Documentatie

Mixed reality project

De Kinderspelen VR



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# Roles

**Niels Aarts**

IT –Developer (*creating animations, scripting, endgame, searching for usable assets, making environments*)

**Kevin Lahey**

IT – Developer (*animations, scripting, intro, assets, main scenes*)

**Noah Crols**

IT – Developer (enviroment, assets, scripting)

**Fiobos Gkoubras**

  Graphic Designer – Visual Director (*responsible for visual immersivness of the VR experience*)

**Arno Strauven**

Sound Design (*responsible for auditory immersivness of the VR experience*)

# Summary

## Concept and approach

In this immersive VR experience, players dive into an inviting world where ‘De Kinderspelen’, a masterpiece of the famous Dutch painter Pieter Bruegel de Oude (ca. 1525-1530 tot 1569), comes alive. The goal of this project is to let the user experience the leisure and play of children in the 16th century Netherlands. We aim to do this by guiding the player through different environments based on the painting, where different games can be enjoyed through hands-on experience or by watching the many children of this world play through different mini-games.

Made for Toy Museum in Mechelen:

* Replacement for painting recreation room
* Learning aspect
* Most schools teach about the painting before coming to museum
  + Talk about difference now and then
  + Diverse ways of playing
    - Toys
    - Outside
    - Acting out like a wedding
    - Some would be bullying today
* Restrictions:
  + Time limit
  + Groups of kids wanting to play and having to wait
  + Use of a moderator during use

The game revolves around a painting split into four distinct sections, each serving as a portal into a mesmerizing realm.

In the first part, the painting unveils a serene landscape, inviting players to solve puzzles amidst rolling hills and tranquil streams. Each interaction triggers animated responses, revealing hidden paths and unlocking the essence of the scenery.

Moving into the second segment, the painting transforms into an urban scene bustling with life. Here, players engage in challenges that mimic the vibrant cityscape, from rhythm-based tasks to interactive street art, all while experiencing dynamic animations that react to their actions.

The third part transports players into a fantastical realm, where mythical creatures and magical elements intertwine. Through intuitive gameplay, they unravel the secrets of this enchanted world, engaging with spellbinding animations and uncovering surprises hidden within the canvas.

Finally, the fourth section presents a surreal dreamscape, blurring the lines between reality and imagination. Players navigate mind-bending puzzles and illusions, exploring interactive elements that warp perception and challenge their senses, all within the confines of the painting's boundaries.

Throughout the game, the seamless integration of animations and interactive elements within each painting segment creates an enchanting and immersive experience, allowing players to step beyond the frame and become integral parts of the artwork itself.

# story structure

See also slides on digitap: story structuring

## Afbeelding met verven, kunst, vloer, Rechthoek Automatisch gegenereerde beschrijvingIntro

**Assets:**

* Fog
* Painting
* FadeCanvas

**Scripts:**

* Intro manager
  + Move the painting
  + Control the FadeCanvas
  + Teleport to next scene
* PaintingScript
  + Make the painting come to life with different delays

## Scene 1Afbeelding met verven, kunst, Beeldende kunst, tekening Automatisch gegenereerde beschrijving

**Games:**

* Playing with a doll
* Bikkelen
* Playing with a tame bird
* Poking a turd
  + With sound
* Hobby Horse

**Animations:**

* Playing with a doll
* Blowing bubbles
* Handstand
* Waving
* Bikkelen
* Holdings hands

**Assets:**

* House
* Fence
* Bird
  + Sound
  + Animations
* Child seat

**Scripts:**

* Teleport to next scene
* On touch make sound
* Game manager

## Afbeelding met verven, tekening, gebouw, kunst Automatisch gegenereerde beschrijvingScene 2

**Games:**

* Tops (tollen)
* Stilts (stelten)

**Animations:**

* Dancing
* Climbing a tree
* Petanque
* Swimming

**Assets:**

* House
* River
* Bird
  + Sound
  + Animations

**Scripts:**

* Teleport to next scene
* Walking on stilts
* Spinning the tops

## Afbeelding met verven, tekening, kunst, persoon Automatisch gegenereerde beschrijvingScene 3

**Games:**

* Swing
* Hoepel rollen
* Rinkelhoep

**Animations:**

* Haasje over

**Assets:**

* Bricks -> Well
* Barrel
* Hats

**Scripts:**

* Teleport to next scene

## Afbeelding met hemel, schermopname, kunst, buitenshuis Automatisch gegenereerde beschrijvingOutro

**Games:**

* None

**Animations:**

* None

**Assets:**

* Painting
* FadeCanvas

**Scripts:**

* Outro manager
  + Move the painting
  + Control the FadeCanvas
* PaintingScript
  + Make the different parts of the painting move
* Teleport to next scene

# Moodboard

## Visual

## Auditory

*I will write this out in the future...*

*Add scores!*

**Immersive**

* **Should support and enrich visual**
  + Simple and clear design
    - Simple structures Based on dance music with repeating melodies
  + mood
    - Visual use of damped colours, but still a lot of colours.
      * More wait on minor but keep a lot of major sound
  + For children
    - Keep it simple and use recognisable motives
  + Based on renaissance
    - Use typical and recognisable characteristics of renaissance style of music
      * Fifths, modes, structures, …
* **Make different environments sound different**
  + Inside
    - Jazz café style, free improvisational with lots of breathing in between
  + Street
    - A-B-A style dance tune with upbeat accompaniment
    - Try to imitate the rush of a street
  + Field
    - Incorporate sounds of the outside
      * Birds chirping, dogs barking, sounds of working, carriage coming through
  + River
    - Use of slow vibrato as feeling of water going down a river
* Support narrative of inside a painting
  + Should try to make feel as if you are there, but still, something isn't entirely right
    - Use of postprocessing make sound distort or vague at times
      * Between transitions?

**Functionality**

* **Attract or repel**
  + Music playing in vicinity of activity
  + Louder near activity softer away from
  + Silent soundscape of wind near the edge of the map/ away from the activity
* **Make player exited and interested**
  + Games should be fun so the music should try to enhance this
  + Intro and outro
* **Keep the music cohesive**
  + Use of a standard as base
    - Make variations with different moods that cohere to different scenes based on that standard

# User flow & Conceptualization

**See slides on digitap: design thinking and Conceptualization.**

# The Value of VR

**A paragraph explaining why VR is an added value compared to the situation without a VR component (min. 1 A4)**

**See slide on digitap for inspiration: production**

Integrating a VR component into the museum experience vastly enhances the overall encounter compared to a setting devoid of such technology. While a traditional museum visit offers a glimpse into the art world, the inclusion of VR augments this encounter by offering a multi-sensory immersion. Through VR, visitors transcend the confines of physical space, stepping into an interactive realm that breathes life into the artwork. In the case of the painting, which might not be physically present in the new museum, VR serves as a gateway to experience it authentically. The absence of the physical piece is compensated by the unparalleled opportunity for users to engage with it intimately, exploring every brushstroke and detail in a vivid, lifelike manner. This elevated encounter not only adds an exciting layer of engagement but also fosters a deeper understanding and emotional connection with the artwork. It transforms a passive observation into an active, participatory experience, making the museum visit more immersive, educational, and memorable. The technological prowess of VR infuses a sense of wonder, allowing visitors to explore artworks in ways that surpass the limitations of the traditional static displays, thereby enriching their cultural experience in an unprecedented fashion.

# Process

**A paragraph explaining the validation/testing process and conclusions (min. 1/2 A4)**

# Reference:

## Codes

**Intro Manager**

|  |
| --- |
| *using System.Collections;*  *using System.Collections.Generic;*  *using UnityEngine;*  *using UnityEngine.SceneManagement;*  *public class IntroManager : MonoBehaviour*  *{*  *public GameObject painting;*  *public float PaintingSpeed = 0.5f;*  *public GameObject CanvasFade;*  *private float i = 0;*  *private float startpos;*  *private bool fadeout = false;*  *void Start()*  *{*  *startpos = painting.transform.position.x;*  *StartCoroutine(DelayPainting());*  *CanvasFade.GetComponent<FadeCanvas>().StartFadeOut();*  *}*  *void Update()*  *{*  *if (painting.active == true)*  *{*  *if (painting.transform.position.x <= -5)*  *{*  *i = (Time.time \* PaintingSpeed) + startpos;*  *painting.transform.position = new Vector3(i, painting.transform.position.y, painting.transform.position.z);*  *}*  *else*  *{*  *StartCoroutine(ActivatePainting());*  *}*  *}*  *if (painting.GetComponent<PaintingMoveBlocks>().endIntro == true && !fadeout)*  *{*  *CanvasFade.GetComponent<FadeCanvas>().StartFadeIn();*  *fadeout = true;*  *}*  *if (fadeout)*  *{*  *if (CanvasFade.GetComponent<FadeCanvas>().GetComponent<CanvasGroup>().alpha == 1f)*  *{*  *SceneManager.LoadScene("Scene1");*  *}*  *}*  *}*  *IEnumerator DelayPainting()*  *{*  *yield return new WaitForSeconds(5);*  *painting.SetActive(true);*  *}*  *IEnumerator ActivatePainting()*  *{*  *yield return new WaitForSeconds(2.5f);*  *painting.GetComponent<PaintingMoveBlocks>().Active = true;*  *}*  *}* |

**Teleport to next scene**

|  |
| --- |
| *using System.Collections;*  *using System.Collections.Generic;*  *using UnityEngine;*  *using UnityEngine.SceneManagement;*  *public class OnTouchChangeScene : MonoBehaviour*  *{*  *public string scene;*  *void OnTriggerEnter(Collider other)*  *{*  *Debug.Log(other.gameObject.tag);*  *if (other.gameObject.tag == "Player")*  *{*  *SceneManager.LoadScene(scene);*  *}*  *}*  *void ChangeScene(string sceneName)*  *{*  *SceneManager.LoadScene(sceneName);*  *}*  *}* |

**ChangeHeight**

|  |
| --- |
| *using System.Collections;*  *using System.Collections.Generic;*  *using UnityEngine;*  *public class ChangeHeigt : MonoBehaviour*  *{*  *public GameObject xrOrigin;*  *public int height = 4;*  *public void changeHeight()*  *{*  *xrOrigin.transform.position = new Vector3(xrOrigin.transform.position.x, xrOrigin.transform.position.y + height, xrOrigin.transform.position.z);*  *}*  *public void resetHeight()*  *{*  *xrOrigin.transform.position = new Vector3(xrOrigin.transform.position.x, xrOrigin.transform.position.y - height, xrOrigin.transform.position.z);*  *}*  *}* |

# 

# Collaboration

**your teams experience in a multidisciplinary collaboration (min. 1 A4)**

**& conclusion of each individual in the multidisciplinary collaboration (min 1/2 A4)**

Collaborating across diverse disciplines in crafting a VR project is an exhilarating journey. Engaging with individuals from art and design enriches the process by infusing unique perspectives into the creation of environments. Their creative input not only enhances the visual appeal but also elevates the immersive experience through tailored music compositions and ambient sounds. The synergy of varied expertise amplifies the project's depth, ensuring a holistic and captivating virtual reality encounter.

Translating the skills of art and design into the fabric of the game yields a painterly aesthetic. Leveraging these abilities infuses the virtual world with a visually captivating, canvas-like appearance. The meticulous attention to detail and artistic finesse transform the digital landscape into an immersive masterpiece, mirroring the strokes of a skillful painting.

Embracing the expertise of a music artist can inject a thrilling dynamism into our VR game. Their contribution holds the power to elevate the game's intensity, immersing players deeper into the experience. By crafting bespoke soundscapes and evocative melodies, the music artist sets the tone, heightening suspense, excitement, and emotional resonance, fostering a truly captivating and exhilarating journey within the virtual realm.

### Niels

Reflecting on our project's journey, the initial stumbling blocks soon dissolved as our team found its stride, aligning our paths for a harmonious development journey. It was a thrilling turning point when our collective vision synchronized, propelling us into an immersive world of creation. The collaboration with art and design was a standout moment, infusing our game with a finesse that truly set it apart. The integration of their assets was a transformative experience, accentuating every detail and elevating our virtual reality to its zenith.

Working alongside our talented audio artist was equally captivating. Their meticulously crafted sounds breathed life into our creation, adding a new dimension that captivated our senses and boosted the immersive experience. This collaborative venture reaffirmed the remarkable impact of diverse talents converging towards a shared goal, transcending the boundaries of our VR project beyond our initial aspirations.

# Post-project

**what are the next steps to go from your prototype to a VR product (min 1/2 A4)**

1. Optimization: Pay attention to detail, focusing on graphical enhancements, smooth interactions, and eliminating bugs or glitches. Optimize performance for seamless gameplay.
2. User Testing and Feedback: Conduct extensive user testing to gather insights. Incorporate user feedback to fine-tune the product, ensuring it meets user expectations and provides an enjoyable experience.
3. Content Expansion: Expand the content library by adding more diverse environments, interactive elements, or levels. This enhances replayability and keeps users engaged.

# Creditslist

**Niels – Scene 1 & Animation player (minigame)**

|  |  |
| --- | --- |
| **Animation** | **Games** |
| Blowing bubbles | Doll |
| Catwheel/ handstand | Bikkelen |
| Climbing a tree | Hobby Horse |
| Trowing a rock/ bikkelen | Poking a turd |
| Hold hands | Balance a hat/ stick |
| Playing with doll |  |

Scripts:

* On touch make sound
* Object activate on touch (minigame)
* Game Manager

Scene:

* Environment
  + House
  + Fence
  + Child seat

Afbeelding met schermopname, Multimediasoftware, Grafische software, software

Automatisch gegenereerde beschrijving

**Kevin – Intro & Outro & Scene 3**

|  |  |
| --- | --- |
| **Animation** | **Games** |
| Sitting | Swing |
| Turning with a wheel | Stelts |
|  | Turning a wheel with a stick |

Scripts:

* IntroManager
* OutroManager
* PaintingMoveBlocks2D
* PaintingMoveBlocks
* OnTouchChangeScene

Scenes:

* Bricks + interactable
* Barrel + sound when touched
* …

FOTO