CS/INFO 4154: Analytics-driven Game Design

Class 27:

A/B Testing: Logistics
10/29
A/B Testing Logistics

10/31
A/B Testing Analysis

11/2
Revenue

11/5
Pokémon GO

11/7
?

11/9
Newgrounds Release

by 10:10am: Upload Game to CMS

11/12
Newgrounds Release 2

11/14
Newgrounds Release 3

11/16
Newgrounds Release 4

by 2pm: Newgrounds Release Report
Outline

- Releasing on Newgrounds
- Industry A/B testing example
- A/B testing in this class
- A/B testing activity
Outline

- Releasing on Newgrounds
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Newgrounds

- Founded 1995
- Variety of content
  - games
  - movies
  - art
  - music

Tom Fulp
Viral videos

Gangnam Style
Viral videos from Newgrounds

Badger Badger Badger

Numa Numa Dance
Newgrounds Game Life Cycle

1-24 hours → Under Judgment
The games and movies on this page are under judgment and you control their fate.

Your votes will determine whether a submission is blammed (deleted forever) or saved (added to the site).

It's common to discover awesome stuff here before anyone else has seen it, but be aware that you may come across some unsavory content as well. This is the price we pay for having a community-driven approval process for newly added content.

If you come across illegal or stolen material be sure to flag it.

You will earn blam and save points by voting on the submissions listed here, depending on how you vote. For more about blam and save points, whistle status, and other stats visit the User Account Wiki Article.

With apologies to Captain Planet.

<table>
<thead>
<tr>
<th>Under Judgment Games</th>
<th>Under Judgment Game</th>
<th>Under Judgment Game</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>30 Years of Nintendon't</strong> by drludos</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>Genesis does what Nintendon't - for 30 years!</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cuddles Dress Up</strong> by Num-Kirby</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>This i make happy tree friends cuddles dress up.</td>
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</tr>
<tr>
<td><strong>Toxic Wasteland</strong> by PixelDamage</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>Defend your base against the waves of enemies</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Memz Simulator Simple</strong> by SkeletonGuyYT</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>A simple MEMZ sim.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HoldUp the halloween Pumpkin</strong> by ATOZONLINEGAMES</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>In this Halloween Pumpkin game, you have to Click the Pumpkin and hold it in the air as mu</td>
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</tr>
<tr>
<td><strong>ELECTROSOCK</strong> by omarinc</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
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<tr>
<td>Oparin</td>
<td></td>
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</tr>
<tr>
<td><strong>Las aventuras de Viernes</strong> by EuniceJuarez</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>Las aventuras de viernes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tec in the Wes</strong> by andrew65952</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>Welcome to the Futuristic Wild Wes!</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solar Spin</strong> by zorbslayer</td>
<td>T (Ages 13+)</td>
<td>(Everyone)</td>
</tr>
<tr>
<td>The Earth is on a road trip! Pilot your planet as far as possibe!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Newgrounds Game Life Cycle

1-24 hours → Under Judgment

1 day → New Games List
Newgrounds Game Life Cycle

1-24 hours: Under Judgment

1 day: New Games List

1 day: P-Bot’s Pick

Gathering Dust
Newgrounds Game Life Cycle

1-24 hours: Under Judgment

1 day: New Games List

1 day: P-Bot’s Pick

3-7 days: Featured Games

Gathering Dust
2015

Featured Games

- Fleeing the Complex by PuffballsUnited
- Swords and Souls by SoulGame
- Spider: Downloaded by Sakupen
- Bullet Heaven 2 by matl-likes-swords
- Idle Sword by laFunk
- You Are The Victim by Alon-Tzarafi
- Unbalanced by dpkgamer
- Clone Combat by maxmcc
- Undead Clicker: Tapping... by socialinus
- Gods Of Arena by IrySoft
- Galaxy Siege 3 by derinalolich
- Defuse it! by jakub89
2017

Featured Games

- Aground davidmalotz
- Midget Mager ryogo
- Kirigami lidavidmr
- BuzzKill morningtoast
- Tower of Tune ReidWade
- Direkt PaulDeVito
- Revenge of The Kid danishgoel
- Wondrous Lands DLord2
- Zombidle BerzerkStudio
- The Zombie Food Truck team-tzft
- Crypt Shyfter: Exile KungFuSpace&Barbanan
- Short and Sweet sour-apple-studios
2017

Let's celebrate all these musical updates with a musical game!

Tower of Tune
Help Tempo ascend the Tower of Tune in this mind-bending puzzle game!
newgrounds.com
Newgrounds Game Life Cycle

1-24 hours
- Under Judgment

1 day
- New Games List

1 day
- P-Bot’s Pick

3-7 days
- Featured Games

Gathering Dust
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GSN Games: Video Bingo

GSN Games: Video Bingo
GSN Games: Video Bingo

-50%  -25%  +0%  +25%  +50%
GSN Games: Video Bingo

-50%  -25%  +0%  +25%  +50%

GSN Games: Video Bingo

Revenue +13.9%

GSN Games: Video Bingo

Choose your numbers

-50%  -25%  +0%  +25%  +50%
GSN Games: Video Bingo

Revenue +11%

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Logistics: dividing players

Players

Condition 1

Condition 2
Logistics: returning players

Player 2143

Condition 1

Player 2143

Condition 1
A/B testing in this class

- Logging instructions posted to Piazza
- Two functions:
  - assignABTestingValue
  - recordABTestingValue
- **Must call both for the system to work properly**
assignABTestingValue

- **Goals:**
  - Set new condition for new players
  - Loads existing condition for returning players
- Single parameter: *proposed* condition (integer)

```javascript
logging.initialize(989, 2, false);
// Arbitrarily, we've assigned cat = 1, dog = 2, and fish = 3
var abTestValue = logging.assignABTestValue(random(1, 3)); // Assume random(low, high) gives a number between low and high inclusive
logging.recordABTestValue(); // Sends the A/B test value to the server

// Some function calls later

// Load sprite based on abTestValue
if (abTestValue == 1) {
    player.loadSprite("cat");
} else if (abTestValue == 2) {
    player.loadSprite("dog");
} else {
    player.loadSprite("fish");
}
```
**recordABTestingValue**

- Communicates A/B testing value to server
- *Should call once every play session*

```javascript
logging.initialize(989, 2, false);
// Arbitrarily, we've assigned cat = 1, dog = 2, and fish = 3
var abTestValue = logging.assignABTestValue(random(1, 3)); // Assume random(low, high) gives a number between low and high inclusive
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// Load sprite based on abTestValue
if (abTestValue == 1) {
    player.loadSprite("cat");
} else if (abTestValue == 2) {
    player.loadSprite("dog");
} else {
    player.loadSprite("fish");
}
```
Assignment of players

- Should assign 50% of players to each condition
  - Maximizes chance of statistical significance
mysql> DESCRIBE team_AAA_abtest;
+---------+-------------+------+-----+---------+-------+
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Null</th>
<th>Key</th>
<th>Default</th>
<th>Extra</th>
</tr>
</thead>
</table>
+---------+-------------+------+-----+---------+-------+
| user_id | varchar(40) | YES  |     | NULL    |       |
| game_id | int(11)     | YES  |     | NULL    |       |
| abvalue | int(11)     | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
A/B Testing Analysis

- Suggested tool: SAS JMP (any version)
- 30-day free trial!
- We’ll use this in class on Wednesday
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What makes a good A/B test?

- explores a **fundamentally interesting** decision
- result has **real consequences** for your design
- resolves creative disagreements in the group
A/B testing activity

- Brainstorm 5 possible A/B tests
  - what are the two *conditions* (exactly)?
  - what is your *hypothesis*? which condition will do better?
  - what do you need to *measure*?
    - time played and progress, obviously, but anything else?
    - button presses? clicks? etc.