

Whizzy (VR)

2025

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Requirements

Business: (What does the client want?)

- The client aims to make the campus more accessible with the input of our game and to underline the need for research to make the campus more inclusive for wheelchair users.
- The client aims to raise awareness for accessibility places and features on campus for people with wheelchairs.
- The client aims to show the end product of the game to the symposium of Kenniscentrum NoorderRuimte in Hungary.
- The client aims to make an inclusive game which shows an experience in a wheelchair for people who are not physically impaired.
- The client aims to simulate a wheelchair experience but not boring.

Functional: (What does the user/system want?)

- As a user, I want to understand the movement to navigate in the level.
- As a user, I want interesting movement mechanics that are relevant to the game.
- As a user, I want to be able to use magical items to make my experience easier.
- As a user, I want to be able to improve at navigating and receive new tools to make navigation more interesting.
- As a user, I want to experience a coherent story that I can relate to.
- As a user, I want a fun and engaging experience.
- As a user, I want to overcome obstacles (like blocked steep ramps).

Qualitative: (What does the user experience in our game)

- The system offers signs to help the user navigate in the game
- The system offers items to help the player navigate in the game.
- The system provides the user to bounce when approaching the characters, provides a collision for the ramps to make it harder to go on and
- The system provides boundaries for the user to not go on stairs and fall over on the higher floors.
- The system provides navigation hints to help the user get to the next object.
- The system provides movement that reflects the real world physics principles defined by the controllers' joysticks.
- The system offers audio dialogue lines to the characters and user to show resemblance of the interactions in the real world towards wheelchair users.

Whizzy description

Story

The player is a student in a wheelchair, who does magic on the side as a hobby. The school of the player, Hanze University, is organizing an event for showcasing magical talents. The one who finishes first place, will win a prize. Reading that the prize is a Nimbus 2000, you immediately sign up for the competition. On the day of the event you've already decided to leave a few hours earlier to not miss any buses. Still 2 of them have the audacity to drive past you, because they simply don't want to deal with trying to get you on the bus. Going for the last resort to still try and make it in time you call a taxi. Finally getting to campus when the event is almost starting, go to grab your stuff. However, it seems as though the universe is against you winning this event, because the items are gone. Someone is trying to sabotage you by hiding your magical items on campus. It's your goal now to try and find all five of them before the event starts.

Gameplay

The player has 10 minutes to find all 5 magical items. Our game structure follows a linear path, the magical items will be found in order. Our goal is to make the player see that they can't reach/get to item 2, but when they've gotten item 1 they suddenly can. We're trying to really highlight that there needs to be more thought put behind some accessibility features. Example: Hat is placed on the first floor, the wand will guide them to it but they will still have to tackle navigation to the upper floor by looking for accessibility features like the elevator (since the wand won't show them in pathfinding)

Magical items

1. Tarot cards > Shows you what the next object is, and serves as an inventory system
2. Wand > When you shake it, a sparkling path will appear before you to show the way to the next object
3. Wizards hat > When you put this on, you start levitating (get over crowds or bumps)
4. White doves > Will push/pull you up difficult to manage ramps
5. Crystal Ball > Last object, teleports you to the stage

Pick up Order

1. Service desk > tarot cards.
2. Cafeteria > wand.
3. First floor > wizard hat
4. A1 wing > dove
5. C0 wing ramp > orb
6. Finish game.

Inaccessible Accessibility features ([visual explanation in layout](#))

1. Ramp > Just like real life, sometimes the ramps are too steep for a wheelchair user to get up on.
2. Crowded areas > Groups of people will limit a wheelchair users sight and navigation skills
3. Social > Most of the time, people will talk to wheelchair users like they're children or are looking for their caretaker. Assuming that they can't mentally function like normal people do.
4. Ground textures> To highlight for wheelchair users where they could fall off and edge, ridges or other hard textures are used to indicate this. In Hanze however they are hard to find or not hard enough.
5. D-routes > When only limited to ramps i.o stairs, wheelchair users will need to take D-routes often to where the able-bodied can walk in a straight line to their goal.
6. Lifts > Elevators are tucked away in the corners of buildings on Zernike and are usually very narrow and small meaning wheelchairs have a hard time rolling in or turning around.

Structure

The game has a linear structure as the player can't continue the game unless they finish the objective. The linear structure is to show and teach the player how to use different mechanics and present different accessibility issues of the campus, as they have to overcome an accessibility flaw before getting an object and moving on to a different accessibility issue.

Player type

Player as Discoverer, as they get introduced to the story of the game by talking to the NPCs. Player interacts with NPCs that tell them that they need to find their items for the show (the main objective of the game), and by talking, the player gets familiar with their character, which shows status and the abilities of the player in the game.

Story type

Interactive fully traditional story, in which the story stays the same no matter how many times the game is played, and the player can interact with objects and NPCs to help them finish the objectives and continue playing.

Narrative

Player finds out more about the context of the game from the NPCs and their own dialogue in the game. The ending, also shown as an interactable stage, represents bringing the player to the real world. Player has the role of a participant, in a wheelchair, to a magic contest. The interaction with varied NPCs shows different opinions and attitudes towards the wheelchair users and the building style and assemblage shows that was made in favor for people that don't require a wheelchair.

Plot

Player finds out about the story of the game from NPC interaction and gets familiarized with their situation as well as amplifying their motivation to play the game and finish the main objective.

Pacing

The player plays the game at their own pace, but has to finish the objectives before the timer runs out. The amount of failures doesn't influence the gameplay. After the player finds one of the items they will unlock the path and clues for the second one and this applies to all items. When the player passes through the people, they need to be careful not to touch them as they can bounce the player back and movement becomes difficult and costs time. The player will earn some time when they unlock new abilities once they find the items.

Visual experience

Theme and Mood

Warm-cold colors resembling the main colors of Zernike Campus specific from the Hanze buildings and other accessories related to the theme of magic. The colors show excitement and encourage exploration. The environment outside is warm to reflect the Hanze orange and the general cozy atmosphere of the game, as well as being accurate to the time at sunset
Hand-Painted textures for assets

Form

The introduction and premise of the story are shown in dialogue. The ending is an interactive scene where the user gets to relax and play around. The main content of the game (the gameplay) is shown from the player's view.

Style

The general purpose of the artstyle is to be easy on the eyes while also fitting the magical, whimsical nature of the game. the assets are mostly low poly with pastel like shading.

Setting

The game is set in ZP-11, a building from Zernike Campus from Hanze University which has places that have hostile architecture for wheelchair users. There are a lot of stairs, classrooms, big doors, a steep ramp, an elevator, lots of tables and the stage.

Concept art



Level

Immersion and world building

The game takes place inside of Van Doorenveste (Zernikeplein 11) and the colors and layout resemble the real life picture of the building

Objective

Main Objective: Gather all the items before the timer runs out.

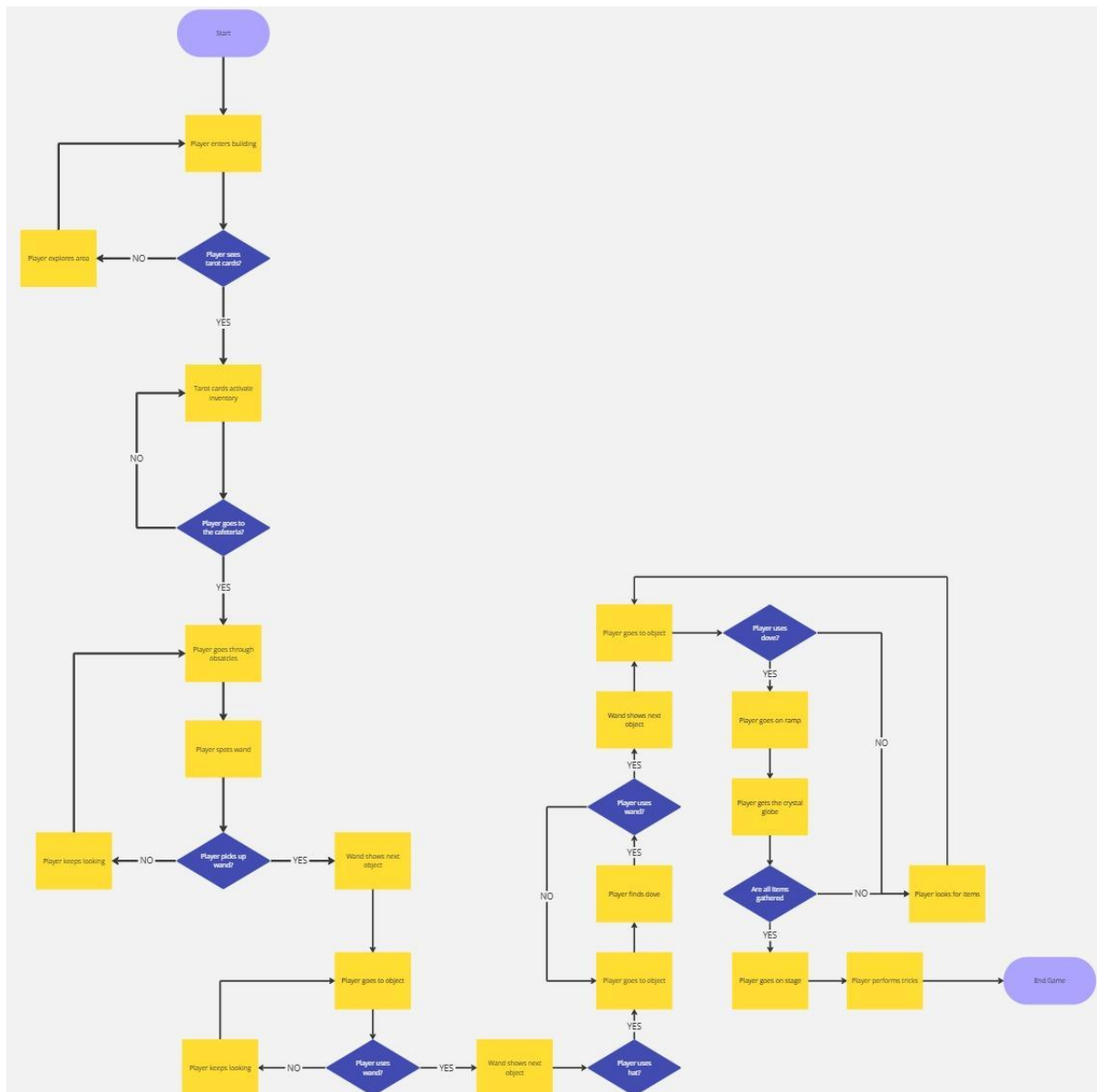
Small objectives:

- Talk to NPC
- Get tarot cards from service desk
- Find the wand
- Find the wizard hat
- Find the dove
- Find the crystal orb
- Go to the stage

Layout



Flow chart



Beat chart

Level name	Main lobby	Service desk	Cafeteria	Hallway first floor	A0 wing	Ramp
Gameplay	NPC interaction, moving	NPC interaction, Pick up tarot cards	Obstacles, use wand wayfinding	Move, use wand wayfinding,	Hat-levitating, move	dove- move on ramp, move
Objective	Talk to NPC	Get tarot card, talk to Service desk	Find wand, avoid obstacles	Find magic hat	Find dove	Find the crystal globe
Story beat	Player talks to the NPC and finds out that they lost their magical items and needs to go to the service desk.	Player talks to the service desk staff and receives a tarot card and finds out they need to go to the cafeteria.	Player goes through the tables and finds the wand and uses it to show the path to the next object.	After the player gets on the first floor by elevator, they find the magic hat and use it to fly over to the ground floor.	Player uses hat to fly over a crowd of people and find the dove. then they use the wand to find the next object and use the hat again to go over people again	When player gets in front of the ramp they are blocked and have to use the dove. After they use it they get the last item

Feedback loops

Negative feedback loop: The game offers challenges harder and harder to overcome to show the difficulties of a wheelchair user around the campus, but there are magical items to help the player overcoming those obstacles. Once the player gets the wand, it will show the direction of the next object and once the wizard hat is found, it can be used to fly over people and the dove will have to go on steep ramps. These items also help the player to finish the game before the timer runs out as the game also encourages completion of the whole game.

Emotional feedback (to reach the desired experience)

We are aiming towards irritation inducing gameplay, while keeping the player immersed in playing the game with fun objects to work with and search for. The game presents obstacles and challenges for the player to overcome and represents the daily struggles of wheelchair users around the campus, but the game also offers varied and fun mechanics to keep the player engaged in completing the main objective. The obstacles are annoying and frustrating for the player, but the items are engaging, as well as the environment, which shows familiarity and a sense of comfort. The dialogue with the NPCs is meant to be annoying to the player to highlight the issue of communication from the perspective of a wheelchair user.

Rewards (to support game objective and thus internal goal)

The player receives a new item after every overpassed obstacle to encourage continuing the game and reward the player after the hard work. The items will help the player get to the other items.

Player first moves with difficulty in the cafeteria and finds a wand to show the way to the wizard hat. Player then goes to the next floor using the elevator and needs to go through a crowd of people and find the wizard hat. Then they need to go downstairs, use the wizard hat to fly over people to get the dove and later the crystal globe is obtained after going a long distance and use the dove to go on the ramp.

Gameplay moments (what happens in the level)

Player starts the game and can move around

Player collects the 4 items in 10 minutes

Player fails if they don't get all 4 within the time limit

Player wins if they do get 4 items, after they get teleported to the stage and can perform their magic show

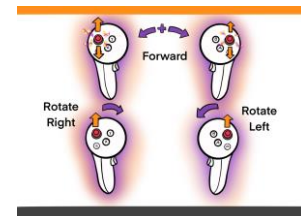
Gameplay actions (what a player can do in a moment)

Magical items:

- Hat: Put it on your head to levitate and overcome impossible boundaries
- Wand: Shake it to show the way to the next object
- Tarot Cards: put the items in the slots to keep them with you at all times
- Dove: Hold this item to speed up your movement, you will be able to get over those difficult ramps now

Controller interactions:

- Grab items with the inner trigger button
- Move forward by moving both joysticks forward
- Rotate to the left by moving the left joystick to the right
- Rotate to the right by moving the right joystick to the left



The headset:

- Sounds and music will flow from the headset to your ears when picking up certain items or entering specific areas
- The virtual reality based vision enhances the player into the story and reality of the game

References list

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