Handheld Gaming

EECS 370 Spring 2017

Overview

- Handheld gaming: the good, the bad, and the ugly
- A brief history of handhelds
- Modern handheld gaming
- The future of handhelds

Handheld Gaming: The Good, The Bad, The Ugly

Handheld Gaming: The Good

- Mobile (duh)
  - it fits in your pocket
- Convenient
  - it fits in your pocket
  - cheap on the budgie
- Multiplayer-friendly
  - I can pull my phone out and show you a game
  - we can play together on a park bench
- Good for youths
  - keep them distracted?
- Good for adults
  - ~~keep them distracted~~
  - hip?

Handheld Gaming: The Bad

- Hardware limitations
    - small screen
        - pockets big enough for your phablet, bro?
    - weak CPU
    - battery life
    - no room for large peripherals
- Real-world limitations
    - propriety
    - sub-optimal lighting
    - ~~can get hit by bus~~ gameplay can be interrupted

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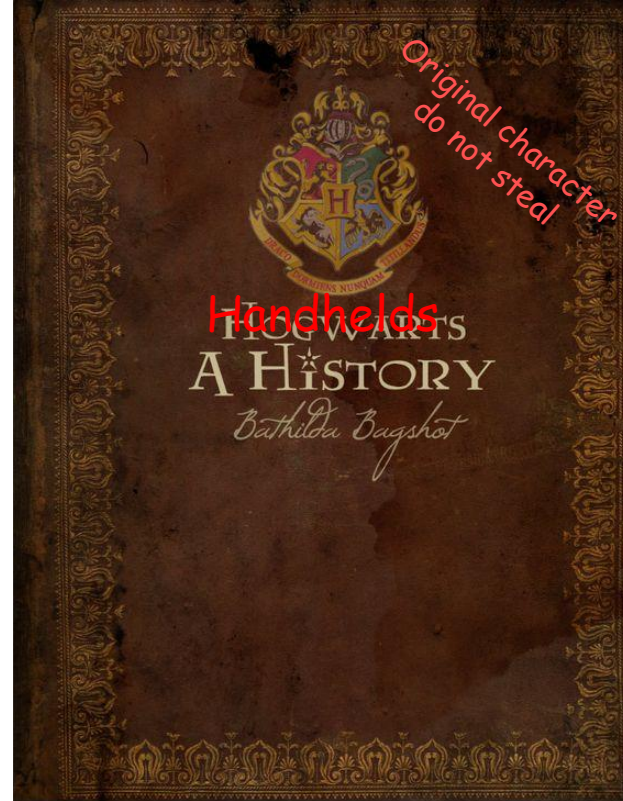
Handheld Gaming: The Ugly

- Input Modes

Interlude: What the f*** are these input modes?

- The Tap
- Double-tap
- Long Hold
- The Swipe
- The Pinch/...Expand?
- Accelerometer Controls...
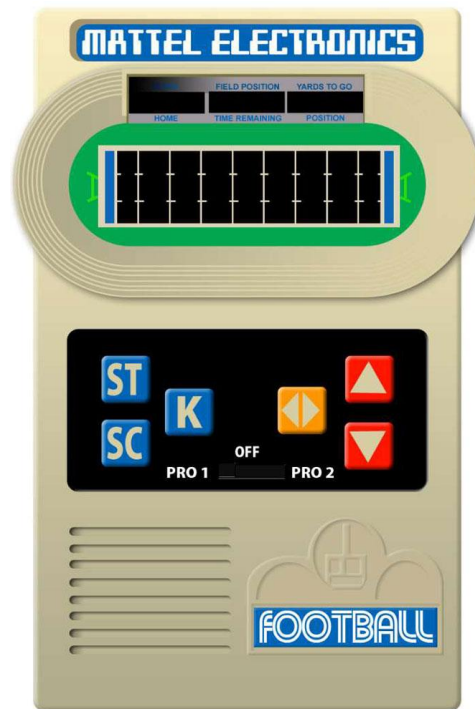
Handhelds: A History

- Brief
- Biased :)
- Much help from Wikipedia and Andrew Lovett (a previous TA for this course)

1977 Mattel Football

- Goal was to make calculator-sized games
- Each system was a separate game
  - usually sports
- LEDs for the display
- Big success

1979: Microvision (Milton-Bradley)

- Game cartridges!
  - big deal
- 16 x 16 pixel LCD
- Not too successful :(
 - static discharge damaged the game

1979: Microvision (Milton-Bradley)

- Game cartridges came with their own controls
- Close tie between controls and game
  - theming!
- First directional buttons: Cosmic Hunter

1980-1991: ~~Mr~~ Game & Watch (Nintendo)

- Games that also (for some reason) told the time
- Used LCD screens
  - often with overlays
- Different games had different controls
  - lots of them got reused, but that's actually a good thing
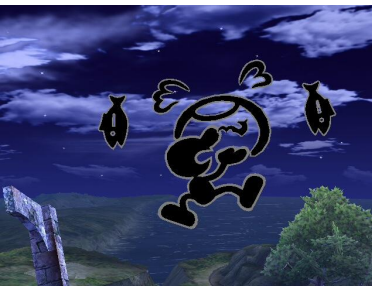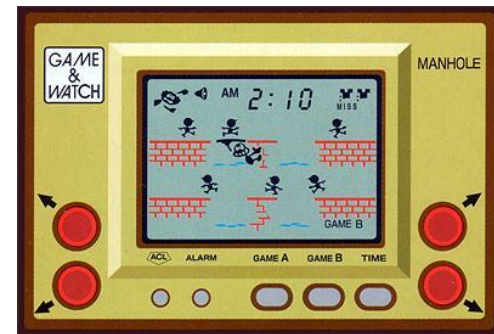
1980-1991: Game & Watch (Nintendo)

- Big success!
- 1982: Nintendo introduces the dual-screen model
- First instance of the "modern" directional pad
  - as a substitute for the arcade joystick

Late 1980s: Ripoffs Galore

- LCD screens with overlays were pretty poppin'
- Mostly, they were derivative, crappy games that stole each other's control schemes
- Accused of being "all the same game"

1989-2001: Game Boy Reigns

- Simple LCD
- D-pad from Game & Watch; A Button; B Button
- Multiplayer: optional Game Link cable
- In-f***ing-destructible
- Key selling points:
    - cheap ($90)
    - Came with Tetris

1989-2001: Game Boy Reigns

- Focus was on gameplay quality, not graphics
  - affordable gaming
  - long battery life (4AA batteries ➜ 30 hours)
- Good size
  - fits in your cargo shorts
- **Huge** library of titles
  - like 1000
- Dominates shelf space
- New models, including the Game Boy Color
- Around 120 million sold

IMG_4853.jpg
24 KB JPG

the smaller the battery the bigger it screm

1989-2001: Game Boy Reigns

Atari Lynx (1989)

- First color screen, good graphics
- Expensive ($150-180)
- Short battery life (6AA ➜ 5 hours)
- Large & cumbersome
- < 500,000 sold

1989-2001: Game Boy Reigns

NEC TurboExpress (1990)

-   Great graphics (could be used as a TV)
-   **Way** too expensive ($250-300)
-   Shorter battery life (6AA ➜ 3 hours)
-   Numerous hardware problems
-   Around 1.5 million sold (?????)

1989-2001: Game Boy Reigns

Sega Game Gear (1990)

- Color screen, landscape mode
- Benefitted from the Sega Master System's game library
  - 300 titles
- Somewhat expensive ($150)
- Short battery life (6AA ➜ 6 hours)
- Around 11 million sold

Finally, in 2001

The Game Boy's reign ends.

2001: Game Boy Advance

- From a technical standpoint, around the SNES
    - except it's handheld
- Similar controls to the GB
- Backwards-f***ing compatible
- Lots of ports from the SNES
- Lots of key first-party original titles
    - Pokémon
    - New Mario/Zelda
    - Advance Wars
        - new franchise
        - critical success

2003: N-Gage (Nokia)

- First attempt at joint phone/gaming platform
- It looked like a taco
    - style counts for handhelds
    - you'll probably be in public
- Gaming wasn't convenient
    - had to remove battery pack to change cartridges
- Too expensive for the youths ($300)

2004: Nintendo DS

- New innovation to display and controls
    - two screens (hai, Game & Watch)
    - bottom screen was a touch screen (resistive)
    - microphone
    - Wifi and local wireless
- Focus still on gameplay
    - graphically limited (on par with the Gamecube)
- Backwards compatible with the GBA

2004: Nintendo DS

New Super Mario Bros.

- Touch screen was a gimmick
    - had to break out the stylus to get your
      power-up

2004: Nintendo DS

Mario Kart

- Ignored the touch screen
    - used as a display instead
- Classic controls

2004: Nintendo DS

The Legend of Zelda: Phantom Hourglass

- Touch screen controls integrated
    - movement
    - attacking
    - mapping a course at sea
    - taking notes

2004: Nintendo DS

Brain Age

Guitar Hero

2004: Playstation Portable (Sony)

- Way more powerful than the DS
- Sleek
- That weird analog nub thing
- Used disks (Universal Media Discs)
  - kind of a pain

Nintendo DS vs. PSP

Nintendo DS

- Launch price: $150
- Lots of quality games & ports
- Relatively rugged
- Total sales (early '09): 100 million

PSP

- Launch price: $250
- Fewer well-received games
- Finicky discs
- Total sales (early '09): 50 million

2007: iPod Touch

- Phone/Internet/Music/Gaming
- Large, high-quality touch screen
    - vertical or landscape
- Reasonably large hard drive: 4-16GB
- Three input modalities
    - touch screen
    - accelerometer
    - microphone

"Modern" Handheld Gaming

- Online marketplaces
- New hardware
- Games the worked

Online Marketplaces

- Convenient
  - you download games directly to your phone
    - play them for three minutes and delete them*
  - no cartridges
  - no physical stores
- "Open Market"
  - developing a mobile game is (relatively) cheap
  - distribution is free
  - low barrier to entry

*we're going to come back to this

New Hardware

- Or, at least, better hardware
- Higher resolution screens
- Better accelerometers
- More accurate microphones
- Better speakers
- Longer battery life

New Hardware

Who cares?

Except for the battery life one. We care about that.

New Hardware, Old Principles

- Simple gameplay
    - playing your game should teach your game
    - full concentration optional
- Short intervals of play
    - 5-15 minutes (time it takes ~~to poop~~ wait for a train)
    - but allow for many intervals at a time
- Strong multiplayer
    - local, especially
- Innovative controls
- Emphasis on gameplay
    - no one cares if you take advantage of the Pixel XL's 534 ppi

New Hardware, Old Principles, New Principles

You have one chance to get people to play your game.
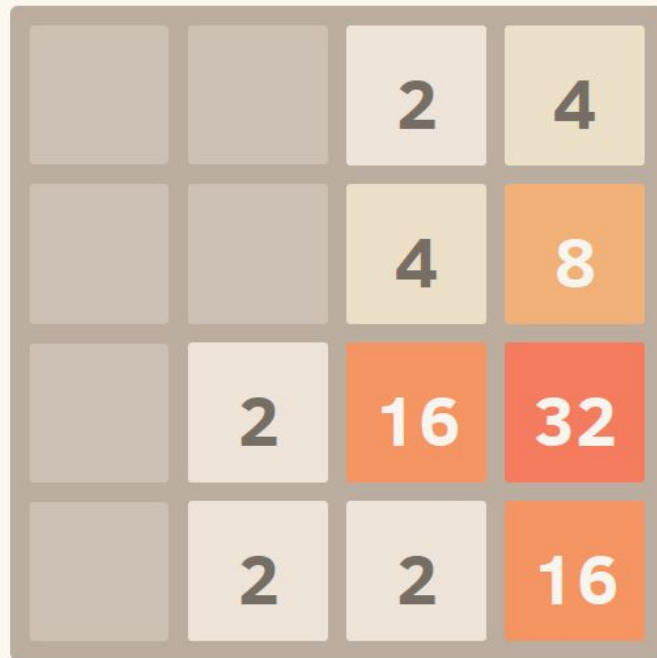
Make it count.

Games that Worked: Spaceteam (2012)

- A game of cooperative shouting
- You hit buttons and turn knobs
- Local (loud) multiplayer
- Aesthetic

Games that Worked: 2048 (2014)

- Intuitive
- Elegant
- Great for ignoring lectures
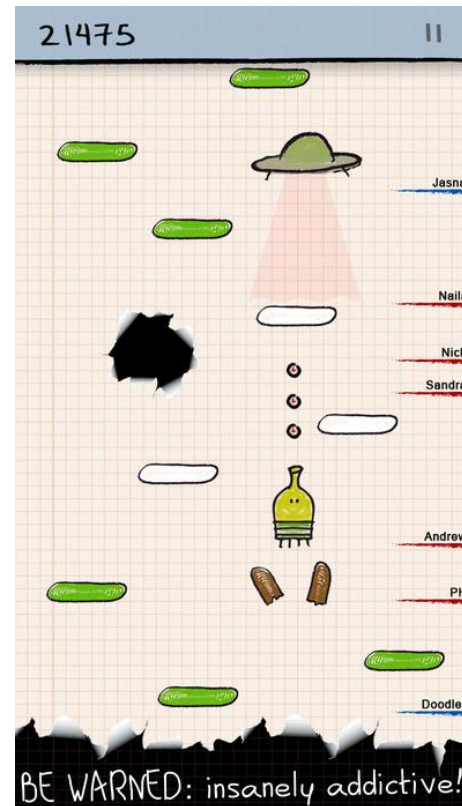- Easy to learn, hard to master

Games that Worked: Candy Crush Saga (2012)

- Wildly popular
- Incredibly addictive
- Casual, match-3 style game
- Remarkable depth

Games that Worked: Doodle Jump (2009)

- You jump on platforms
- Tilt your device to change trajectory
- Don't die
- Solid aesthetic

Games that Worked: Super Hexagon (2012)

- Dead simple
- Aesthetically pleasing
- Easy to learn, hard to master

Games that Worked: Doodle God (2010)

- Combine elements to make new elements
- "Catch 'em all"
- Simple at first, and then more challenging
- Pleasant to look at

Games that Worked: Kingdom Rush (2011)

- Gamechanger for tower defense genre
- Lots of moving parts, but each part was simple
- Addictive (and fast) gameplay

Games that Worked: Pokémon Red & Blue (1996)

- FUCK
- So good
- Catch 'em all
- Simple gameplay (your 8-year-old cousin can beat it)
- Easy to pause and come back to later
- **Aesthetics**

Games that Worked: Tetris (1984ish)

- Controls were simple
- Obvious what your job is
  - line up blocks and *poof* they vanish
- Pleasant theme music
  - Tetris A is a Russian folk song
- Nothing unsavory about it

The Future of Handhelds

- Pokémon Go was an alright game
- VR?
- Battery Life
- The Nintendo Switch

Questions?