NEW TECHNOLOGIES

2D VR Basketball game

By Marijke ter Pelle and Luuk Siewers

G&I year 2

Process

Brainstorm

- How can we add interesting interaction to VR?
    - Look at the possibilities of VR controls
        - Gestures
        - Canvas pointer
        - Gyroscope
    - how does 2D in VR work?
- Experimenting with mini-games

Process

VR Basketball game in 2D

- Can we use the Tobi Eye Tracker with this concept?
    - Controls with your eyes
        - Position pointer with your eyes
        - Rotate pointer by closing one eye
- Problems during process
    - Both of us were sick for about a week at the same time
    - Using Eye Tracker failed, problems with the setup
- Decided to focus on VR version only

The making of

Roles

- Luuk
    - Unity Developer VR version
- Marijke
    - Developer Tobii Eye trackers (didn’t work out well unfortunately)
    - Game artist VR version
- Both of us
    - Game and interaction designers

The game

How does it work?

- Mechanics
    - The ball falls out of the sky and you can bounce it with your platform as control
    - 1 platform per hand, change position by pointing and rotate by rotating your hand
    - Try to get the ball into the basket (obviously)
        - When you miss, you get a “miss point”
        - When you score, you get a point
        - When you scored or missed, the ball will fall at a random position (not too far from the last position)

The making of

Expected challenges

- Keep all elements on the same (z-axis) distance while rotating around the camera
- Don’t lose gravity on the basketball (so don’t edit the position of ball manually)
- Make the controls working with canvas raycasts
- Don’t stick any elements to the camera object (eventhough it seems the best solution), because elements falling out of the screen will lose the right (z-axis) distance

The making of

Version 1

- Technical
    - The ball and platform turn around the camera, but the z-position is not controlled
    - The 2D collider can’t rotate around the y-axis (which is necessary)
    - The platform is controlled with the mouse (positioning) and the arrow-keys (rotating)
    - Controls of the camera with the mouse (turn to left when mouse is at the left side and vice versa)
    - It’s not possible to “hit” the ball, because the collider detection isn’t fast enough

Video demo: https://youtu.be/38y4RJ6uVww

The making of

Version 2

- Technisch
    - Z-position fixed with distance()
    - 2D colliders replaced with 3D colliders
    - Collider detection still not fast enough to “hit”
    - Scores added to the UI

Video demo: https://youtu.be/CGn63IwBiqU

The making of

Version 3

- UI feedback
    - Arrows added to indicate where the ball is (while it’s outside the viewport)
- Art & sounds
    - Art of the environment created and added
    - Bounce and theme sounds searched and added
    - Animated clouds with each cloud a random pace

Video demo: https://youtu.be/gh0vR0-Zcds

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PMI

Positive

- Interesting combination of 2D, 3D and virtual reality.

- The challenge to make something where VR is adds value. With our concept is it important to be able to look around you and VR is perfect for that.

- The environment in game looks nice. It gives a sense of depth and the animated clouds make the game more alive

- The freedom during the module motivates to experiment more and to take more risks

Negative

- Oculus and Tobii EyeX are not compatible with Apple for developers

- Because of the small amount of time, there was not much possibility to test. The VR space was closed for a while and the Blackbox was also a limited time open. Most of the time there was no VR set available at the uitleen also. We got one for 1 day, but then we discovered we couldn't test with it because of our computers and the school system on the PC's at school

- We were both sick for a week, which means we only had 2 weeks to design and develop the game while also having another module at the same time

Interesting

- The amount of variation in other students' work

- Thinking about the possibilities of how to use the controls.

- What does and what doesn't work well and why? What are VR's possibilities and how can you test without VR?

- The challenge to develop a 2D kind of game in a 3D world

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That’s it

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