Comp 388/488 - Introduction to Game Design and Development

Spring Semester 2017 - Week 3

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Contents

Game fundamentals

creative passion

- designers, developers, and makers share many similar traits and qualities
- one unifying trait is the innate ability to access creative ability, e.g.
  - *designer may create a new scene or character rendering for the game*
  - *developer may creatively solve a challenging problem*
  - *maker may creatively build and test a prototype to a formal product...*
- each needs to be open to creative solutions

Game fundamentals

creative considerations

- some designers will focus on a single initial idea
  - *then refine and develop that kernel*
  - *consider all options and possible versions of a single idea*
- other designers may seek inspiration in books, films, and art
  - *then try to compare and contrast many ideas*
  - *until they reach the last man standing*
- life experiences provide a rich source of inspiration for game designs, e.g.
  - *childhood games, fun events...*
- childhood recollections
  - *what made us happy?*
  - *what was fun to play and complete?*
  - *what sparked excitement or piqued our interest as children?*

Game designers

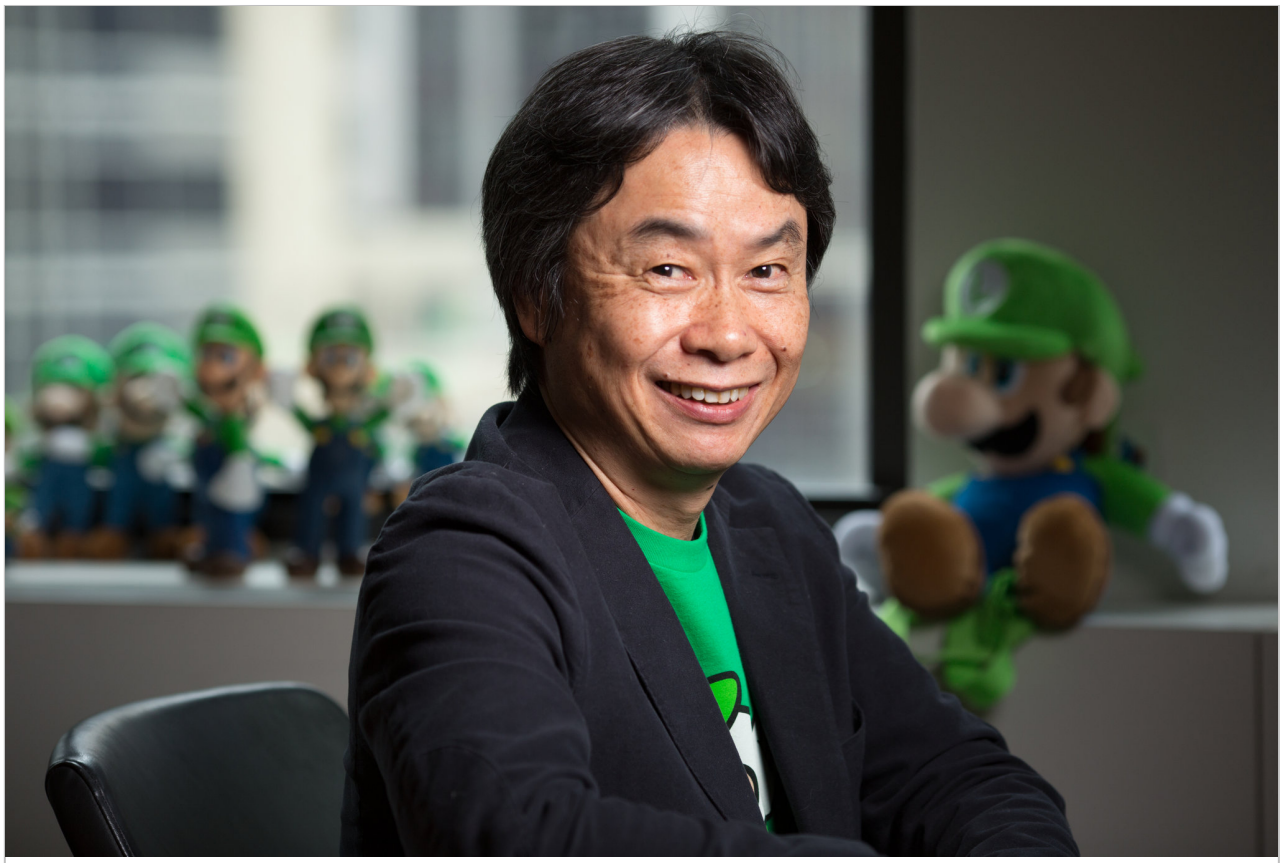
Designer example - Shigeru Miyamoto

- Shigeru Miyamoto, Nintendo
  - *regarded as one of the most important and influential game designers of all time*
  - *Wikipedia*
- games and series include:
  - *Donkey Kong*
  - *Mario*
  - *Zelda*
  - *Mario Kart*
  - *Star Fox*
  - *F-Zero*
  - *many, many more...*
  - *Wikipedia - Gameography*
- Miyamoto's games often draw from a sense of child like exploration...
- he's noted the influence of childhood on his game designs
  - *a child like perception of the world*

> "*When I traveled around the country without a map, trying to find my way, stumbling on amazing things as I went, I realised how it felt to go on an adventure like this.*"

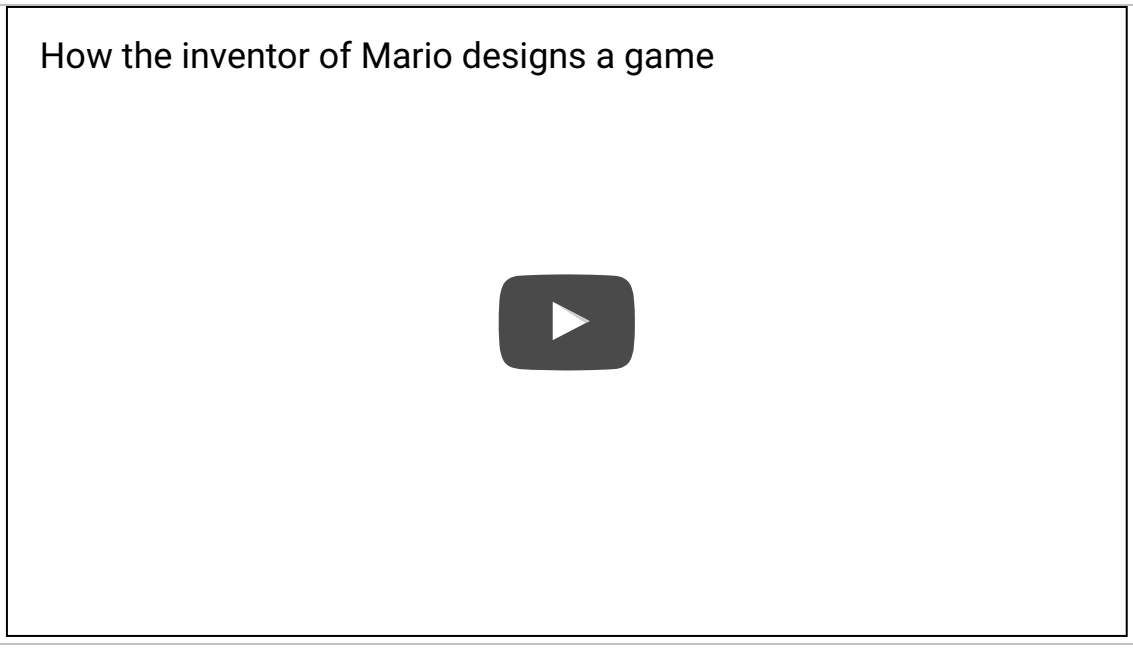
David, S. *Game Over: How Nintendo Conquered the World*. Vintage Books. New York. 1994. P.51.

Image - Games and simulations



Nintendo - Shigeru Miyamoto

Video - The Genius of Shigeru Miyamoto



Source - YouTube

Quick exercise

Mashup childhood games...playable patterns and scenarios

- a favourite board game
- skipping with a rope
- riding or racing a bike
- playing a sport
- hide and seek
- petals on a daisy
- singing rhymes
- running and jumping
- building a sand castle
- colouring books
- building a fort with boxes...
- ...

Pick combinations of the above and create games...see how far you get with these ideas

Games and playtesting

player experience goals and aims - part 1

- need to consider goals for a player's experience with our game
- commonly known as **player experience goals**
  - *goals that we may define for a player whilst testing and playing our game*
  - *not defined features of the game (specific gameplay, mechanics &c.)*
  - *consider them descriptions of interesting, useful, unique situations or scenarios*
- for example:
  - *a player may progress through a particular level*

> *a player should begin rapidly, and encounter a sense of frustration as they tackle sets of problems. As they progress from problem to problem, this frustration is replaced with a sense of achievement. Ultimately, satisfaction results as they complete the level.*

- another common example is a description of structure for a particular gaming experience, e.g.

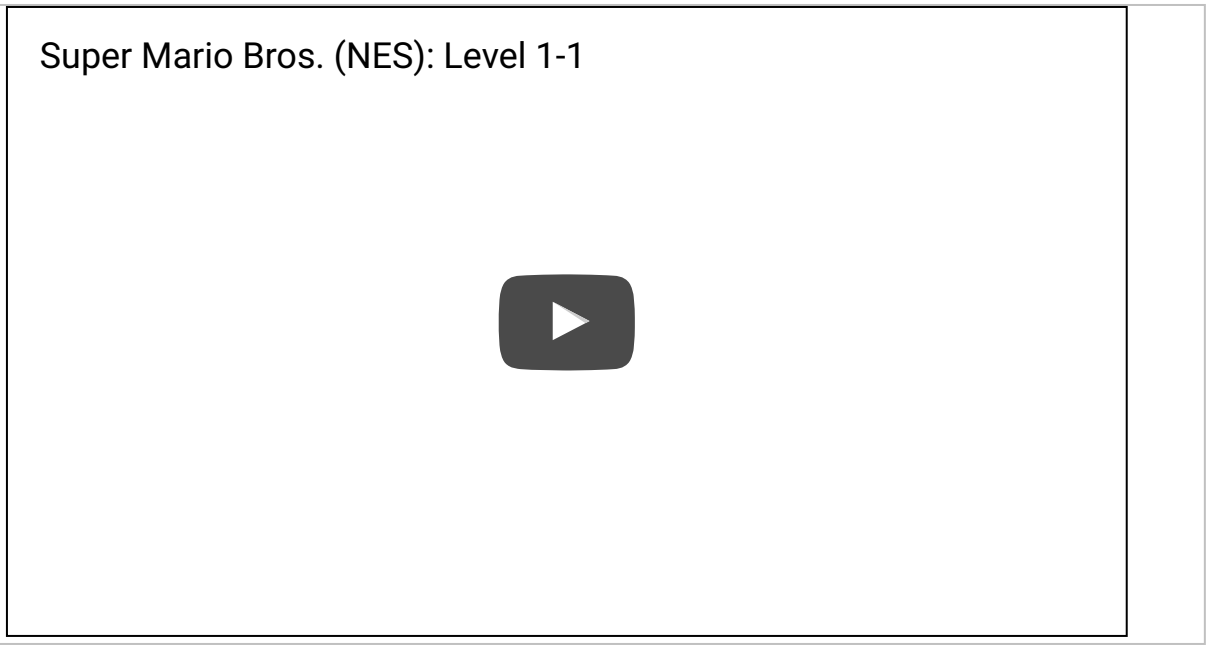
> *a player should be free to wander and experience the game at their own pace, and in their chosen order...*

Games and playtesting

player experience goals and aims - part 2

- we're trying to describe our game from the perspective of a player
  - *not as a designer and developer*
  - *e.g. what should a player expect from aspects of the game...*
- such goals also prove very useful for initial game planning
  - *plan initial design and layout...*
  - *helps prevent an initial focus on the minutiae of a game's development*
- instead, plan the game as a player
- may also use such goals later in each playtesting scenario
  - *helps correlate expected game design with playtesters' expectations*

Video - Super Mario Bros. - Level 1



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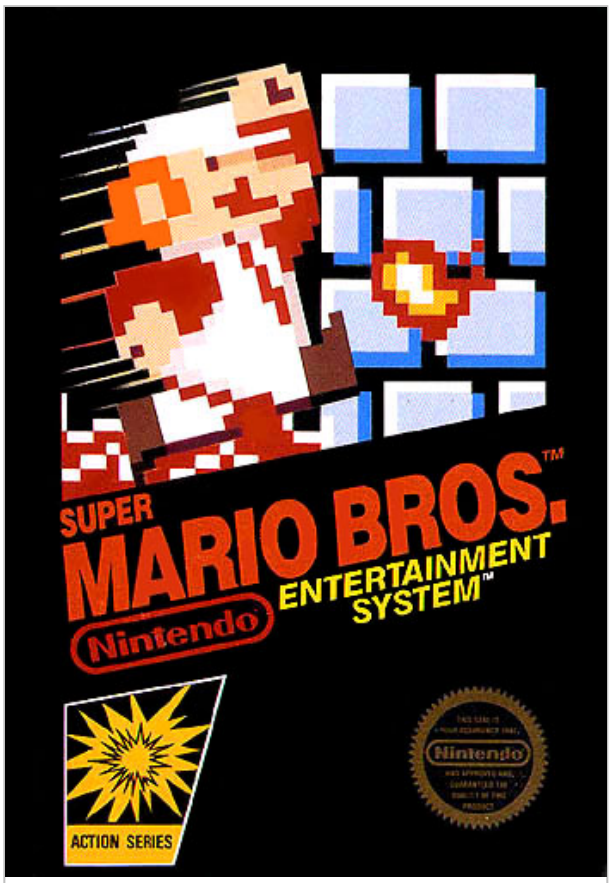
Games and playtesting

Quick exercise



Nintendo - Super Mario Bros.

- consider player experience goals for the first level of Super Mario Bros.
- outline your top three player goals for this level...
- outline your top three designer goals for this level...

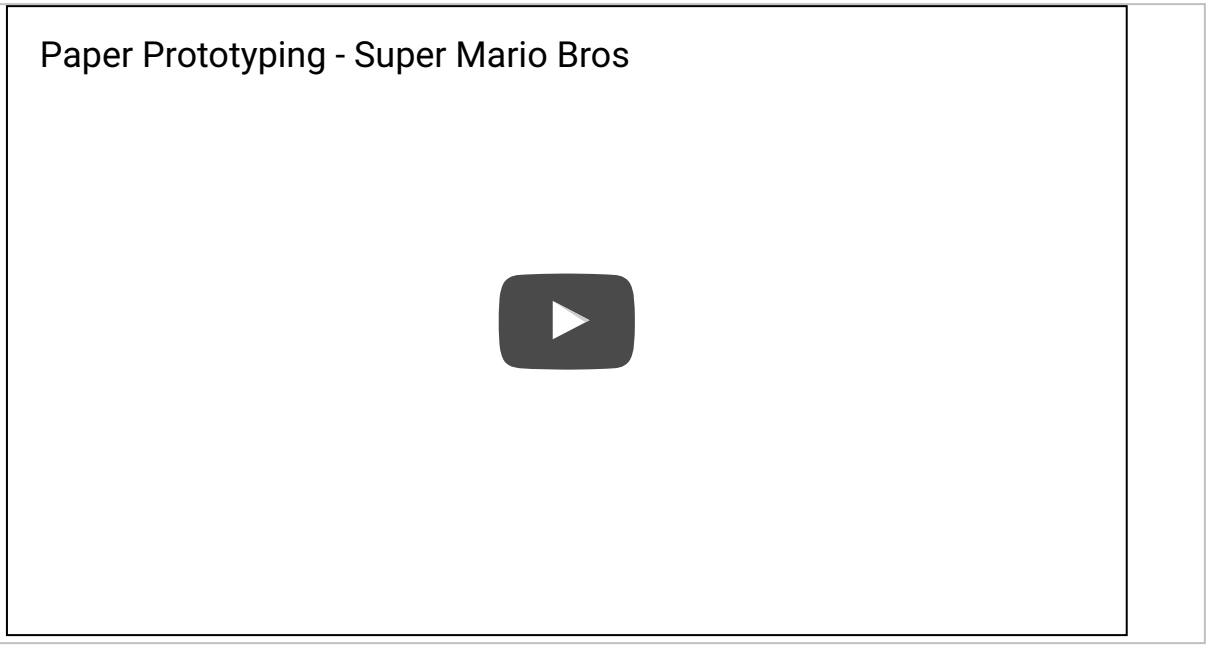
Games and playtesting

initial prototypes and playtests

- prototype and test our initial game concepts
- not necessarily digital, interactive prototype
- simply a playable version of the initial game idea
- may start with a physical prototype of game's
  - *core concepts*
  - *playable mechanics*
  - *structure*
- physical prototype is a useful option
  - *perceive, test, and demonstrate core concepts*
  - *useful before starting coding and development*
- physical prototype may use different mediums, e.g.
  - *pen, paper, cards, cardboard...*
  - *perhaps even act out parts of the game...*
- this technique helps in many respects, e.g.
  - *perfect, as far as possible, initial game model*
  - *then pass model to artists, developers, producers...*
- we're checking player experience goals
  - *ensure playtesters may achieve these goals...*

Video - Paper Prototyping

example paper prototype - initial concept 1



Source - YouTube

Video - Prototyping by Acting

Walt Disney

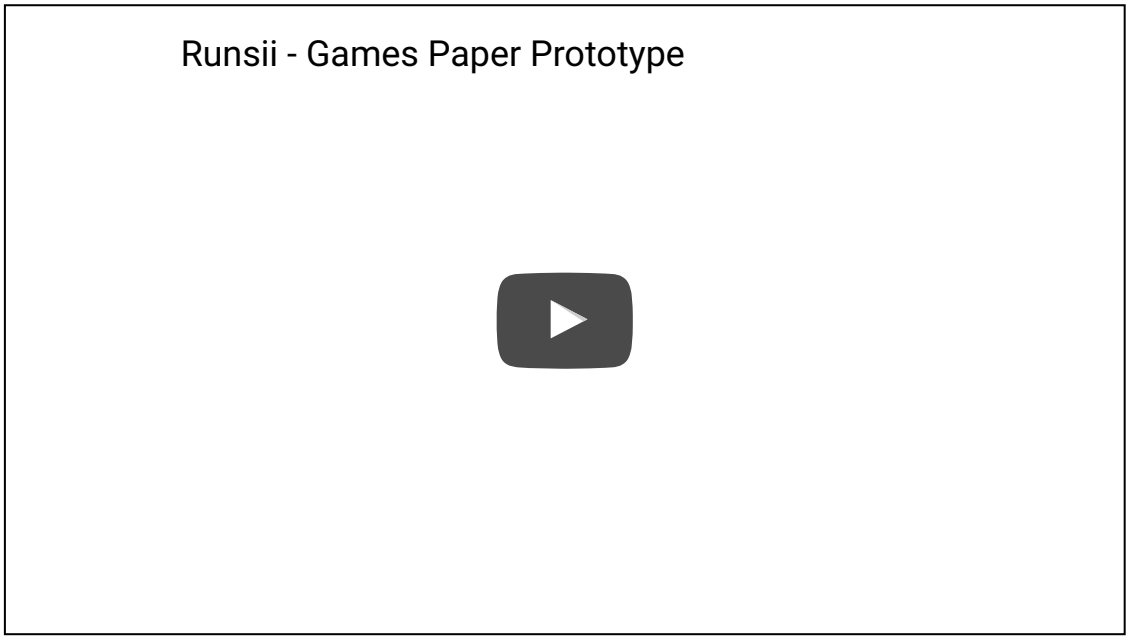
Games and playtesting

design and development patterns - part 1

- consider general ideas and concepts for your game project
  - *discuss, read, watch, listen...anything to help inspire ideas and concepts*
  - *set player experience goals for the type of game you'd like to create*
  - *consider concepts and mechanics you want in your game*
  - *brainstorm initial top 3-5 ideas in your project group*
- prototype - stage 1
  - *create an initial physical prototype for your top 3 ideas (where applicable)*
  - *useful to help with selling your game concept (e.g. to funders, other developers, testers...)*
  - *example artwork, character concepts, story themes and outlines...*
  - *act out gameplay examples...*
- prototype - stage 2
  - *start creating initial gameplay digital prototypes*
  - *interactive examples to test core gameplay*
  - *several prototypes will usually be created*
  - *each testing different concepts and examples for your game*
  - *try to keep this quick, and easy to modify and update*
  - *do not get too preoccupied with the overall fidelity...*
  - *playtest these digital prototypes*

Video - Paper Prototyping

example paper prototype - detailed concept 1



Source - YouTube

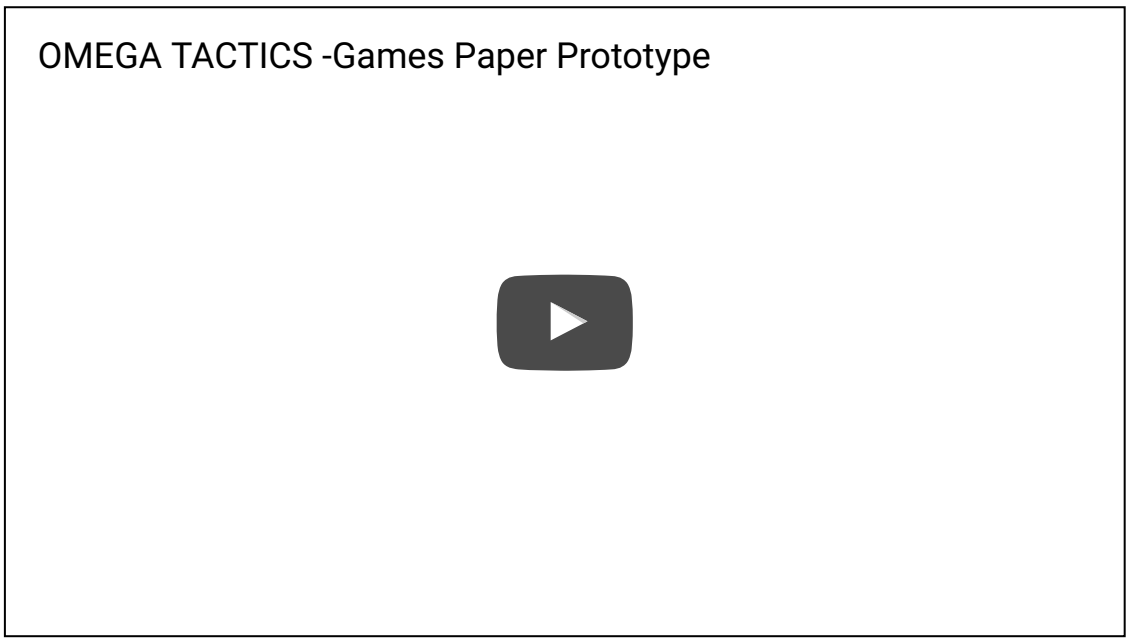
Games and playtesting

design and development patterns - part 2

- document design and development requirements
  - *use any notes, sketches, lists, &c. created during previous steps*
  - *these will help suggest structure and ideas for formal documentation*
  - *compile a full list of requirements, and development goals for your **actual** game*
  - *try to keep this documentation open to collaborative usage and editing*
  - *it will need to adapt and update as you develop the game*
- build and produce your game
  - *check each team member knows exactly what they need to do...*
  - *consider desired milestones for your game's development*
  - *check game design and development at each milestone*
  - *evaluate current state of game as a group*
  - *start developing the final game...*
- test, test, and test again
  - *after you reach a given milestone, quality assurance is now possible*
  - *should highlight working, well considered gameplay...*
  - *it will not resolve all issues*
  - *playtesting may continue to ensure quality and accessibility for players*

Video - Paper Prototyping

example paper prototype - detailed concept 2



Source - YouTube

Games and playtesting

benefits and usage

- this may seem a lot of work and preparation
  - *before reaching digital design and development*
- a few options to customise iterative patterns
  - *industry provides a few examples*
- as with most guidelines, recommendations, and systems
  - *modify them to fit your game's specific requirements*
- e.g. physical prototypes
  - *may be less useful and applicable for well established mechanics and gameplay*
- industry game projects will often skip this step
  - *may not incorporate as part of iterative design and development process*
  - *assuming game uses existing or well established mechanics and gameplay*
- many companies produce games as expansions, updates to existing titles
  - *variations on standard, well tested game mechanics...*
  - *designers and developers have a good idea how the game will work*
  - *they feel comfortable skipping ahead in the process*
- may also be due to industry pressures in general
  - *e.g. costs, timescales, resources, player perceptions...*

Games and playtesting

industry example - part 1

- such initial steps, including physical prototypes, become crucial
  - *e.g. if we are designing innovative mechanics and gameplay*
- for new examples and concepts
  - *crucial to plan and test thoroughly*
- Electronic Arts (EA) has used such processes
- EA introduced internal training for pre-production methods in the mid-2000s
  - *e.g. workshops on physical prototyping and playtesting*
- Jeremy Townsend, who has worked at EAs Tiburon studio
  - *best known for the Madden and Tiger Woods series of games*
  - *has used such **rapid prototyping** and pre-production methods*
  - *used these methods to help inform game development*

> *"Stay away from 3D prototyping if at all possible. Most game problems can be solved in 2D, even on paper," he said. "The Play's the thing - think of 3D prototyping as a big gun, you only want to use it as a last resort."*

develop - EA at Grand Rapids

Games and playtesting

industry example - part 2

- EA has also used Microsoft's XNA development tools
  - *e.g. for the XBox 360 console and Windows PCs*
  - *helps develop ideas quickly and efficiently*
- rapid prototyping still plays a key role for EA

> *"if something doesn't work you can correct away from it"*

develop - EA at Grand Rapids

- **Spore**, for example, was released by EA in 2008
  - *example of a god game*
  - *well-known for its use of procedural generation*
  - *used this type of pre-production testing and development*
  - *included the creation of many different prototypes*
  - *e.g. Spore - Prototypes*

Image - EAs *Spore*

EA - Spore, 2008

Image - Game Jams

Global Game Jam

Games and playtesting

industry example - part 3

- Global Game Jam](http://globalgamejam.org/)
  - *designers, developers, &c. from around the world...*
  - *20th to 22nd January 2017 in Hawaii*
  - *more than 36,000 participants in 702 sites...*
  - *more than 7,000 games created*
- this year's theme was **waves**
- diversifiers available as well
  - *optional constraints...*

example diversifiers

- **Spaced**
  - *only play using the spacebar - no mouse, other inputs*
  - *testing accessibility, design*
- **Old Masters**
  - *game's art style inspired by a master artist's style*
  - *e.g. Picasso, Klimt, Van Gogh*
  - *testing art*
- **Chipping In**
  - *game may use only 8 bit style audio, visuals, or both*
  - *testing audio, art*
- many more...

References

- develop. *EA at Grand Rapids*. http://www.develop-online.net/tools-and-tech/grand-rapids/0116020. 2007.
- David, S. *Game Over: How Nintendo Conquered the World*. Vintage Books. New York. 1994. P.51.
- Electronic Arts. Spore Prototypes. http://www.spore.com/comm/prototypes. 2008.
- Global Game Jam
- Wikipedia
  - *God Game*
  - *Shigeru Miyamoto*
  - *Spore - 2008*

Videos

- The Genius of Shigeru Miyamoto
- Super Mario Bros. - Level 1
- Paper Prototyping
  - *initial concept 1*
  - *detailed concept 1*
  - *detailed concept 2*