# Design Document for Catapult Fragment 2

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## Intro

Defeat the enemy king by skillfully launching your puck across the battlefield!

## Gameplay description

This game uses “golf” mechanics to implement a crossbows and catapults/angry birds style castle destruction objective.

## Artistic style outline

Initial development will be with primitive meshes. If there is time the primitives may be replaced with free meshes and textured with free textures.

## Components

Gameplay Screen

## Asset & Object breakdown

| Name | Type | Description/Picture |
| --- | --- | --- |
| Puck | GameObject/Cylinder Mesh | Player controlled puck |
| Brick | GameObject/Cube Mesh | Bricks making up wall protecting enemy king |
| Pedestal | GameObject/Cube Mesh | Pedestal is stack of 2 bricks |
| King | GameObject/Capsule Mesh | Player’s objective is to use the puck to knock the king off the pedestal, physics object with box collider so it can stand upright |
| Wall | Script generated object collection | Collection of bricks stacked in front of the king’s pedestal |
| Battlefield | GameObject/Cube Mesh | The “Green” of the game, currently 3 battlefield meshes put together making a zigzag green |
| Aim Camera | GameObject/Camera | Camera behind puck to during aim mode |
| Shot Follow Camera | GameObject/Camera | Camera following puck during a shot |
| Aim Arrow | GameObject/LineRenderer Component | Shows direction of fire in aim mode |
| Power display | GUI Box | Displays shot “power”, holding down mouse increases power |
| Enemy King Indicator | GUI graphic | Graphical indication of where enemy king is located, shows up during aim mode |
| Settings Icon | GUI graphic | Clicking brings up settings window, game-icons.net |
| Settings Window | GUI control | Pauses game and gives player option to quit |
| Reset Icon | GUI Graphic | Clicking moves the puck back to start in case you get stuck, game-icons.net |
| Battlefield Texture | Texture | From Unity Terrain Assets package |
| Brick Texture | Texture | Opengameart.org |
| Damage Brick Texture | Texture | Made by compositing damage and brick texture in gimp |

## Suggested Game Flow Diagram

Game Screen (title page display, start button)🡪(start button pressed) Game Play 🡪 (enemy king knocked down or quit button pressed) Game Over Display

## Suggested Project Timeline

| Milestone | Date | Description | Done |
| --- | --- | --- | --- |
| Catapult Gamefragment 1 successfully implemented | 9/08/13 |  |  |
| repository | 9/10/13 |  |  |
| Create Unity Project | 9/10/13 |  |  |
| Siege Engines with distinguishing shot characteristics | 9/10/13 | Ballista ”putter”: low power, low angle, no rotation  Catapult “wedge”: mid power, high angle, rotation  Trebuchet “driver”: high power, fixed mid angle, rotation, elevated firing position |  |
| GUI for selecting engine | 9/10/13 |  |  |
| GUI for selecting shot angle | 9/11/13 | Available angles change based on selected engine |  |
| Visual indicator of shot angle on aim page |  | Implementing in fragment 3 |  |
| Puck shot applying engine and angle choices | 9/11/13 |  |  |
| Engine description on aim page | 9/11/13 |  |  |
| Dust Effect for puck hitting ground | 9/10/13 |  |  |
| Chip/shard effect for puck hitting bricks, bricks hitting each other and bricks hitting ground |  | Using puck dust as placeholder |  |
| Breakable bricks | 9/11/13 | Bricks take “damage” at a fixed velocity impact, texture changes to damaged, bricks destroyed after 2nd hit |  |
| Implement puck reset in enemy “end zone” | 9/11/13 | A moat makes more sense |  |
| Score indicators | 9/11/13 | Time for now |  |
| Game score wrap up | 9/11/13 | Final time on gameover page |  |
| High score on title page | 9/11/13 | Best time on start page |  |

## Additional Ideas and Possibilities

* Online high scoring
* Multi-puck teams
* Multiple objectives (enemy castle has magic shield that is brought down by destroying the magic crystal mine, or enemy bricks are made of steel and can’t be hurt/moved unless the puck goes to the blacksmith first to get “armor”)
* Castle builder
* Rpg elements (rogue puck can be closer to the enemy castle, wizard puck has low mass but does aoe force explosion when he hits)