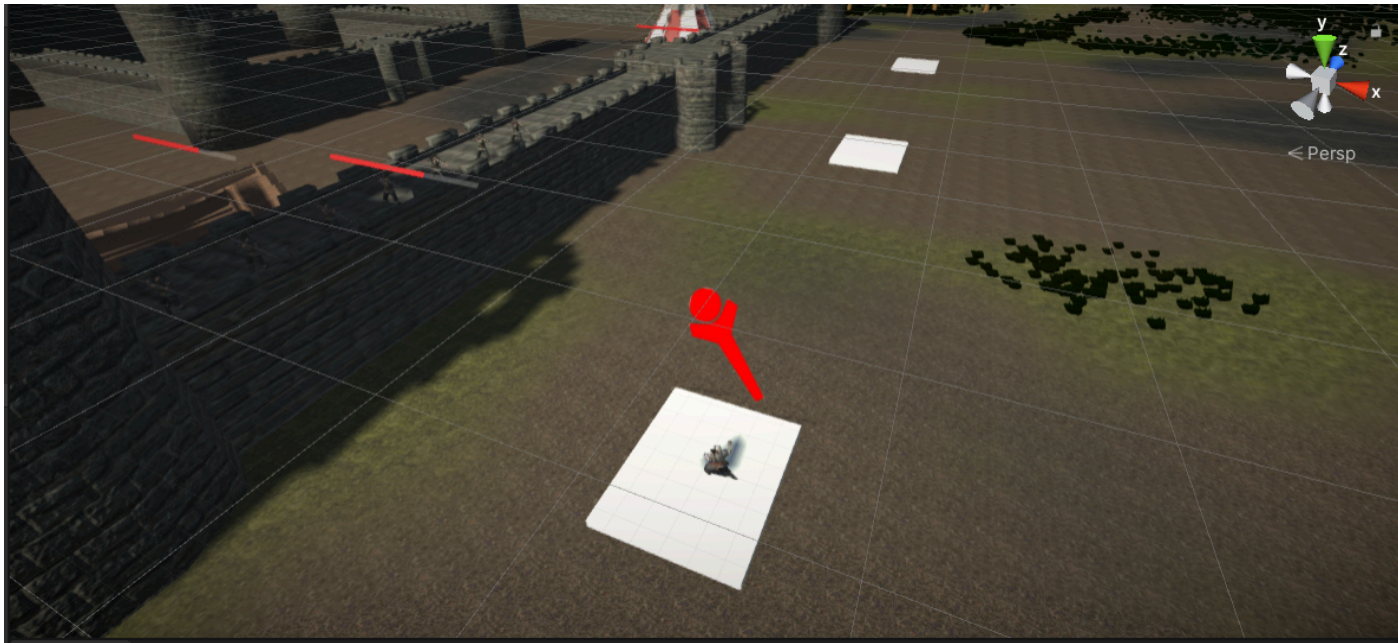
TFT:

```
71   public void FindNewTarget()
72   {
73       List<Property> targets = new List<Property>();
74       List<Property> potentialTargets = GameObject.FindObjectsOfType<Property>().ToList();
75       foreach (Property p in potentialTargets)
76       {
77           if (p.owner != genericFight.owner && p.GetComponent<Health>()?.currentHealth > 0 &&
78               p != this.GetComponent<Health>() && p.lineNumber == genericFight.lineNumber && p.isTargetable)
79               targets.Add(p);
80       }
81       Debug.Log(targets.Count);
82       float minDist = Mathf.Infinity;
83       foreach (Property pTarget in targets)
84       {
85           float dist = Vector3.Distance(transform.position, pTarget.transform.position);
86
87           if (dist < minDist && pTarget != this.gameObject)
88           {
89               minDist = dist;
90               genericFight.target = pTarget.GetComponent<Property>();
91           }
92       }
93   }
```

Orlog
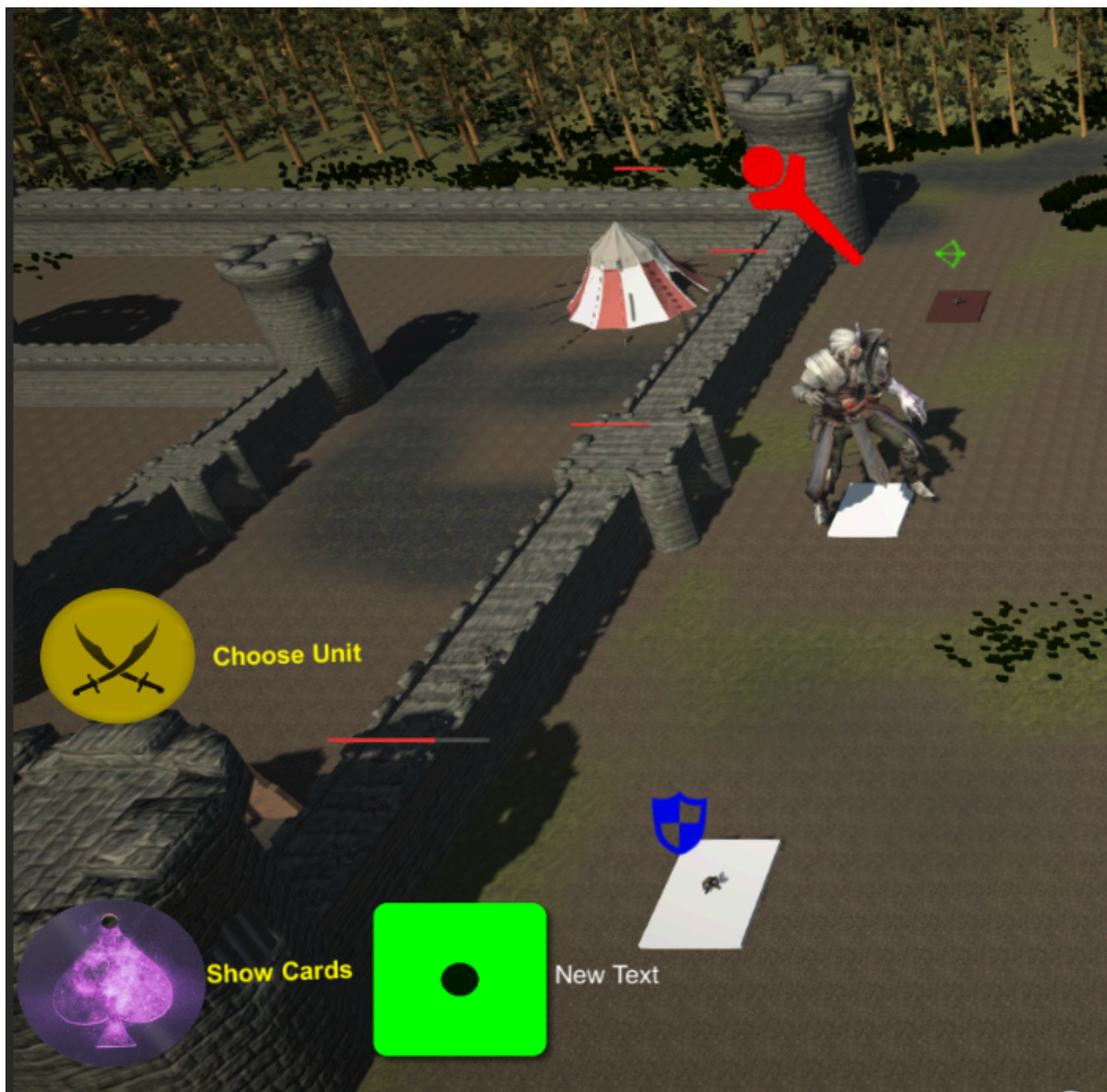
Why is our game played on one device and not multiplayer?

Challenge: Find the best method of how our game can be played for best user experience

Method(s): Business case exploration (Workshop), SWOT analysis (Library), Requirements prioritization (Workshop)

Approach: discuss with our client on whether the game should be played on one device or it should be played on different devices using the multiplayer system. We had to [research](#) the difficulties in maintaining such a system.

Results: There is a possibility of making a multiplayer game, however, hosting our own server and making Menthol Bar buy more tablets to support this system will result in additional costs. After discussion with our client and analyzing our time frames together with our skillset and client's budget, we came to the conclusion that it is better to have the Citadel Siege played on one device.

Reasons:
First reason is that the game is made exclusively for Menthol Bar and is not meant to be published on any app stores. If the game is played on one device only, it is not going to be it is not going to be well taken by the mobile game community.

Second reason is latency issues with the local internet can provoke many annoying situations with players being disconnected from the game.//in result

Last but not the least is our lack of competence when it comes to making multiplayer games. Furthermore, making a multiplayer system will take a solid portion of time leaving us less time to work on the actual game.
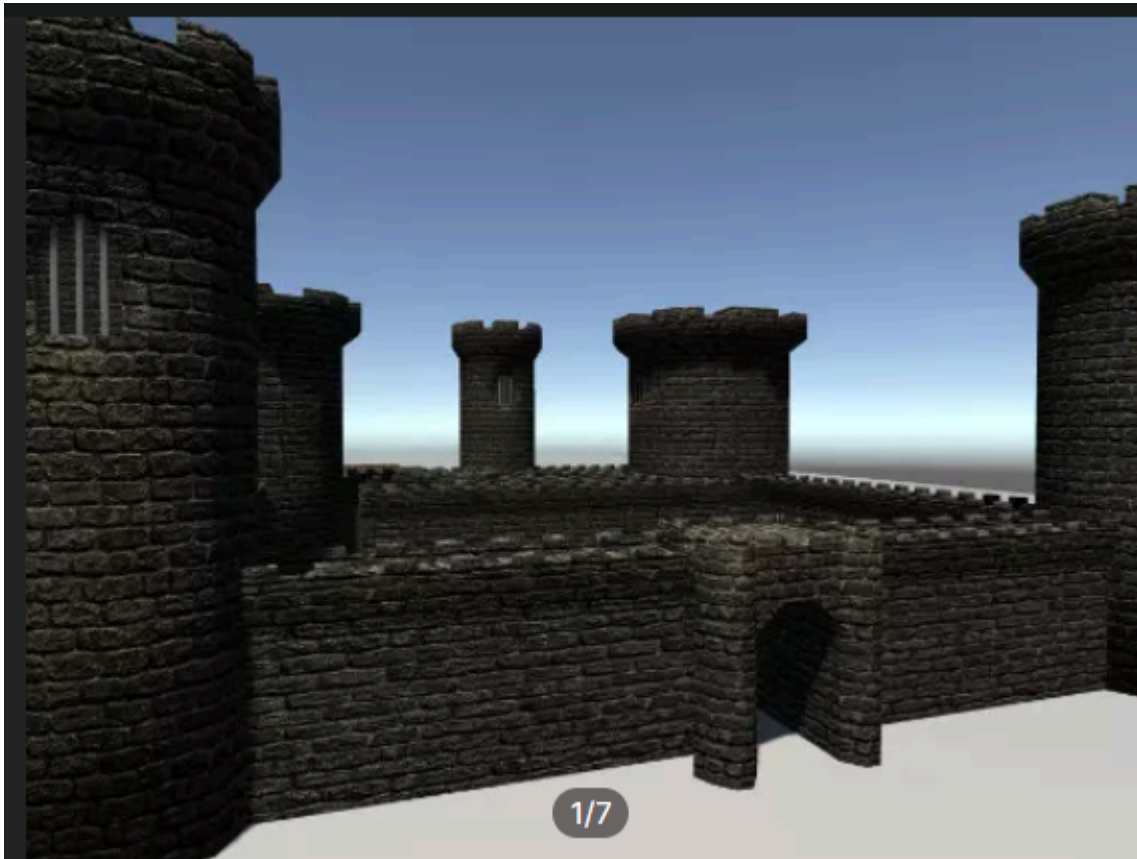
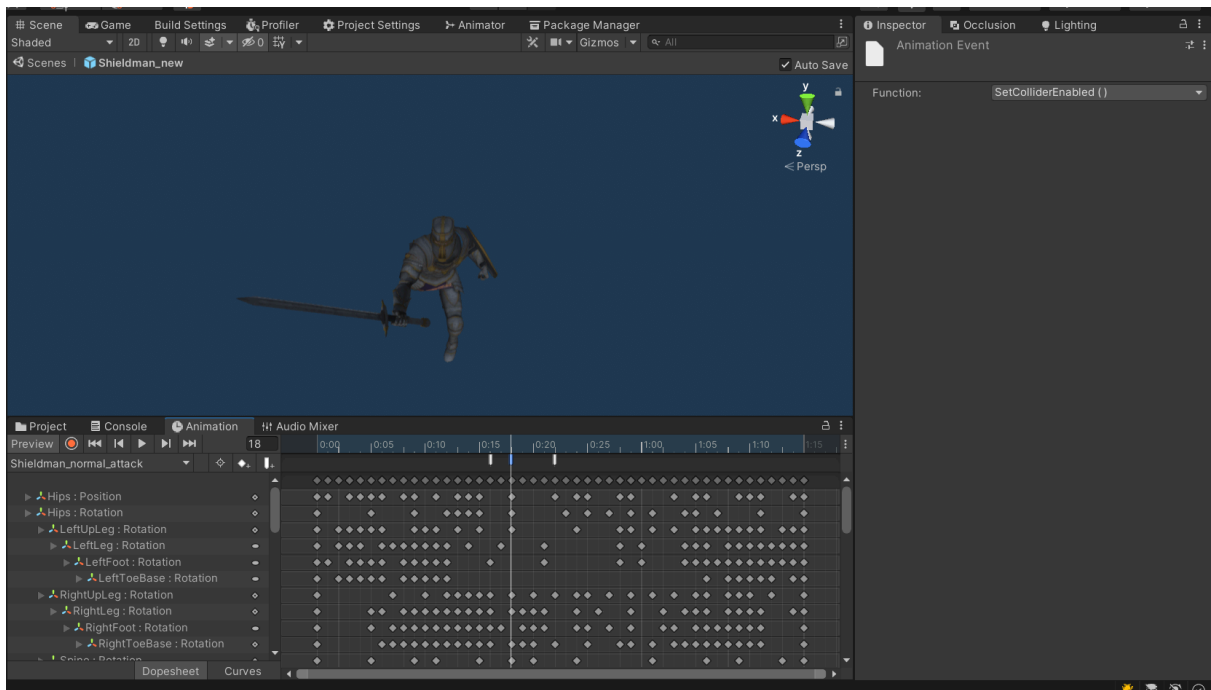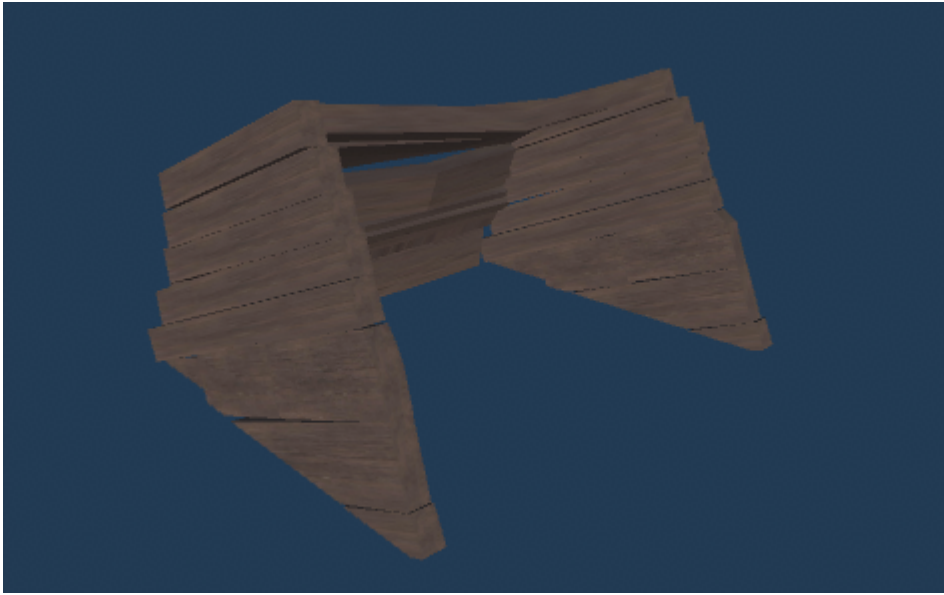# How did we choose assets for the game?

[Character modeling tutorial](#)

```csharp
private void OnCollisionEnter(Collision other) {
    Property opponent = other.gameObject.GetComponentInParent<Property>();
    if(opponent != null)
    DealDamage(opponent);
}
0 references
private void OnTriggerEnter(Collider other) {
    Property opponent = other.gameObject.GetComponentInParent<Property>();
    if(opponent != null)
    DealDamage(opponent);
}
2 references
public void DealDamage(Property opponent)
{
    damageToDeal = warrior.damageToDeal;        You, 2 days ago • demo build ready
    Debug.Log(damageToDeal);
    if(opponent is WarriorData)
    ((WarriorData)opponent).target = warrior.gameObject.GetComponent<Property>();
    Health health = opponent.gameObject.GetComponent<Health>();
    if(health){
        if(opponent is WarriorData)
        {
            if(((WarriorData)opponent).stats.WarriorType == warrior.stats.AdvantageAgainst)
            damageToDeal *= 1.25f;
        }
        if(health is StructureHealth && warrior.lineNumber != 1){
            warrior.health.ModifyHealth(damageToDeal);
        }
        else if(health is StructureHealth && warrior.lineNumber == 1){
            damageToDeal /= 2;
        }
        health.ModifyHealth(damageToDeal);

        Debug.Log(damageToDeal);
    }
}
```

Challenge: Find appropriate assets for our game

Method(s): Literature study, Available product analysis (Library)

Approach: I have searched for the game assets on the Internet. I searched in unity asset store, mixamo, kenney, cgtrader and looked for what fits our initial design view and is free.

Results: unity and kenney appeared to not have the kind of characters we wanted (in case of Unity - not for free), however I found a castle pack which fits our design view unlike an other pack from kenney which also looks descent but is too cartoonish and does not allow us to build a three lined structure of the battlefield. For barracks, we have used a tent asset. The most appropriate character models and animations we have found on mixamo website. This terrain asset I got from the asset store and I found it to be the most synergized with other assets. We created our own mine asset based on the mine in Clash of Clans

Reason: We find that having a realistic environment as well as having good looking and well animated characters are increasing the immersiveness of the game. As we did not find a

good looking mine asset for free, I decided to create one in Blender based on the mine in Clash of Clans game. We did not take low poly wizard models into consideration as their style did not fit our vision of how the game should look like, plus they had no animations included, so we would have to look for them, whereas mixamo assets fit our game style quite well and they already have nice animations that we need to have for all kinds of things warriors can do.

Asset links:
https://assetstore.unity.com/packages/3d/vegetation/trees/dream-forest-tree-105297
https://assetstore.unity.com/packages/3d/environments/fantasy/castle-supply-lite-23699
https://assetstore.unity.com/packages/3d/environments/historic/medieval-tent-big-19023

https://www.kenney.nl/assets/castle-kit
https://www.mixamo.com/#/?page=1&query=knight
https://www.mixamo.com/#/?page=1&query=archer
https://www.mixamo.com/#/?page=1&query=wizard
Not in our game:
https://www.cgtrader.com/free-3d-models/character/fantasy/mage-model
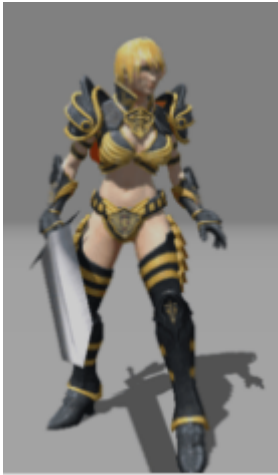https://www.cgtrader.com/free-3d-models/character/fantasy/lowpoly-hand-painted-wizard

Why do we have 3 classes, not more or less?

Challenge: Balance our game
Method(s): Literature study (Library)

Approach: We were hoping to find a clean and fair way for our users to play Citadel Siege. We looked into various methods of balancing our game.In our quest to determine the best possible and easy way to avoid balancing issues. Most of which was located on Youtube. Links: https://www.youtube.com/watch?v=uo9qIDbJvT8
https://www.gamedeveloper.com/design/design-101-balancing-games

Results: In the shared link we found plenty of useful information on how we can minimize the effects of improper balancing. We especially took notice of Tip number 7, which stated to start balancing early. We took that very seriously and we had to focus on implementing a good concept from early on that would allow us to avoid all the heartache of testing various scenarios in order to improve our balancing. We concluded that the best well tested and equal for all player game mechanic is the Rock - scissor - paper principle.

Reason: The Rock - scissor - paper principle provided us with an easy well documented and widely used mechanic that solved our worries when it came to balancing our game.
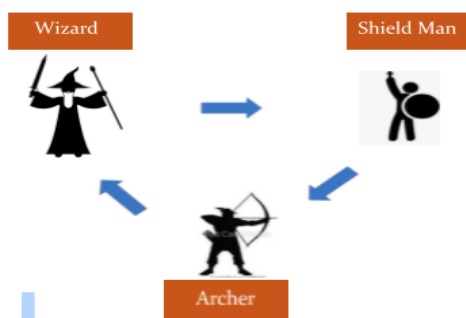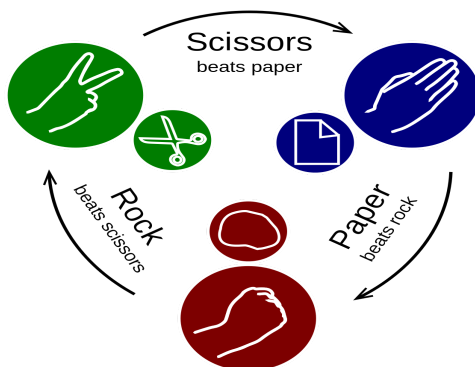
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Why was our UI changed, how did we conclude on this new UI, what method did we use to find and validate them

Challenge: create a new, more informative, user friendly and better looking UI

Method(s): Expert interview (Library), Usability testing (lab)

Approach: we had a talk to one lead front-end developer about how we can improve the UI in our game. He also provided us with a draft of how the game screen should look in our case. We used his remarks to build a new UI.

Results: the designer's main points to consider were that it is way easier to click on the button when it is located at the left and/or right side of the screen. In that way the user's fingers do not have to travel far away to the top middle part of the screen to press a button. He also pointed out that it is preferable to have round buttons over square buttons. Later on, we used his draft to create our new UI.

Reason: we performed a user test before and all testers without any exception pointed out that the UI is far from perfect, it looks ugly and is not intuitive.
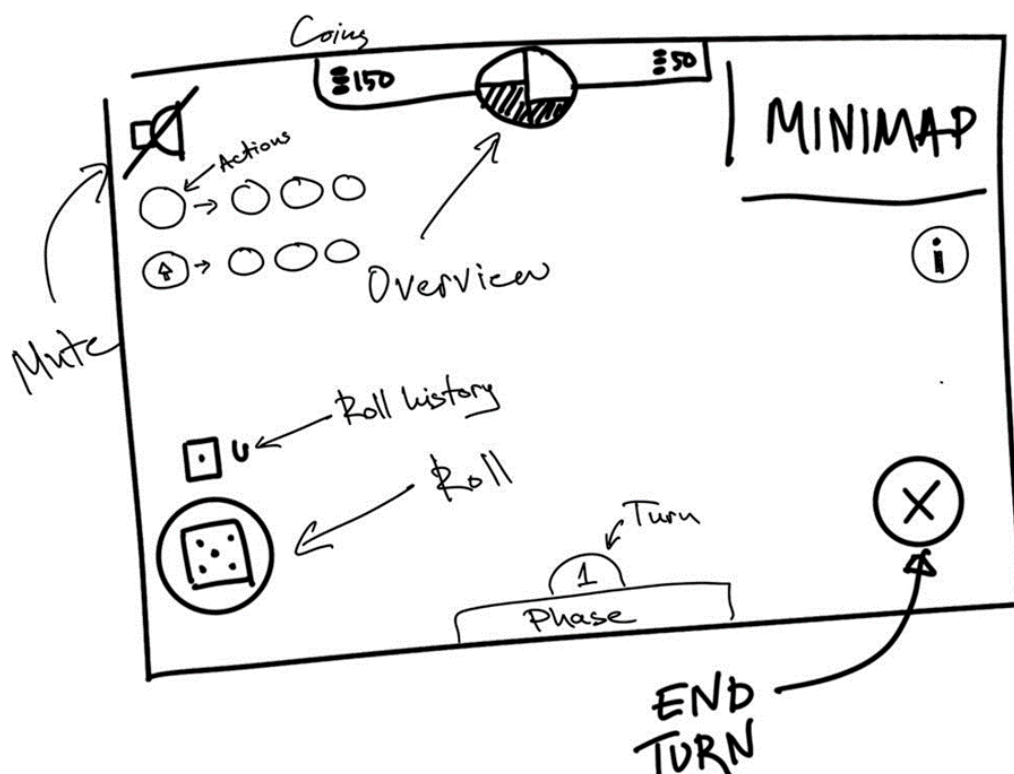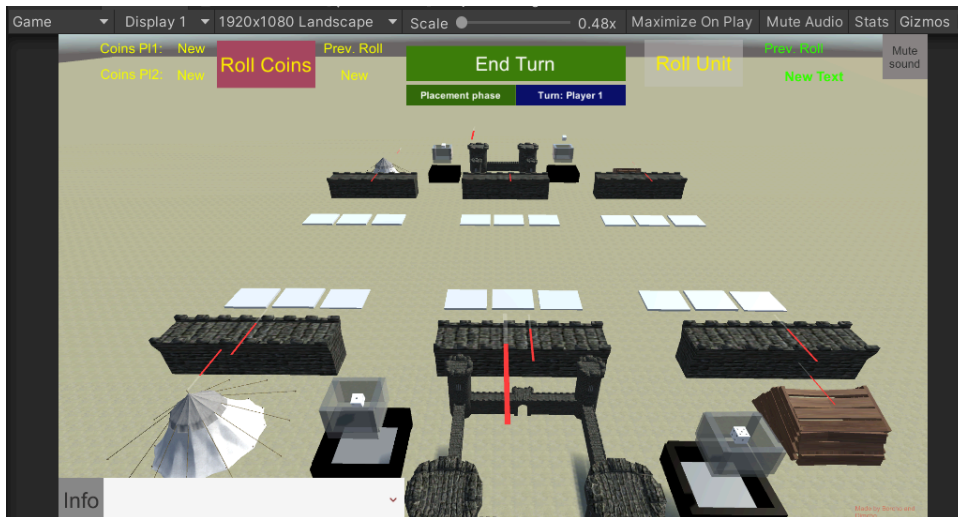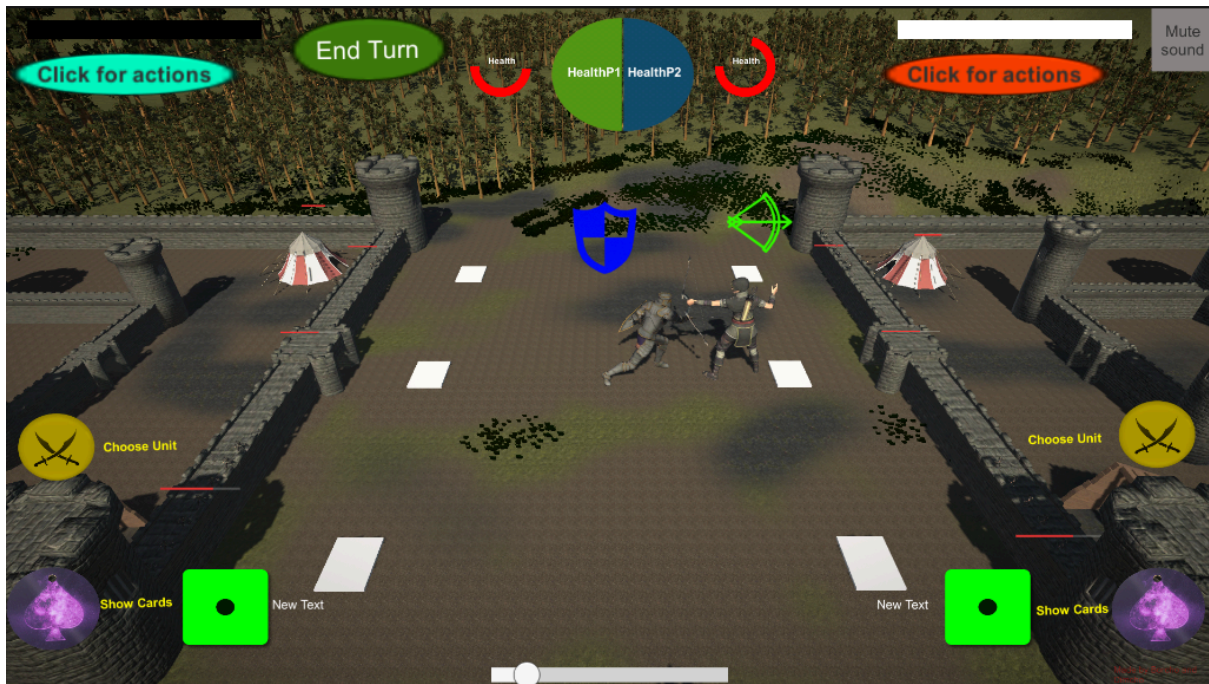
How did we design our hero power cards, How are they relevant to the game

https://m.youtube.com/watch?v=qX8kabgz3wo

Challenge: Make our warriors enhanceable
Method: Competitive analysis (Library)

Approach: We skewered the market for different ways to buff our champions. Exploring games such as World of Warcraft, Genshin Impact, Starcraft, Pokemon, Final Fantasy and many more. To find an original way to modify our warriors.

Results: Most of the games we viewed had similar ways to upgrading and level up-ing a character. Either with equipable weapons and armor. (WOW), With artifacts (Genshin Impact) or tokens that are collected throughout your gameplay. With a button that increases the values of your warrior's stats. (Pokemon)

Reason: Our project needed something original and we found out that no one is using cards as a way to modify their character. The closest resemblance was that of the game Yu-Gi-Oh and Magic, where you have equipable cards that stay active as long as they are on the field. So we took that in consideration and used it to our advantage.

World of warcraft

Malodorous Gristle-Sown Spaulders
Item Level 158
Binds when picked up
Shoulder   Leather
49 Armor
+32 [Agility or Intellect]
+53 Stamina
+44 Versatility (1.10% @ L60)
+26 Mastery (0.74% @ L60)
Durability 100 / 100
Equip: Discarded flesh and gristle adorn the
spaulders.
Requires Level 60
Sell Price: 46 89 31
Dropped by: Doctor Ickus
Drop Chance: 19.91%

Timewalking TBC
Timewalking WotLK
Timewalking Cata
Timewalking MoP
Timewalking WoD
Item Versions: Normal (3)
Showing tooltip for Choose a spec
Players can win this item when selecting the following class specializations:

Screenshots
None yet – Submit one!

Genshin Impact

Pokemon

Yu-GI-Oh (The one closest to our goal)
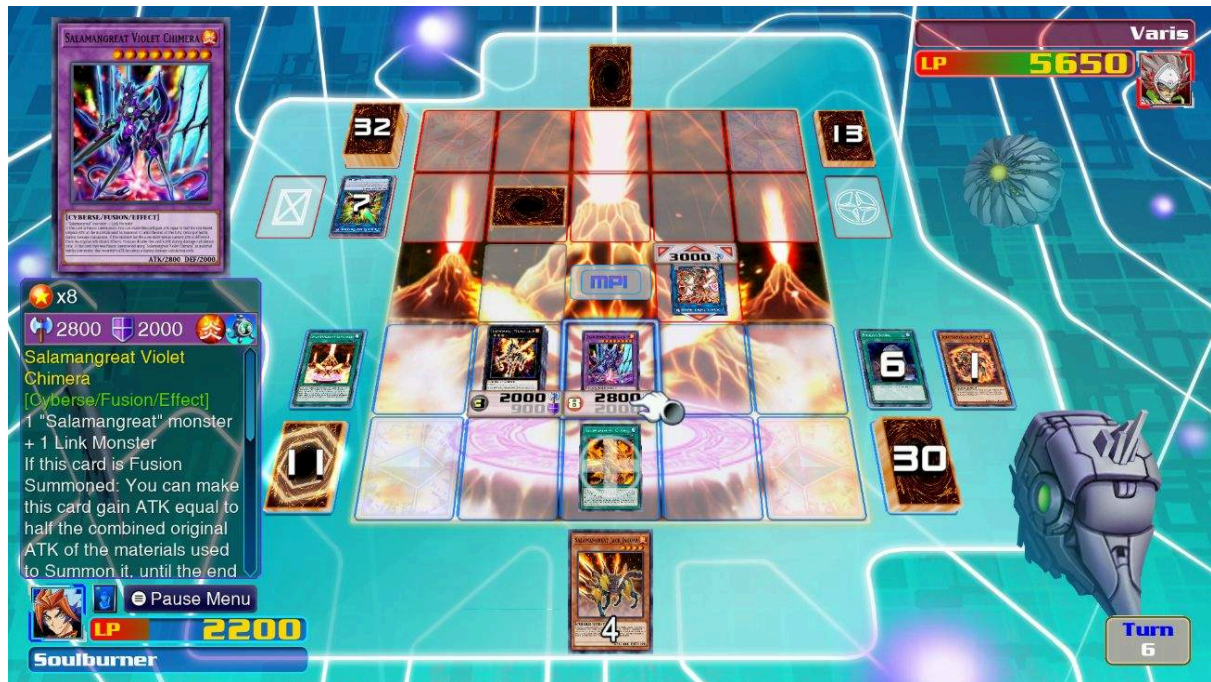
System test(Lab) Method

Choose Unit

Lucky Draw

-25 (Enemy)
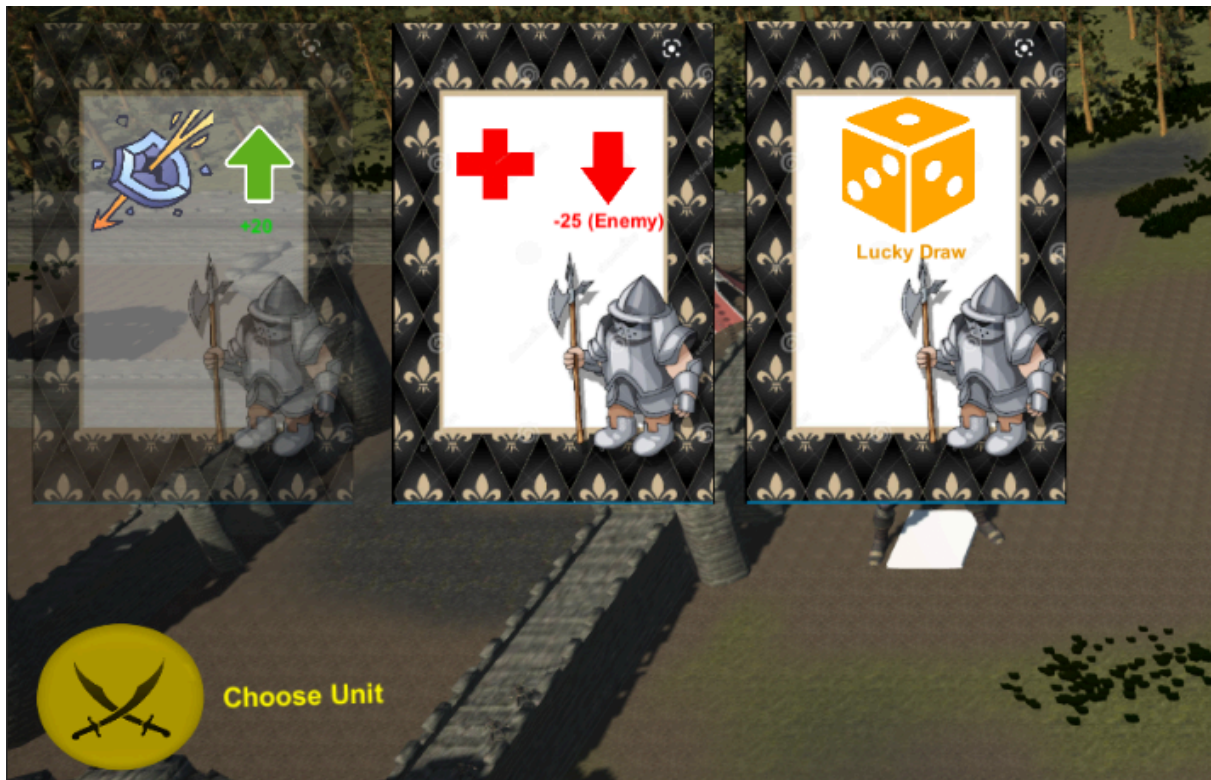
Inspector	Occlusion	Lighting

Shieldman 1 (Warrior Stats)

Open

Script	WarriorStats
Is Defender	☐
Health	350
Power	-35
Movement Speed	200
Range	18.5
Warrior Name	Shieldman
Warrior Type	SHIELDMAN
Advantage Against	ARCHER

Inspector

Archer 1 (Warrior Stats)

Open

Script	WarriorStats
Is Defender	☐
Health	150
Power	-30
Movement Speed	200
Range	40
Warrior Name	Archer
Warrior Type	ARCHER ▼
Advantage Against	WIZARD ▼

```
25    public void IncreseDMG(int index)
26    {
27        grandWarriors.Find(a => a.owner == index).damageToDeal -= 20;
28        this.GetComponent<Button>().interactable = false;
29        Debug.Log(grandWarriors.Find(a => a.owner == index).damageToDeal);
30    }
31    public void DecreaseHealth(int index)
32    {
33        grandWarriors.Find(a => a.owner == index).health.currentHealth -= 25;
34        this.GetComponent<Button>().interactable = false;
35        Debug.Log(grandWarriors.Find(a => a.owner == index).health.currentHealth);
36    }
37    public void LuckyRoll(int index)
38    {
39        int a = rng.Next(0, 2);
40        if(a == 1)
41        {
42            grandWarriors.Find(a => a.owner == index).damageToDeal -= 20;
43            grandWarriors.Find(a => a.owner != index).health.currentHealth -= 20;
44        }
45        else if(a == 2)
46        {
47            grandWarriors.Find(a => a.owner == index).damageToDeal += 20;
48            grandWarriors.Find(a => a.owner == index).health.currentHealth -= 30;
49        }
50        this.GetComponent<Button>().interactable = false;
51        Debug.Log(grandWarriors.Find(a => a.owner == index).damageToDeal);
52        Debug.Log(grandWarriors.Find(a => a.owner == index).health.currentHealth);
53    }
```
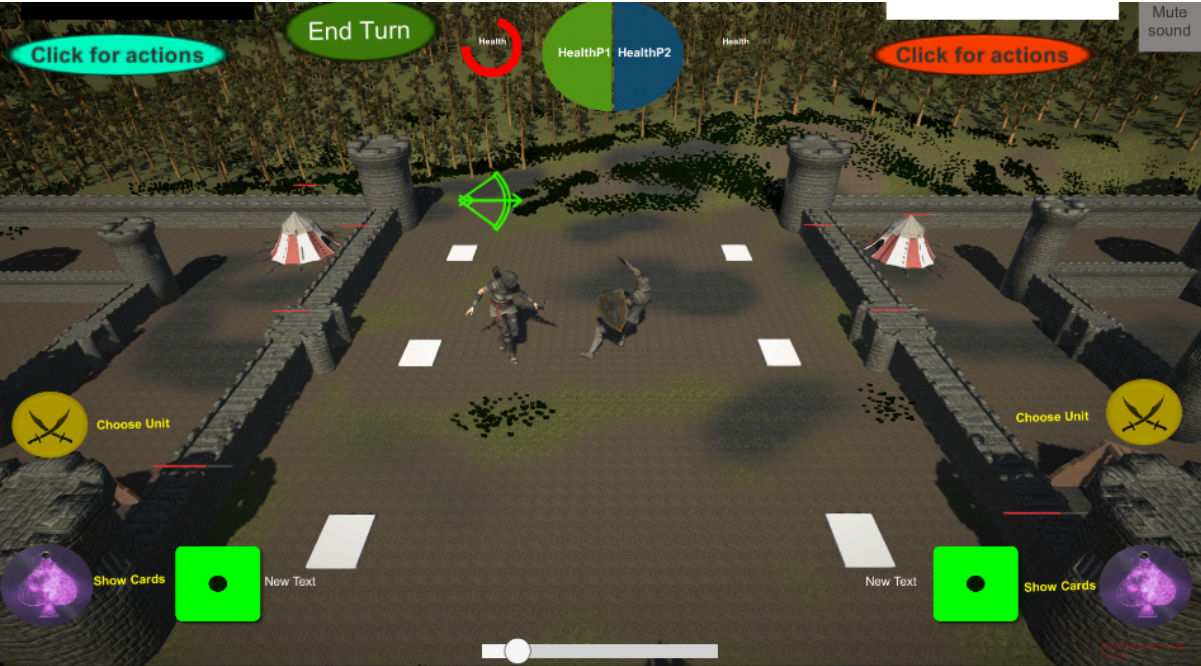
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How did our User testing go, what was our initial goal? What questions did we want answered? How many people did we interview, what people did we approach?

Challenge: Receive valuable feedback from regular players/non game devs or experts in the field

Method(s): Product Review(Showroom) NB! with non experts, Observation(Field)

Approach: We wanted to understand which aspects of our game were working for our users and how we can improve on them. Major questions we needed to be answered were:
- Is our game easy to understand?
- Is our game intuitive and easy to play?
- What was not understandable in our game?
- What do you think we should improve?

So we gathered a group of 6 people that were from different fields of occupation and different age groups. The test was performed with friends and family that fit this description.

Results: We received quite a lot of positive feedback. Our users enjoyed the flow of the game and were genuinely having fun. That being said, they did point out various things that needed our attention. Such as not understanding how one of the cards works and having issues with the Visual Design of our UI. To quote: "It does not match the theme of your game". This gave us good pointers on what we needed to improve and also what people see when in first contact with our game. Specifics of our result could be found on my dev log.

Reason: This way of testing was a good opportunity to introduce our game to multiple not affiliated people with our work as game developers. We wanted to check if this game could be enjoyed and understood by the majority of potential clients to Bar Menthol's event

Why did we decide to have a realistic, relatively high-poly design for the game rather than cartoonish/low-poly one?

Challenge: define a visual style for our game

Method(s): A/B testing (Lab)

Approach: Me and Borislav discussed whether we would like to have a low detailed and cartoonish look for our gameworld or a more detailed and realistic one. We also consulted with our client and looked into various different types of visual designs. (Where?)

Results: We came into conclusion that more realistic design of characters, structure and nature fits better for our case.

Reason:
In case we can optimally recreate the medieval setting, we can get people more immersed in our game. Even though we would like to see magic abilities in the game, most of the actions that are happening are actions that can happen in a real world.

Examples of two different styles:
Low poly:
https://assetstore.unity.com/packages/3d/environments/fantasy/polygon-knights-low-poly-3d-art-by-synty-83694
Realistic:
https://assetstore.unity.com/packages/3d/environments/fantasy/detailed-medieval-castle-178027

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Challenge:

Method(s):

Approach:

Results:

Reason: