Game Design for Engineers

Alex Kerfoot
Software Engineer
EA/Maxis
Spore
Not about “How to break into the games industry”

• Plenty of resources for that
  – Work hard
  – Internship
  – Promote yourself (but be humble)
  – Network

• Getting a job is a one-time event
What this talk is about

• What you should know after you get a job
• What engineers should know about design
• How to gain credibility as a designer
• Tips for final project
Disclaimer

NOT A DOCTOR
Different types of designers

• High concept guy, Visionary
• Lead Designer
• Designers
• Level designers
• Writers
Design Hierarchy

Executives/Publishers
Design Hierarchy

Executives/Publishers

Lead Producer
Design Hierarchy

- Executives/Publishers
- Lead Producer
- Lead Designer
Design Hierarchy

Executives/Publishers

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Lead Designer

Designers

Engineers
Design Hierarchy

Executives/Publishers

Lead Producer

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Producers

Designers

Engineers
Design Hierarchy

Executives/Publishers

Lead Producer

Lead Designer

Producers

Marketing Director

Designers

Engineers
Design Hierarchy

Executives/Publishers

Lead Producer

Producers

Marketing Director

Lead Designer

Designers

Box Artist

Engineers
So, where do you have input?

- Feature level
- Miyamoto:
  - “Programmers should understand the goal, and help find the answer. The designer’s job should be to set the problem, and work with the programmer to try and solve it.”
- Support your arguments
- Give feedback early and often
- Be nice!
Building Credibility

• Know your craft
• Know your medium
• Know your history
• Know your engineering
• Know lots of other stuff
• Know your industry and economics
Know your craft

• Play lots of games (especially bad ones)
• Gamefly
• Take notes
• Find good things in bad games (-Alex Hutchinson)
Know your medium

- FILMVID 460 - Video Games: Form and Culture
- Understand the different aspects of games
  - Mechanics
  - Narrative
  - User Interface (controls & display)
  - Representation of space
  - Representation of time
Wario Ware Analysis
## Wario Ware Analysis

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<tr>
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"But I would no more believe that this particular notation could fully describe a game than I would believe a mass spectrometer could fully describe the Mona Lisa." - Joe Maris
Know your history

• Q: What was the first video game ever made?
Know your history

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• A: It depends!
Know your history

• Q: What was the first video game ever made?
• A: It depends!
• Space War!, Atari, Odyssey, Amiga, Commodore 64, Nintendo, Tetris, etc.
• Hardware crash, Software crash
• Why did these companies (and products) fail, succeed, and/or change the industry.
Know your engineering

- Object Oriented Design
- Human/Computer Interface
- Concurrency
- Software Engineering
Know lots of other stuff

• 3D Modeling (from Art School)
• Music theory
• Take Social Science and Humanities classes
  – Literature
  – Philosophy
  – Psychology
  – Sociology
  – Anthropology
  – Women’s Studies?
Building Credibility

- Work with feature designers
- Talk to designers
- Learn to take criticism
  - Design is not measurable
  - Don’t take things personally
  - Fail early
- As you gain credibility, your input will increase
Advice for Final Game Project

• Innovation
• General purpose design tips
• Inspiration
But first... where’s my Soapbox?

- Don’t try to make Starcraft
- Be innovative
- Realistic scope
Inspiration

• WSoft 48-hour game competition
• Independent Games Festival
• Manifesto Games
• Newgrounds
• Jayisgames.com
• Eyezmaze.com
• jenovachen.com/flowingames/
top rated games

- **Attack of the Killer**
  - Swarm
  - kylegabler

- **Tower of Goo**
  - Tower of Goo!: UNLIMITED!
  - kylegabler

- **Child Eater**
  - KyleGay

- **On a Rainy Day**
  - shalinshodhan

- **Big Vine**
  - kylegabler

- **String Theory**
  - dcover

- **EGP COMP 2 String Theory**
  - dcover

- **Troy**
  - egp2
Twists on a classic

• Binaryzoo.com
"...no boring cut-scenes..."
Resources

- XNA Toolkit
- ZeniLib
- DXFramework
- Flash
Where to start

• Mechanics are what make the game
  – story, graphics, sound, music, AI, all come later
• First 10 seconds
  – Accessibility
  – Reward system (Mario)
• First 15 minutes
• No one ever reads instructions, EVER
General Design Advice

• HCI and consistency
• Turn weaknesses into strengths
• Fake everything
• Don't simulate anything on a level lower than is visible to the player
  – Fun vs. Realism
  – Don't forget consistency, though
• Game design, much like game programming, is fractal.
Cliches, archetypes, and consistency

- Cliché: Put items in crates
  - *Start-to-Crate*
- Archetype: Platforms with pit in-between
- Cliches should be avoided, but make sure not to violate archetypes.
  - If you have breakable crates in your game, MAKE THEM CONTAIN ITEMS!
Consistency

- Player builds a mental model
- Fills in more details as they play
- Don’t invalidate the earlier models
Smart People

• Chris Crawford
• Hideo Kojima
• Sid Meier
• Shigeru Miyamoto
• Warren Spector
• Will Wright
akerfoot@maxis.com