

# Game Creation Process

CMPUT 299

Winter 2006

*Thursday January 12*

## Overview

- Making a computer game is a lengthy process, involving many creative people
  - High-profile productions often take 2-3 years
  - Challenging games can involve > 100 people!
- This lecture discusses:
  - The process of creating a game
  - The people involved in the process

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## The Creative Process Designer's Point of View

- |                    |                    |
|--------------------|--------------------|
| ▪ Great idea       | ▪ Post-prototyping |
| ▪ Shape idea       | ▪ Build production |
| ▪ Concept document | ▪ Post-production  |
| ▪ Design document  | ▪ Testing          |
| ▪ Build prototype  | ▪ Retail           |

Many of these steps are iterative

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## The Publisher's Point of View

- Most games companies do not sell their own products – need to go through a publisher
  - The publisher contributes...
    - Market intuition
    - Quality assurance
    - Marketing
    - Shelf space in retail stores
- ... in return for veto power and a hefty share of the sales ☹

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## The Creative Process Publisher's Point of View

- Assess the great idea – and possibly veto the project
  - Game creator likely has one chance to sell the idea
  - Five minutes to impress people
- Assess the prototype – and possibly veto it
- Assess the production – and possibly veto it
- Quality assurance
  - Test it as best as you can (i.e., up to a fixed budget) to ensure quality
- Marketing and sales

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## The Great Idea

- Come up with a great idea
- Do research to find out whether it has been done before
  - If not, why not? Is it feasible?
  - If so, how can it be improved?
- Get feedback from other designers/players
  - Get constructive criticism
  - It's not possible to please everyone all the time



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## Warehouse Man (1)

I've got a great idea! I want a character to push boxes around in a room. From the starting configuration of boxes, the man has to push the boxes into a final configuration. The man can only push a box, never pull.

Cool, eh?



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## Game Creators

- Shigeru Miyamoto
  - Donkey Kong
  - Mario Brothers
  - Legend of Zelda
- Will Wright
  - SimCity, SimEarth, ...
  - The Sims
  - Spore



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## Shaping the Idea (1)

- If the idea seems to be worth investing more time in, prepare an overview document stating:
  - The target audience
  - The core objective of the game
  - A list of challenges that the player will face
  - How the player will control the game
  - Unique features of the game

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## Shaping the Idea (2)

- Present the idea at an initial meeting with other team members
  - Include the technical director, lead programmer, art director, lead artist, other designers, etc.
  - Discuss technical and artistic constraints
  - Get more ideas from team members
- At this stage the idea might be dropped if no one likes it, or if it appears that the technical and/or financial hurdles are too great

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## Warehouse Man (2)

- Audience: people who like to solve puzzles
- Objective: to solve the puzzles, optionally to solve them in as few moves as possible
- Challenges: a bad move could lead to a state which is unsolvable; solutions could be very long (frustrating!?) and intricate (beautiful!)
- Control: up/down/left/right movements
- Unique: new idea for a “simple” problem that gives rise to extraordinary complexity



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6	1	4	5
8	3	5	6
2	4	7	1
8	6	7	3
7	9	1	4
5	7	6	9
4	5	8	7

## Design Document

- If the concept is approved, work will commence on the design document
- The document takes typically 4 – 6 months to produce
- It is the project bible – all design decisions are detailed
- The document contains highly detailed technical information (it is *not* a marketing document)
- The document is updated as the design evolves
- Team members need only view the aspect of the document which is relevant to them (so it has to be well structured)

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## Warehouse Man (3)

- Theme (warehouse isn't exciting)
  - Need a theme for the graphics: warehouse man, boxes, target locations, empty locations, walls, etc.
  - Music?
- Game play
  - Graduated levels of difficulty
  - Who is going to design warehouse layouts (not trivial)?
- Features
  - Include a solver?
  - Include tools for users to create their own puzzles?

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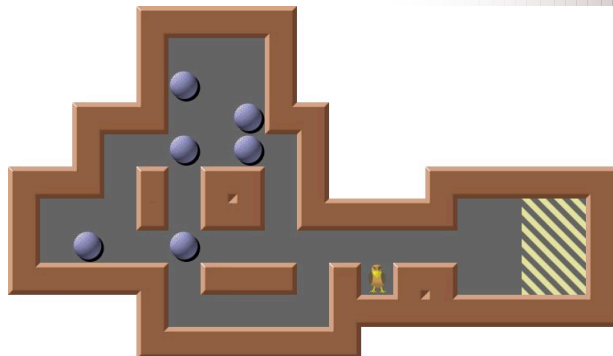
## Prototyping

A prototype is a low risk way of testing out initial ideas for a software product:

- Scope out new technology:  
What is feasible? What is hard?
- Prove the concept
- Demonstrate game play and some initial challenges
- Demonstrate the art style
- Define a production schedule
- Reduce the risk of spiralling budgets
- Motivate team members

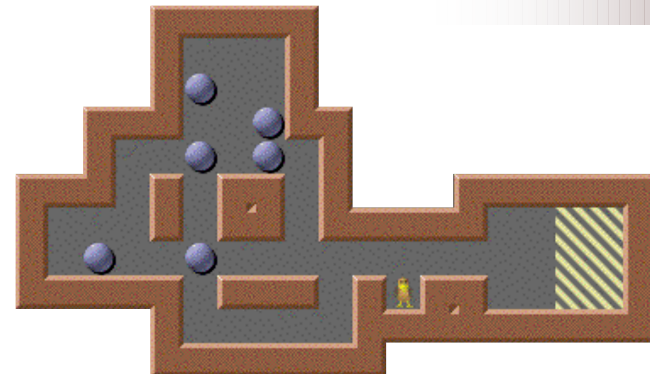
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## Warehouse Man (4a)



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## Warehouse Man (4b)



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## Post-Prototyping

- Post prototyping is a period of reflection after the initial prototype is created
- The prototype is focus tested by members of the target user group
- Any problems which are highlighted by user testing should be solved before commencing
- If the prototype is totally unsuitable for the target audience, the project may finish here

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## Warehouse Man (5)

- Need a better name...
  - Japanese name for a warehouse man is “Sokoban”
  - Interesting, exotic, catchy
- Need to commit to a theme

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## Sokoban (1)



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## Production

- Level design, art work, scripts are developed
- Throughout this stage the game should be regularly tested and balanced for game play
- Team members may have an intense workload and work long hours
- Projects can still be cancelled at this stage!

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## Sokoban (2)

- We now have a working program!
- Is it fun?
- How can we improve it?
- Need a name... how about... **Sloppy Sokoban**
- [Play Sloppy Sokoban!](#)

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## Post-Production

In the post production phase, the game is edited to make sure it is the highest quality product possible.

- As with movies, improving the game might mean cutting large sections of it
- It can seem demoralising to discard lovingly crafted art work, levels or scripts, but sometimes it is necessary to improve the game play

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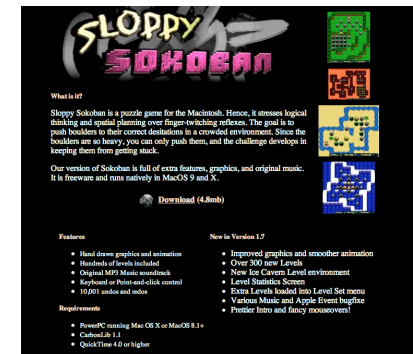
## Testing

- Companies have their own “quality assurance” team, they contract it out, or it is part of their publisher’s agreement
- Extensive testing for bugs, aesthetics, user interface issues, game balance, etc.
- Bugs still escape into the wild, and the game company may have to release periodic updates

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## Retail

- Prepare to be meet the press ☺
- Watch sales roll in



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# Sleep!



Start work on the next game...

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## CMPUT 299 Project

- Great idea
- Shape idea
- Concept document
- Design document
- Build prototype
- Post-prototyping
- Build production
- Post-production
- Testing
- ~~Retail~~

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## Who Works in the Game Industry?

The development team consists of:

- Producers
- Designers
- Artists
- Programmers
- Numerous other talented people

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## \$\$\$ and Sense

- The cost of developing a marquee game is growing; \$20 million US is not unheard of
- The industry is being dominated by big studios
- Where does all the money go?
- It is still possible for a small team to create a hit game for handheld devices (e.g., cell phones)

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## Producers

- Producer
  - Manages a single game project
  - Ensures project is delivered on time
  - Ensures that the project is delivered within budget
  - Ensures quality
- Associate producer
  - Support the producer
  - Documents the development process
  - Organises research activities such as play testing and product comparison

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## Designers

- Lead game designer
  - Optional: Game designers
- Lead level designer
  - Optional: Level designers / world builders
- Interface designer

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## Lead Game Designer

- The visionary – has an overall view of the game
- Must be able to communicate and present ideas
- Creative and imaginative
- Technically savvy
- Artistically astute
- A good writer
- Must have passion for the game!

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## Game Designer Responsibilities

- Give input on game design issues
- Propose game play ideas
- Build and test scenarios/missions
- Test and balance game play parameters
- Test the usability of the interface
- Update the game design document regularly

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## Level Designers Responsibilities

- Design detailed levels
- Designs and implements game content
- Evaluates levels of bugs, playability, fun

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## Interface Designers - responsibilities

- Understand the target audience
- Ensure the UI design meets the audience needs
- Oversee the development of the UI
- Create and maintain art assets for the UI
- Seek feedback from art director on style and mood
- Coordinate user testing to identify usability issues

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## Artists

- Art director
- Lead artist
- 2D/3D artists
- Texture artist
- Environment modeller
- Lead animator
- Character animator

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## Programmers

- Technology director
- Lead programmer
- Games programmer
  - Artificial intelligence
  - Audio
  - Network
  - Graphics
  - Game engine
  - Tools

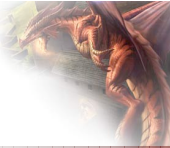
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## Other Roles

- Musicians
- Motion capture
- Lawyers
- Writers
- Computing system technical support
- ...

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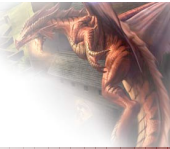
## Quality of Life (1)

In a recent survey of games developers:

- 35.2% said that during “crunch times” they work 65 – 80 hours per week
- 48% said they didn’t get paid overtime
- 44% said they could use more people or special skills on their team

Source: IGDA Quality of Life White Paper  
(<http://www.igda.org/qol/whitepaper.php>)

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## Quality of Life (2)

- What do the spouses say?
  - “You work too much” (61.5%)
  - “You are always stressed out” (43.5%)
  - “You don’t make enough money” (35.6%)

Source: IGDA Quality of Life White Paper  
(<http://www.igda.org/qol/whitepaper.php>)

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## Acknowledgments

- Judy Robertson

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