Audio game

Brainstorm Document

Audience: Blind children, 6 - 12 y.o.
Assignment: Teach player auditory orientation skills.

Proposal: 3D Exploration Game

Exploration idea: orientation game in sound friendly environment with some minigames that are based off of classic games (e.g. crossing the street like frogger, pong like game where you have to catch a ball, snake is find some objects (sounds)). We would also like to add some "orientation games" where you have to remember a room layout in order to solve a puzzle.

Story/style like Alice in Wonderland/Peter Pan, with some mystery you have to solve. (Other possibility: A day at the fair)

Use GSound library for awesome sound propagation (reflections and refractions for all kinds of materials), doppler effect for cars. See this video for how awesome it is:
https://www.youtube.com/watch?v=buU8gPG2cHI

Proposal: Funfair

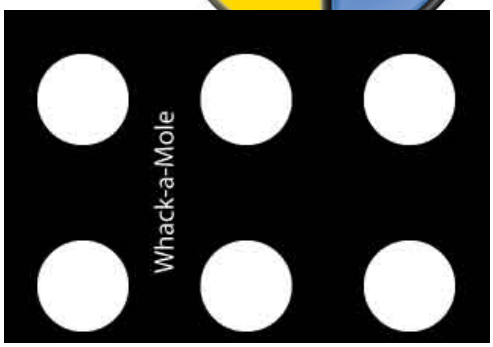
Lots of things are similar to the original proposal but I just wanted to throw this out there :)
We could make some kind of funfair themed game. The story could be a kid going with his friend to the fair.

I was thinking about several mini-games and then I thought why not focus a little more on the mini-game aspect.
I would also like to add medals or something similar that you get when you complete a game on easy/normal/hard (with enough points). Then you can unlock new minigames by spending your medals as a type of currency. This encourages users to try different minigames and a sense of achievement in between minigames.

Beep Boop

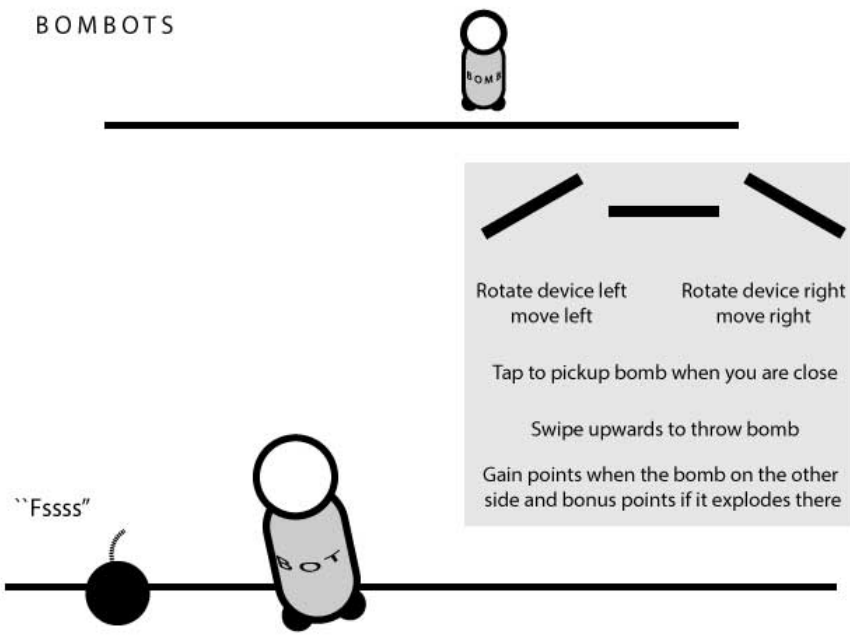
Everyone knows this thing:
Create #n buttons on the screen
More buttons > harder
Randomise button to sound mapping > harder

Whack-a-Mole



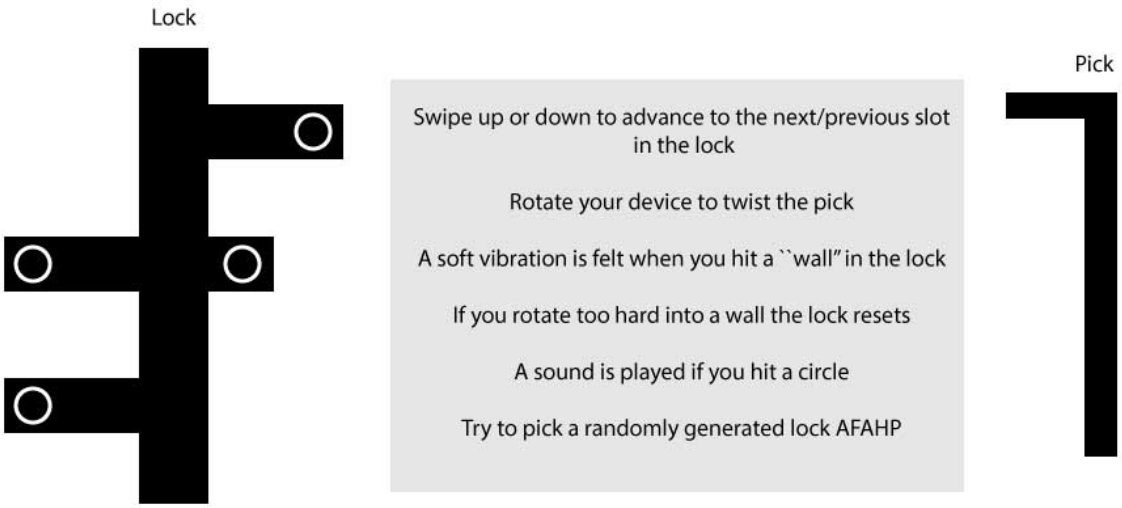
Create #n buttons on the screen
Give each mole their own sound or go landscape mode, use closeness and position to determine where the sound comes from and how loud it is.
More buttons > harder
Moles disappear faster > harder

B O M B O T S



The idea is that there are two sides. and you are trying to get the bomb to the other side.
You'll have to listen to where the bomb is and move towards it. When you think you're close enough you tap the screen to pick it up. Its possible to punish a player if he's not close enough. Then you throw the bomb to your opponent.
Opponent can be computer controlled or if we fancy implementing multiplayer, another person.

Lock-Picker



Other mini-game ideas/mechanics

by bas: Remembering position and reacting accordingly (My idea would indeed be different sounds for each hole, and then remembering your position, and try to navigate quickly based on that info.)

Possibilities

Control possibilities

- Voice
- Tilt device
- Tap anywhere
- Tap button (buttons can be explored using sound&vibration feedback during tutorial and/or game)
- Double tap anywhere
- Double tap button
- Tap and hold anywhere
- Tap and hold button
- Swipe (
- FPS
    - Mouse/controller/OR/touchscreen for head turning
    - Keyboard/controller/touchscreen for movement

Actuators

- Audio
- Vibration

Possible skills

Just some skills that crossed my mind.

- orientation (where am I)
- location (where did that sound come from)
- memory (what was the order in which
- reaction speed (whack a mole in time)
- ``listening'' to touch (vibrations)
- stress management (bombots exploding bomb)

Possible benefits

Just some benefits that the game could give.

- excitement (being eager to know what the other mini-games are)
- socializing (sharing high scores with others | letting friends play the game)
- confidence

Temp notes by Mick:

I'm starting to think this game is more useful to let people without a visual impairment experience what it is like to be blind (understanding this is a good thing for a number of reasons, think about architects) than to train people with a visual impairment in navigational skills. Blind people/kids are training these skills the entire day. If we create a game that tries to teach them just that, I think it will not be very helpful nor entertaining to them.
We should try to find areas where blind kids actually need help. Maybe in socializing with others or with gaining confidence in some area.

Temp notes by Olivier:

Game is orientation based. Kids need to learn to orient in an environment, so focus on this. A story where a kid needs to help someone find a pet could work: start in apartment, pick up phone, walk in hallway and avoid some people, exit building and cross streets and walk on sidewalk while avoiding people, then in the park chase the pet of your friend, pet disappears into a rabbit hole, you find a "dungeon" door(?), where you have a temple with puzzles such as: turn on some buttons on machines in the correct order to open a door; in a circular control room some buttons quickly need activation, click on them when active, they are all around you (sort of whack a mole); door opens and then you enter some sort of apartment with different rooms where you have to orient yourself in order to find clues to open the next door. finally you get chased by some ghost or whatever, and then at the end you find the pet yaaay.
Have a fairy around you, like in zelda, that helps you orient and that can teleport you to spawn points if you make a mistake. Fairies are always good, cute and kind and they can do basically anything. It can help orientation a bit, also controls, and also explaining what is happening etc etc.
Regarding the funfair: I'm against it because it doesn't really help with a good story, its more like random mini games. I would love a nice story where the minigames have a meaning. Also, I'd like to avoid changing the controls as much as possible. Learning the normal controls is already hard enough for kids. Think of mini games with the same usual controls. Also, more different controls increases complexity in code and in the game, and needs more testing. Furthermore, I would prefer to keep the immersion of the kid: the kid plays a person, and not suddenly the actual game (if controls change).

Minigames, possible components:

- chase something
- be chased by something
- chase something, while being chased
- avoid obstacles
    - people (talking)
    - walls (needs sound simulation)
- positioning: remember where things were.
    - where was a certain room compared to your current room
    - some items that you can pick up don't actually make sound maybe? maybe just once? but based on the other sounds in the environment you have to remember where it was? Maybe help from fairy
- ~~Lock picking minigame from above? (not the same controls but can be easily explained)~~

We wanted to add the oculus rift for its accurate head tracking as a possible controller. People might laugh at the idea, but his is also great for publication, headline "Game for blind people uses oculus rift". Any controller should work: just mobile, keyboard & mouse, keyboard & oculus
Also we want to resemble reality as much as possible, because we want the kids to learn to orient in real life. Therefore using fps controls is the most logical step.
Would be fun if game can be used to learn kids to use clicks/ticks with their mouth in order to orient and "scan" what's in front of them. Needs accurate sound propagation simulation.

Decisions

Story vs mini-games

Mini-games in story mode

Pro	**Con**
Kids like (fanatasy) stories Mini-games are realistic and each could help teach them something orientation related Learn while having fun and while emerged in story Could be entertaining if thrilling Could be entertaining if funny Could be entertaining if mysterious Puts all the mini-games in a context Story mode learns valuable orientation skills by walking in virtual environments	need to write a thrilling and/or funny and/or mysterious story for children requires lots of narration requires theming all mini-games so they fit the story once you finish the story you will lose interest very quickly

How valuable are stories to children? It helps to put some context to what they are doing (lots of narration is required anyway to explain the minigames)
If we write a crappy story, would this be worth the effort? Yes, still gives some context
Is having a story essential to the success of this project? Not necessarily

Mini-games in medals mode

Pro	**Con**
can be implemented quickly easy to navigate, sense of structure unlocking medals/new minigames sense of achievement different controls can be fun/add to the difficulty -> more rewarding	does not strongly connect mini-games replayable highscore sharing different controls may be too difficult to learn

Story + Medals mode

Pro	**Con**
connects minigames	lot of work for a proof of concept

replayable	

Controls

Mobile

Pro	**Con**
portable easy to distribute has vibration actuator has motion sensor	doesn't have many physical buttons

Could processing power be a problem?

PC

Pro	**Con**
easy to distribute has many physical buttons	not very portable does not have vibration sensor does not have motion sensor

PC + controller

Pro	**Con**
has many physical buttons requires setting up controller could have vibration sensor could have motion sensor https://www.youtube.com/watch?v=afMRIMvgEZE	not very portable requires controller

PC + oculus rift (OR) support

This option was already selected during the meeting on thursday the 13th of November

Pro	**Con**
Great for demos Can give our game headlines, because "whut? a game for blind people with oculus rift support??" Head tracking allows for better immersion in 3d environment Head tracking allows for a kid to test where a sounds comes from by turning his/her head, just like in real life.	

Support for all kinds of controls

Pro	**Con**
Allows game to be played on many devices Allows the game to be played by people without a controller/Oculus Rift	Limits the possible controls of the game Some parts may be more difficult because controls feel unnatural (turning your head vs pressing a key)

Success criteria

What are the success criteria for this project. What do we want to teach these kids.
We're building a serious game so it has to be educational in some way.
Which skills are most vital?

Comment Threads

Kevin Allain

11:08 Today

I like the fair idea ! It's a good environment for mini-games.

Bas Dado

11:23 Today

I like this idea because it is fun to play some mini games you like again. However, I also liked our prior idea with the story that contains the minigames, especially navigating through the world should be extremely useful for improving the users navigational skills etc (with GSound library).

Maybe we can combine both ideas: We can put all the minigames in the main story somehow.
Then, in the main menu, users can choose for "Story Mode" or "Funfair mode"
In funfair mode, you can play all the games you unlocked in the story mode.

I'm not sure about the mobile interface: I think it will be hard for blind people to find the correct spot to touch on the phone, since that is just a surface. I think that maybe using a (Xbox360/PS3) controller might be easier for them?
Show less

Mick van Gelderen

11:31 Today

I was thinking about letting users explore the screen surface in the tutorial or before the game starts. By using vibrations when your finger gets near a spot (and play the accompanied sound). It should be possible to do this and its easier to distribute if you don't need a controller.

I also like the story mode a lot. Your idea of combining story mode and funfair mode seems a good alternative to me! Its also possible to include mini-games which focus on exploring.
Show less

Kevin Allain

11:38 Today

Well the story mode could be a day at the fair actually. Following your friend at the fair to go through all the games. And once game is finished, the fair mode could be a replay mode. Going from point A to B is useful, but I guess a bit more boring than games. But it does cripples the whole 'riddles game' idea.

Bas Dado

11:52 Today

I think it won't be boring: exploring is fun, that's why people play Skyrim, not Mario party a lot ;).
Making the story happen at the fair makes sense I guess. Although one location might be boring?

Mick van Gelderen

12:03 Today

I think navigating by sound should not a main ``issue'' in the story mode. Most blind people rely on their walking cane (or guiding dog) as well as sound in practice. IMO The main thing about the story mode should be the story e.g. a lot of narration and mystery.
https://www.telltalegames.com/
http://www.supergiantgames.com/

I would like to hear more about the story concept you guys seem to have in mind. Did you write some things down which I can read?
Show less

Bas Dado

12:17 Today

The story concept was mainly based around the navigating by sound idea, we didn't really have an actual story in mind, except from that we could use some Disney fantasy like setting (stealing some elements from Alice in Wonderland, Peter Pan)

We thought learning to better navigate by sound is useful for blind people (that's the whole goal of this game right?).
Show less

Kevin Allain

12:17 Today

Well our idea was to use an environment like a Disney movie (Alice in Wonderland, Peter Pan) and make mini games out of it. The advantage of the fair is that it justifies easily the games.
A fantasy environment would allow a better story, but would require to introduce games with a context, scenario, etc...

Bas Dado

12:32 Today

We also though about increasing the difficulty gradually. Some simple story that would be nice:
You wake up in your appartment, and the phone rings, walk to the phone to grab it (level 1)
You now have to navigate out of the building, but their are some people talking that you have to avoid (level 2)
Now you have to cross the steet (frogger-like minigame) (level 3)

This was before we thought up to go with the Disney-like theme, but something like that would be nice and cool I think. No complicated story with many options that change the outcome (like in Walking Dead or Witcher games), but a simple straightforward story that naturally leads you past all the minigames.
Show less

Mick van Gelderen

12:59 Today

As I mentioned before, blind people use sound to get a sense of direction but you can't navigate generic environments without physical assistance (white cane/guiding dog).

ASIDE I'm starting to think this game is more useful to let people without a visual impairment experience what it is like to be blind (understanding this is a good thing for a number of reasons, think about architects) than to train people with a visual impairment in navigational skills. Blind kids will learn to be self sufficient if you give them a stick and wrap them in a think blanket so they don't hurt themselves.

If the story is not really interesting or core to the game I vote against writing and implementing a storyline for the proof of concept. I think a story is a good addition but not necessary to make the mini-game concept a success.

Instead I would suggest to work on creating fun and diverse mini-games with interesting controls. I'll try to list different aspects that we'd like to train.