Class #1:

Overview
Class is completely full

- Programmers: very long waitlist
- Designers: shorter waitlist
Course Staff

Instructor: Erik Andersen
Primary TA: Rundong Wu
TA: Zikai Wen
Today

- Why should you take this class?
- How is this class structured?
- How will you be evaluated?
- What are the first assignments?
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Why should you take this class?

real-world impact, *this semester*
You

Your teammates
Releases

facebook

NEWGROUNDS

KONGREGATE
**Thermo**

Puzzle Platform

A unique water-based puzzle platformer where you must use...

**Box!**

Puzzle Box Block

Build, break, and twist your way to victory in this mind-...

**That's How We Roll**

Action Cute Gravity

That's How We Roll is a fast-paced adventure-platformer g...
It's the classic story. Boy goes adventuring, boy gets trapped in a cube (nevermind how), boy faces danger and must use his wits and never-ending supply of crates to escape. Though really it's your cleverness that is needed to get the boy out in Box! an interesting and engaging puzzle platform game created by Jeremy Cytryn, Renchu Song, Sam Chen and Will Peck, with art by Kevin Ma and Natalie Diebold, and music from Brigid Choi. Use the [arrow] keys to walk and jump. Press [space bar] to deploy a box in the direction you are facing, and again to destroy a box you are looking at, including ones above and below you. Use [WASD] to look around the corners of the cube to see what's ahead, or to make sure you won't die a fiery death if you drop down.

In water, heat rises and cold sinks. That's the premise behind Thermo, the temperate and mercurial new platformer by Andrew Wolfers, Daniel Carpenter, Grace Ren, Joel Gross, Kelvin Jin, and Robyn Nason. (Did I leave anybody out?) In each of the 30 levels you need to first open the exit portal and then get to it... somehow! The activator and portals aren't necessarily where you can get to them, and that's where water comes in. Floating masses of water are strategically-placed throughout the levels allowing you to use your special abilities, if you have them. Passing between red contacts heats you up, enabling you to rise if you start out in water. You'll continue to rise until you hit an overhead surface at which point you'll fall just as you ordinarily would, though you can steer your descent. Blue contacts let you create an ice platform under you while in water. Yellow contacts enhance either ability... you can create up to three ice platforms in water if you're cold, and walk on the ceiling if you're hot! Dull grey contacts return your temperature to normal, but leave any platforms or ceiling-walking abilities if they're active.
2014 and 2015: Application Survey

- Boxi [Link]
- The Butterfly Effect [Link]
- Clone Combat [Link]
- Epic's Epic Epic [Link]
- Gravity [Link]
- Lightmare [Link]
- Nameless Tactics [Link]
- Pew Pew Spooky Tower [Link]
- Pyrokid [Link]
- Sleep Fighter [Link]
- That's How We Roll [Link]
- Thermo [Link]
- The Triplicates [Link]
- Unbalanced [Link]
- Zombify [Link]
2014 and 2015 totaled:

350,000 people
Hello Worlds!
Hello Worlds!

1.5 million people
The internet is cruel…

“Fez rip off”

“graphics are ugly and too pixelated”

“stupid controls make the game stupid”

“shitty dev should know better”

“I have to say, this is an incredibly amateurish mistake”
“i hope you’re happy…. you made a game soo good i ignored my important english paper all day just to play it… I hope you’re proud of yourself =p 5/5”
Why should you take this class?

- real-world impact
- data-driven design
The designer’s dilemma

- No $5
- No fame
- Lots of fame

1 hour 10 hours 100 hours
Minecraft
The $2.5 billion design iteration

Infiniminer  Minecraft
Game Design Workflow

game designers → game → playtesters

Game Designers create a game, which is then played by playtesters.
Microsoft In-house Playtesting
Game Design Workflow

the world

data

game designers

game

playtesters
10,000 *League of Legends* Players

**Source:** New York Times, Tom Giratikanon, Jon Huang, Jeremy White
Heatmap of Deaths
Heatmap of Crashes

Source: Georg Zoeller, “Game Development Telemetry” GDC 2010
Crash Meter

Source: Georg Zoeller, “Game Development Telemetry” GDC 2010
Analytics in this class

gdiac.cs.cornell.edu
Friction points

Source: Zombify, 2014
Friction points

Source: *Sleep Fighter*, 2014
Improvement across releases

Average Playtime Per Player

- Friends: 93.5106383
- Newgrounds: 157.3775982
- Kongregate: 284.0444357

Source: Sleep Fighter, 2014
Improvement across releases

Source: *That’s How We Roll*, 2014
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Course Website

- Syllabus information is here
- Should be up-to-date within a 2-week horizon
- Check with me about dates further in the future
Topic: Learner-centered Design

Learning Pace

Source: Piotr Bugno  https://www.behance.net/gallery/4434779/Portal-2-timelines
Topic: Internet Telemetry

User 1

- Session 1
  - Task 1: Action 1, Action 2, Action 3
  - Task 2: Action 1, Action 2
  - Task 3
  - Task 4: Action 1
  - Task 5: Action 1, Action 2

User 2

- Session 1
  - Task 1: Action 1
Topic: Online Experimentation

Hello Worlds

Refraction
With audio, engagement...

A) increased
B) decreased
C) increased AND decreased
D) didn’t change
With audio, engagement...

A) increased
B) decreased
C) increased AND decreased
D) didn’t change
Topic: Statistical Analysis
Topic: Visual Data Mining
Topic: Games with a Purpose
Game Requirements

• Web game
• Fun
• Novel
• Feasible
• Single-player
Adobe Flash, 1996 - 2020
Game Requirements

- Deploy to Newgrounds and Kongregate
- In Haxe, HTML5, or Unity
- HaxeDevelop is a great free IDE for Haxe
- See website for help and resources
2-week Development Cycles

- **Release / In-class playtesting**
- **Postmortem report**
- **Revise plan**
- **Meet with TAs**
## Semester Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Task</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Form Groups</td>
<td>8/21</td>
</tr>
<tr>
<td>Week 2</td>
<td><strong>Paper Prototyping</strong></td>
<td>8/28</td>
</tr>
<tr>
<td>Week 3</td>
<td><strong>Design Document</strong></td>
<td>9/4</td>
</tr>
<tr>
<td>Week 4</td>
<td><strong>Throwaway Prototype</strong></td>
<td>9/11</td>
</tr>
<tr>
<td>Week 5</td>
<td>Development</td>
<td>9/18</td>
</tr>
<tr>
<td>Week 6</td>
<td><strong>Alpha Prototype</strong></td>
<td>9/25</td>
</tr>
<tr>
<td>Week 7</td>
<td>Development</td>
<td>10/2</td>
</tr>
<tr>
<td>Week 8</td>
<td><strong>Beta Prototype</strong></td>
<td>10/9</td>
</tr>
<tr>
<td>Week 9</td>
<td>Development</td>
<td>10/16</td>
</tr>
<tr>
<td>Week 10</td>
<td><strong>Friends Release</strong></td>
<td>10/23</td>
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</table>
# Semester Schedule

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<th>Week</th>
<th>Event</th>
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<tr>
<td>Week 10</td>
<td>Friends Release</td>
<td>10/23</td>
</tr>
<tr>
<td>Week 11</td>
<td>Friends Postmortem Report</td>
<td>10/30</td>
</tr>
<tr>
<td>Week 12</td>
<td>Newgrounds Release</td>
<td>11/6</td>
</tr>
<tr>
<td>Week 13</td>
<td>Newgrounds Postmortem Report</td>
<td>11/13</td>
</tr>
<tr>
<td>Week 14</td>
<td>Thanksgiving</td>
<td>11/20</td>
</tr>
<tr>
<td>Week 15</td>
<td>Kongregate Release</td>
<td>11/27</td>
</tr>
<tr>
<td>Week 16</td>
<td>Final Postmortem Report</td>
<td>12/9</td>
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Grading

- Game (60%)
  - Newgrounds Release (20%)
  - Kongregate Release (40%)
- Analytics (30%)
  - Friends Postmortem Report (5%)
  - Newgrounds Postmortem Report (10%)
  - Final Postmortem Report (15%)
- Participation (10%)
  - Attendance, other submissions (10%)
Game grades

- Opinion of the course staff
  - does it meet the requirements?
  - is it fun? groundbreaking?
- Evidence of real-world impact
  - rating
  - number of players
  - average length of play
  - return rate
  - other impact (comments, walkthroughs, blog posts)
<table>
<thead>
<tr>
<th>Grade</th>
<th>Characteristics</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>experience of a lifetime</td>
<td>is featured, wins prizes, game of the week/month/year, hundreds of thousands of players</td>
</tr>
<tr>
<td>A-/A</td>
<td>very fun, addictive, imaginative, polished</td>
<td>gets to front page, attracts external attention, tens of thousands of players</td>
</tr>
<tr>
<td>B/B+</td>
<td>sometimes fun, but lacks polish, minor flaws</td>
<td>good but not a standout, thousands of players</td>
</tr>
<tr>
<td>Grade</td>
<td>Characteristics</td>
<td>Impact</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>--------</td>
</tr>
<tr>
<td>C+/B-</td>
<td>complete and playable, but fun only occasionally, not original, clearly flawed, team ignored feedback</td>
<td>average, hundreds of players</td>
</tr>
<tr>
<td>C-/C</td>
<td>complete, but not playable, not fun, crashes</td>
<td>low, tens of players</td>
</tr>
<tr>
<td>F/D</td>
<td>incomplete</td>
<td>ones of players</td>
</tr>
</tbody>
</table>
Analytics grades (reports)

- Does it meet the requirements?
- Are claims well-justified?
- Are there *awesome* charts and graphs?
Grading Process

Group grade \[\text{individual modifiers}\] Individual grade
Individual modifiers

- Based on **peer evaluations and observations of course staff**
- Two peer evaluations: middle and end of course
  - Being MVP will increase grade
  - Slacking off will decrease grade
  - Abandoning team will result in C/D/F
Attendance

- Expected on *all* days
- Attendance taken on *playtesting* days:
  1. Paper
  2. Throwaway
  3. Alpha
  4. Beta
  5. Friends
  6. Newgrounds
  7. Kongregate
Please Drop Responsibly

You

Your teammates

operating systems
Work *outside* of class, per week

- 2-4 hours: 2%
- 5-8 hours: 20%
- 9-15 hours: 60%
- 16+ hours: 18%

Source: 2014 and 2015 course evaluations
Releases are particularly intense

- Players come in a burst
- If something goes wrong, you must deal with it immediately
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Assignment 1: Updated Preferences

- Your name
- Updated list of people you wish to work with
- Programmers: preferred programming language
- Designers: preferred design contributions
- Any other information you would like us to consider

Due: **TODAY**, Aug. 23\textsuperscript{rd}, 11:59pm via CMS
Assignments 2 & 3: Paper Prototypes

- NOT GRADED!
- Will have Monday’s class to work on this

Prototype #1
- due Wed 8/30 (11:00am)
- (submit a picture)

Prototype #2
- due Fri 8/1 (11:00am)
- (submit a picture)

Zombify, 2014
<table>
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<th>Wed</th>
<th>Fri</th>
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<tr>
<td>8/28</td>
<td>8/23 Overview</td>
<td>8/25 Mechanics and Prototyping</td>
</tr>
<tr>
<td>In-class Brainstorming</td>
<td>8/30 Paper Prototyping 1</td>
<td>9/1 Paper Prototyping 2</td>
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Pair Activity