Accessible Gaming

The A11yCats Game: An Irreverent Reverent Adventure in Accessibility

History of A11yCats

Where it all started

A11yCats History

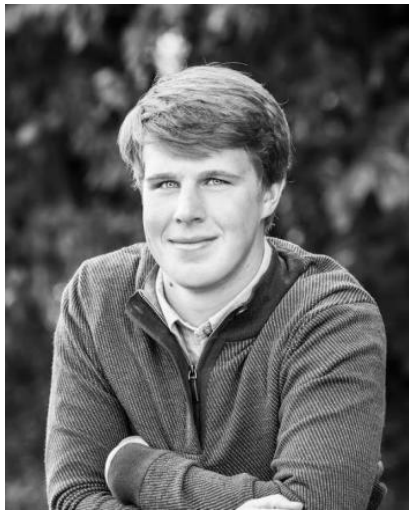
- Early 2018 – Design concept created
- Spring 2018 – Web Accessibility Initiative group ($1622.33)
- Summer 2018 – LGBT ($450)
- Fall 2018 – Able Gamers ($521.82)
- Spring 2019 – National Federation of the Blind ($1287.84)
- Fall 2020 – Center for Accessible Technology ($446.77)
- Ongoing – Accessibility Talks (A11yTalks)
- Redbubble – https://www.redbubble.com/shop/ap/39136088

Our Team

The Digital Accessibility Lab at Iowa State University

Digital Accessibility Lab Team

#A11Y



Building the Game

The design and development process

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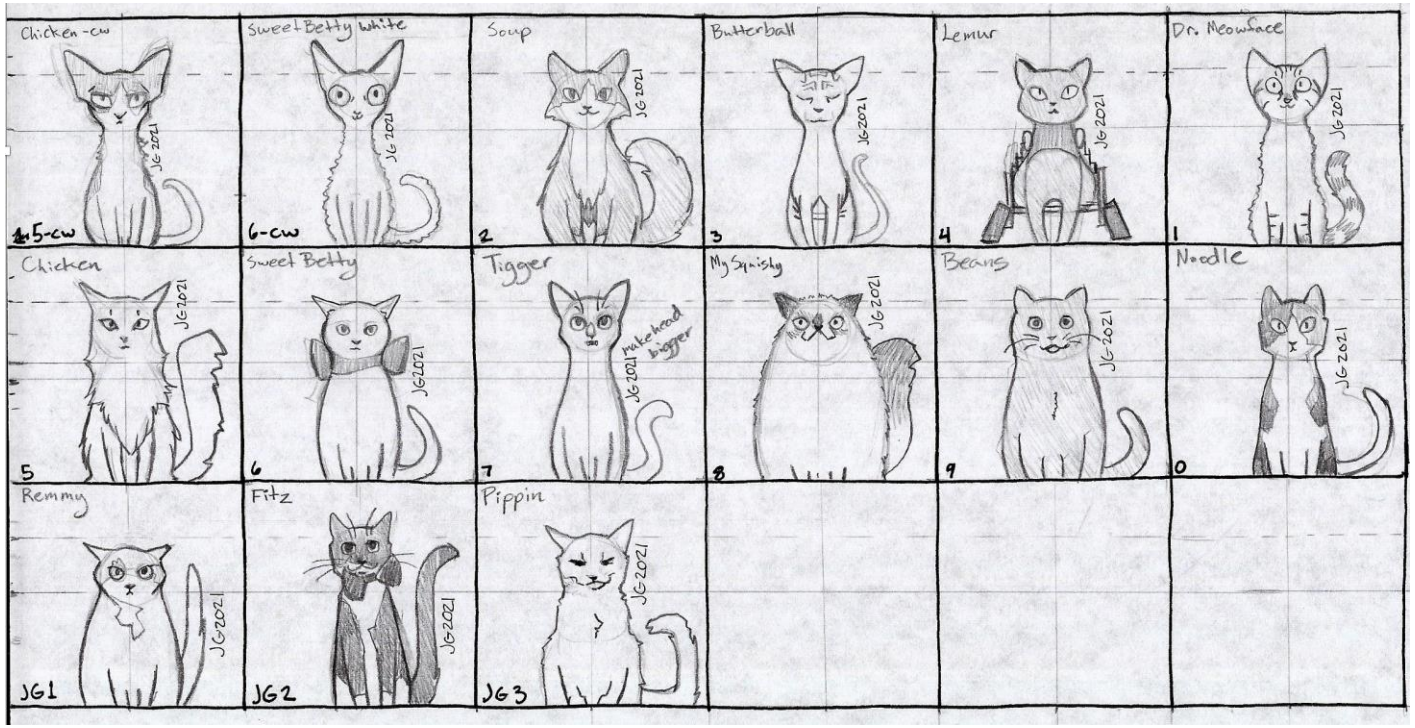
- Serious Game



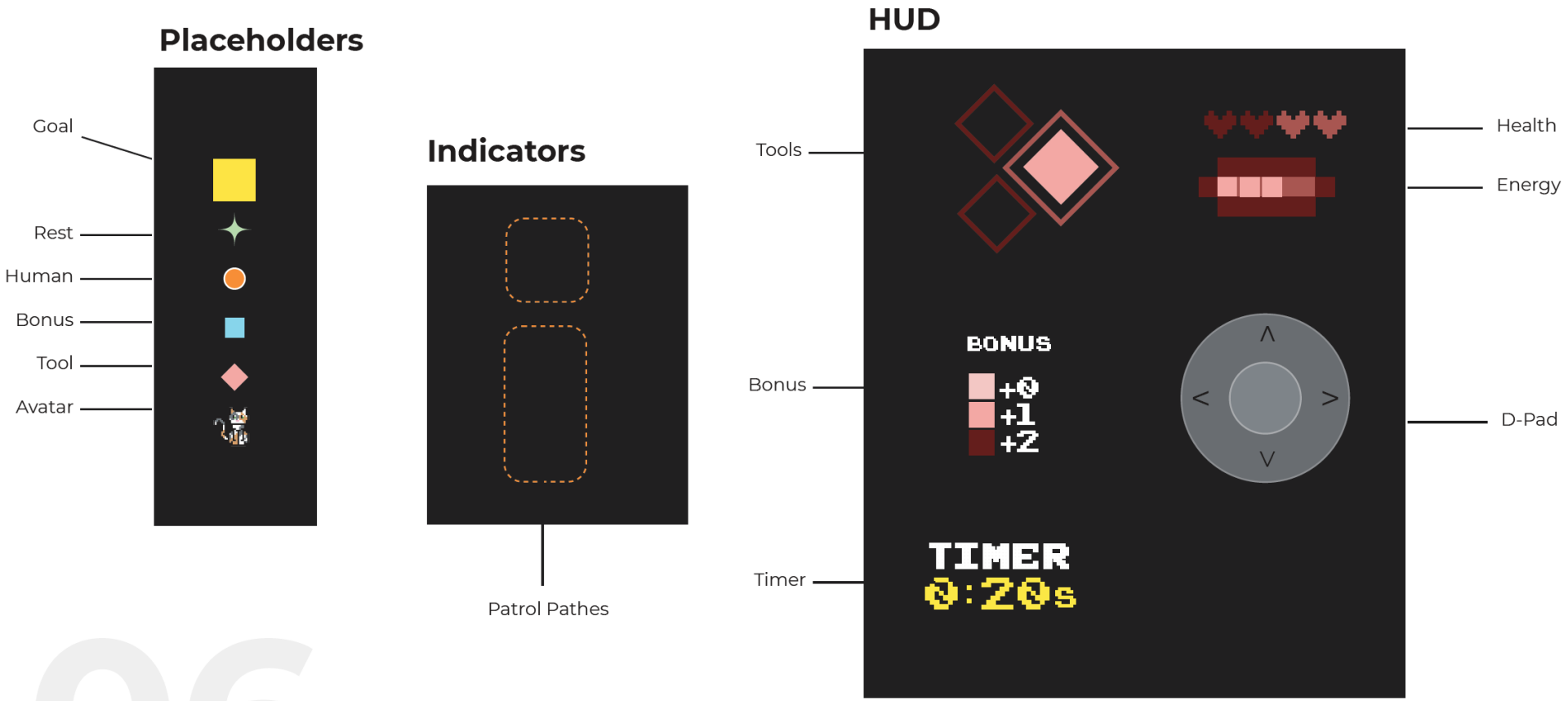
Considerations for Accessibility

- Remapping controls
- Color contrast
- Closed captioning (and subtitles)

Impact of the Game—Research

- Playing typically Non-Playable Characters (NPCs)
- Building awareness of disabilities and diversity
- Using humor (SFW – Safe for Work) to broach difficult subject

User Interface (UI) and Heads Up Display (HUD)



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UI Key

UX (User Experience) Study of the Game

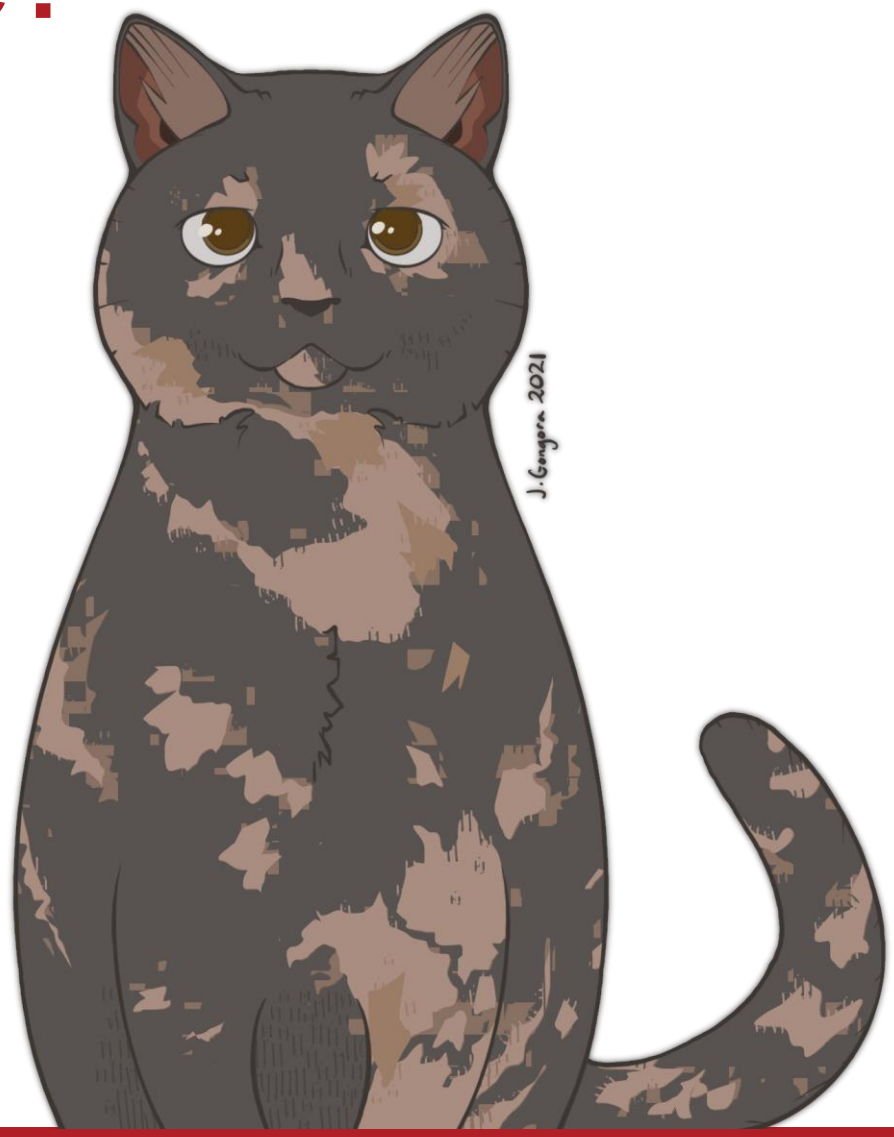
Our research goals and methods

IRB (Institutional Review Board) approval

- First step was getting IRB approval
- Exempt status: only using survey/interviews/observation; low risk of harm
- Why do we need IRB approval?
  - We are a university – heavy emphasis on research
  - IRB is required when planning to publish research – we plan to test and publish our research/ the game
  - IRB is required when research deals with human subjects
  - IRB ensures our research is not harming anyone

Why research in the first place?

- Inform game design and decisions
- Find problems early and often
- Understand users and their wants/needs
- Research will contribute to knowledge about:
  - Gaming accessibility
  - Disability representation in games
  - How disability representation affects user experience
  - Gaming as a way to teach accessibility
  - Including people with disabilities in entire game design process

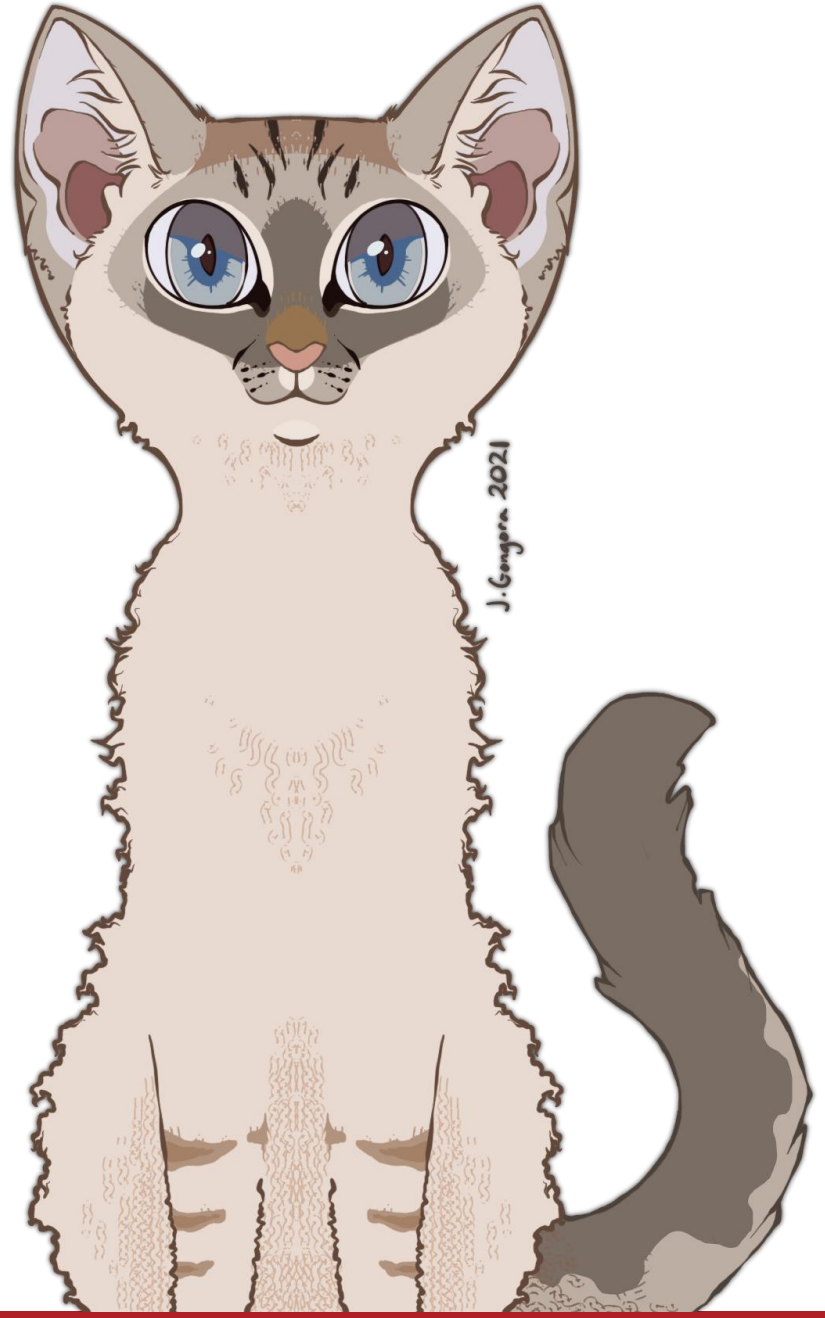


What do we want to know?

- Research questions:
  1. How do people with disabilities want to be represented in the game?
  2. What outcomes do people expect from playing the game?
  3. Are user personas helpful in developing the game?
  4. Does the game fit into the higher education curriculum?

Research Methods

- Qualitative approach
- Phase 1: online survey
- Phase 2: semi-structured interviews
- Who we are testing with:
  - ISU students 18 years of age or older
  - People with and without disabilities



Phase 1: Survey

- Mass email sent to Iowa State students
- Survey questions focused on understanding:
  - Digital accessibility within games
  - Disability representation in the game
  - What is considered a successful outcome for the game
  - Feedback on the game concept/User Interface elements

Types of Survey Questions

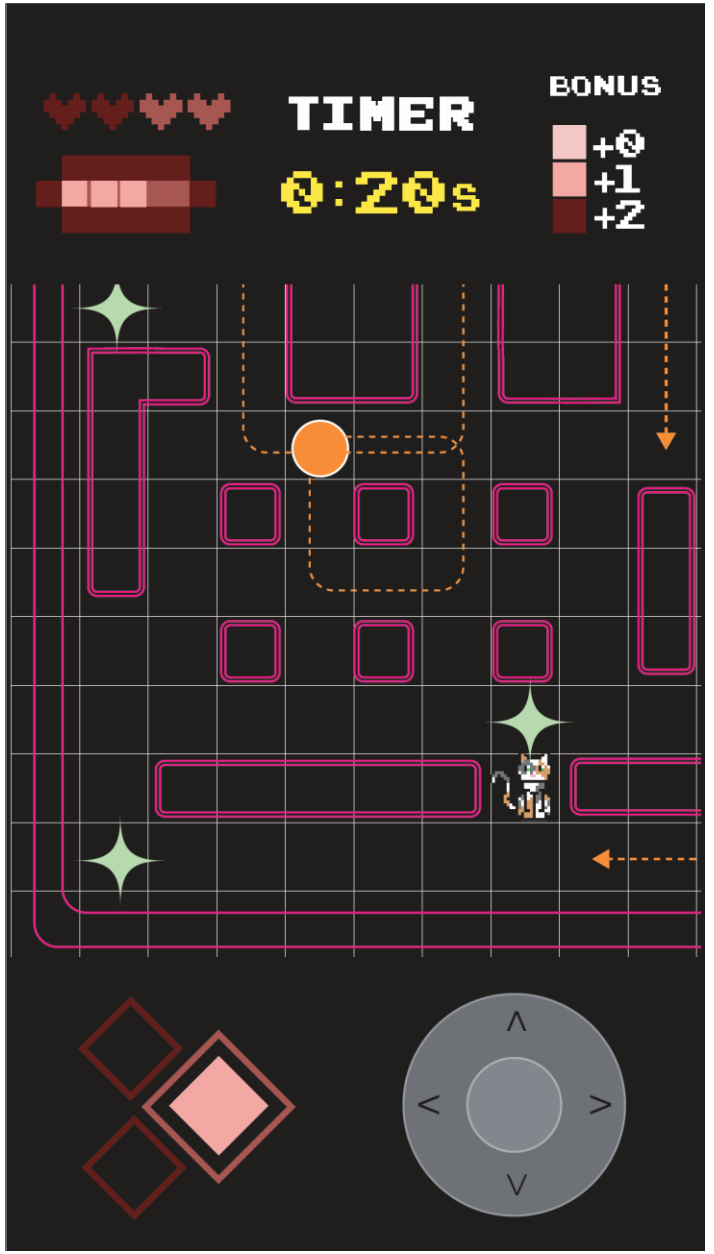
- Likert-type scales:
  - accessibility preferences and needs
  - disability representation/respectfulness of portrayals in game
  - overall game concept
  - UI design/aesthetics
- Semantic differentials scales:
  - adjective pairs relating to usability and aesthetics
- Multiple choice, open-ended, and closed-ended questions:
  - participant experiences and gaming habits
  - feedback on the game concept

Phase 2: Interviews

- Individual interviews - playtesting
- Participants recruited from Phase 1 survey
- Goals:
  - Identify problems in design
  - Pinpoint improvement opportunities
  - Determine user behavior and preferences
  - Learn opinions on features/aesthesis
  - Understand strengths/weaknesses
  - Evaluate UI elements
  - Establish overall playability

Play Testing

- Play tests will be in the Lab in Durham 116 with Level 1
  - Remappable controls
  - Play in both portrait & landscape modes
  - HUD left & right hand mode
  - Assistive grid toggle for game map
  - Assistive paths for enemies
  - Zoom mode
  - High contrast mode
  - Toggle between pixel & vector display
  - Adjustable type sizes & widths



What's next?

- We are currently focused on design, game development, and UX research/testing
- Plan is for the game to be released early 2023 – hopefully in time for axe-con next year!

Thank you!

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