

Comp 388/488 - Game Design and Development

Spring Semester 2019 - Week 3

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Games and playtesting

player experience goals and aims - part I

- 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...

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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

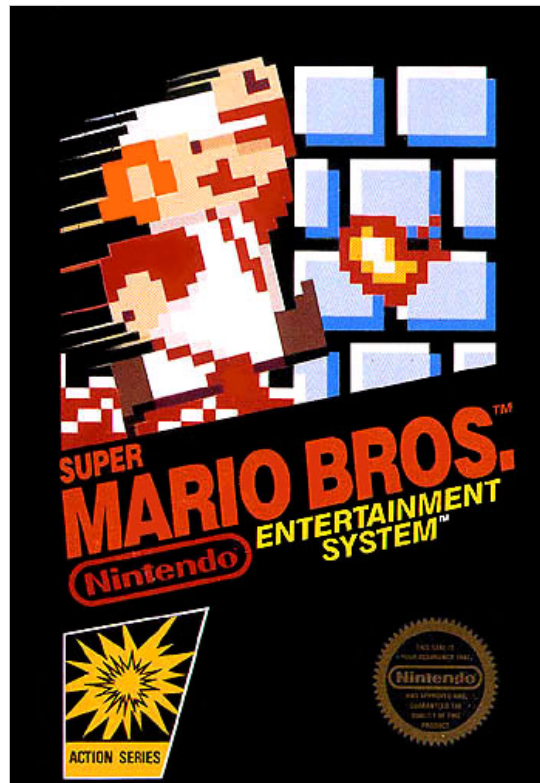
Super Mario Bros. (NES): Level 1-1



Source - YouTube

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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

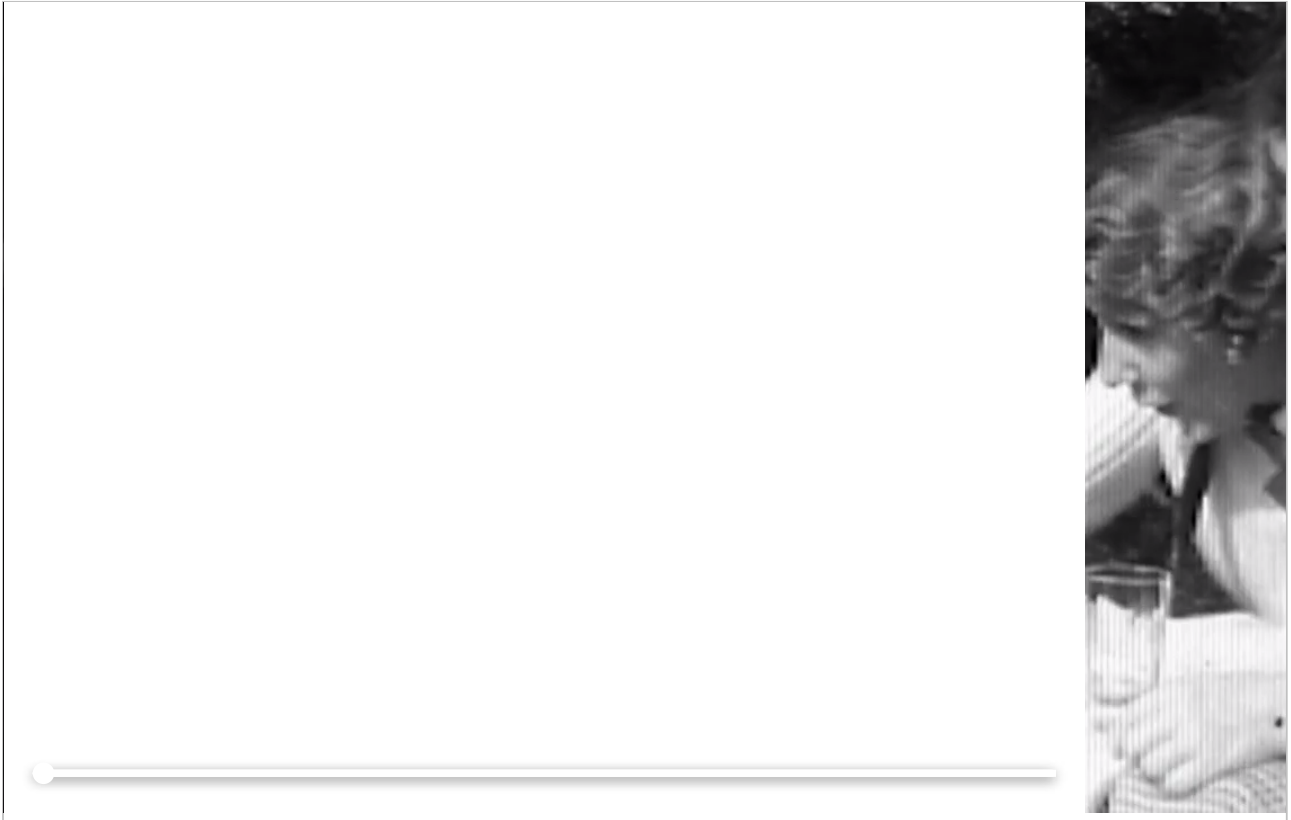
example paper prototype - initial concept I



Source - YouTube

Video - Prototyping by Acting

Walt Disney



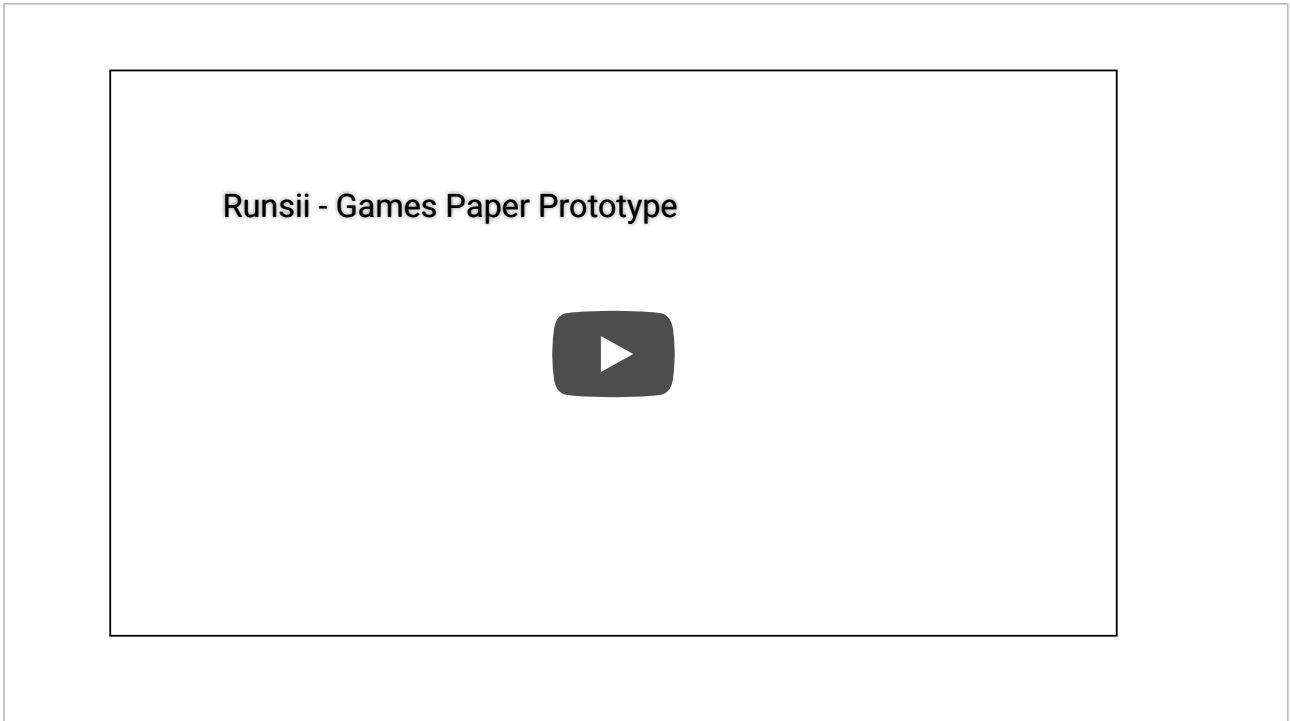
Games and playtesting

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 I



Source - YouTube

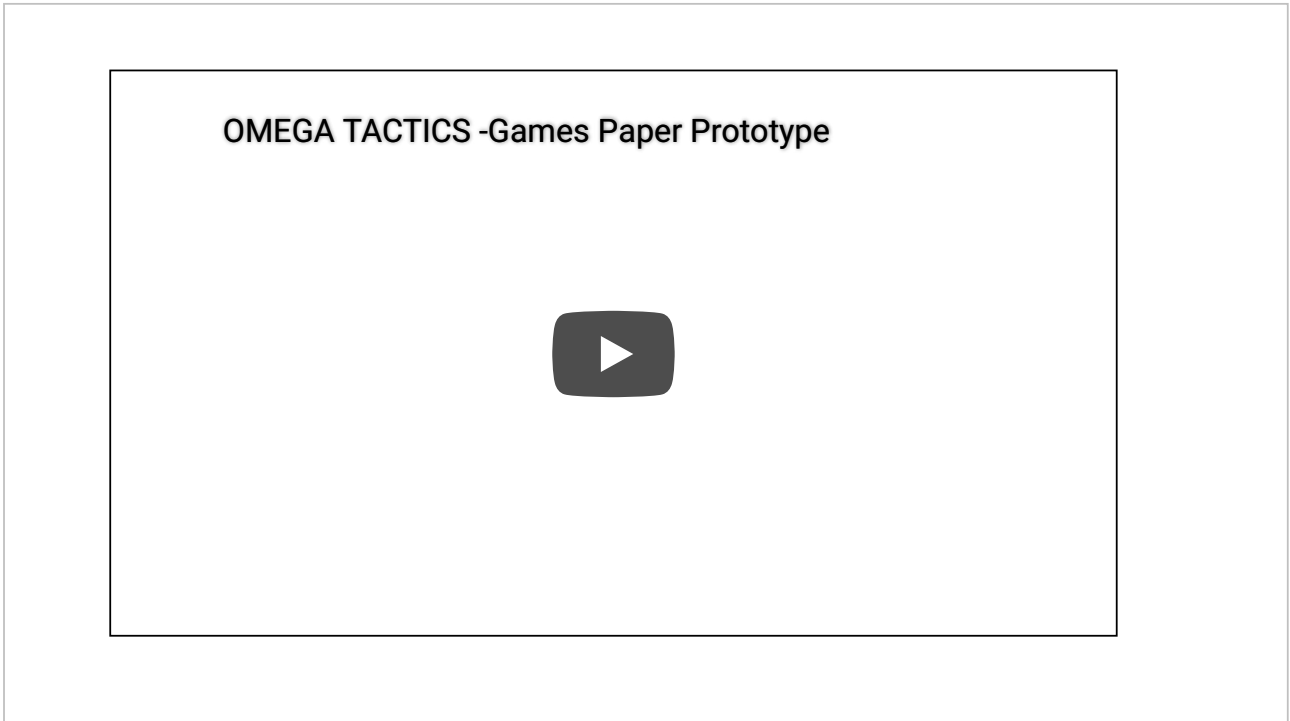
Games and playtesting

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 I

- 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 EA's 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 - EA 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...*
 - *25th to 27th January 2019*
 - *more than 47000 participants at 860 sites in 113 countries...*
 - *more than 9000 games created (~ 7000 in 2018)*
- this year's theme was **What home means to you...**
- diversifiers available as well
 - *optional constraints...*

example diversifiers

- Accessibility
- Art
- Audio
- Code
- Design
- Narrative
- Meta

Games and formal structure

intro

- start to design and build our games
 - *consider components and structures that make a game*
 - *something that people will actually want to play*
- different interpretation of the nature of a game
 - *underlying premise is reinforced by particular structures*

Image - Draughts vs Space Invaders

pick a game

Draughts/Checkers



Space Invaders



Games and formal structure

structures

- regardless of the specifics of each game
 - *analogue vs digital*
 - *perhaps commercial compared to open source*
 - *turn-based vs a shooter game*
 - ...
- still perceive each example as a game
 - *something that people will want to play*
- obvious disparities between **Draughts** and **Space Invaders**
 - *may identify similarities in general experiences of both games*
 - *sufficient to evolve a definition of a game*
- each game shares a few similarities and traits that inherently make a game, e.g.
 - *players*
- objectives
- procedures & rules
 - *including implied boundaries*
- conflict, challenge, battle...
- outcome, end result...

Games and formal structure

players - part I

- players are an obvious similarity
 - *but one that still helps to define our games*
- each game requires players
 - *a description of each game defines an experience structured for its players*
 - *we're defining the game based upon interactive participation*
- gameplay scenarios may be different for each game
 - *unifying factor is the concept of player participation in the game experience*
 - *each player is an active contributor to the respective game*
 - *they make decisions, adopt roles, become invested in the gameplay...*

Games and formal structure

players - part 2

- to play each game as defined
 - *a player must voluntarily accept the defined rules and structures for the game*
- initially defined by Bernard Suits as a **lusory attitude**
 - *he considered rules and games as,*

To play a game is to attempt to achieve a specific state of affairs...where the rules are accepted just because they make possible such activity.

Suits, B. *The Grasshopper: Games, Life and Utopia*. Broadview Press. 3rd Edition. 2014.

- the **lusory attitude** becomes an inherent requirement for each player
 - *an acceptance of arbitrary rules for each game to permit gameplay*
 - *forms a key part of the player's required emotional and psychological states*
- how we manipulate, coerce such states will often be key to the success of our gameplay
- need to be careful how far we push or skew such rules within our game
 - *too far - player may snap, and reject the game*
 - *game may be perceived as too difficult, demeaning, removed from experiential reality...*

Games and formal structure

objectives

- each game clearly defines goals and requirements for play and players
 - *in effect, aspirations for the game...*
- in *Draughts*, each player is trying to ensure their opponent
 - *either loses all of their pieces*
 - *or can no longer move any of the remaining pieces*
- in *Space Invaders*, a player is trying
 - *to defeat rows of aliens (often five rows of eleven aliens)*
 - *whilst preserving their own defensive bunkers and lives*
- both games offer different overall objectives, but they feature
 - *interactive objectives to reach a defined conclusion*
- compare this to a passive act such as
 - *listening to music, reading a book, or watching a movie*
- each game's objective becomes a trait
 - *a requirement for the game itself*
- if not, we're simply watching
 - *an inanimate board*
 - *or aliens advancing down a screen*

Games and planning

flowcharts - intro

- may create a flowchart to help outline initial gameplay
- chart acts as our first consideration of available paths within our game
 - *both successful and unsuccessful*
- we may then use this flowchart as a simple kernel for gameplay
 - *chart is then developed and enhanced as we expand our game*
- a flowchart is a simple concept
- it allows us to create a representational diagram
 - *of pathways or flow for a given series of steps that form a process*
 - *process may be part of a task*
 - *which we may then combine to allow completion of a goal...*

Games and planning

flowcharts - design

- we may design and create our flowchart using any number of shapes and connecting paths
 - *often represented as directional lines*
 - *shapes will normally represent an action or task that a player may complete*
- we can also add conditional options to the flowchart
 - *may represent choices a player may make*
 - *within the logic of the game, and its gameplay*
- for example, we may consider the following outline
 - **Enter the Mummy's Tomb** - *a basic text-based game*
 - *a player is in a fantasy world based on Ancient Egypt*
 - *our player is exploring the Valley of the Kings*
 - *each tomb contains either a Pharaoh's burial treasure or a Mummy*
 - *a Pharaoh's mummy does not like being disturbed*
 - *the player approaches the entrance to a tomb*
 - *they must choose whether to enter or not*

Games and planning

outline and structure - *Enter the Mummy's Tomb*

- basic logic for this game may use the following outline and structure
- a Python based game, *Enter the Mummy's Tomb*
 - *import statements*
 - *import modules `random` and `time`*
 - *define functions for app structure and logic*
 - *output the intro to the game*
 - *allow a user to choose a cave*
 - *check chosen cave*
 - *simple option to play the game again*
 - *while loop for game play option (yes or no)*

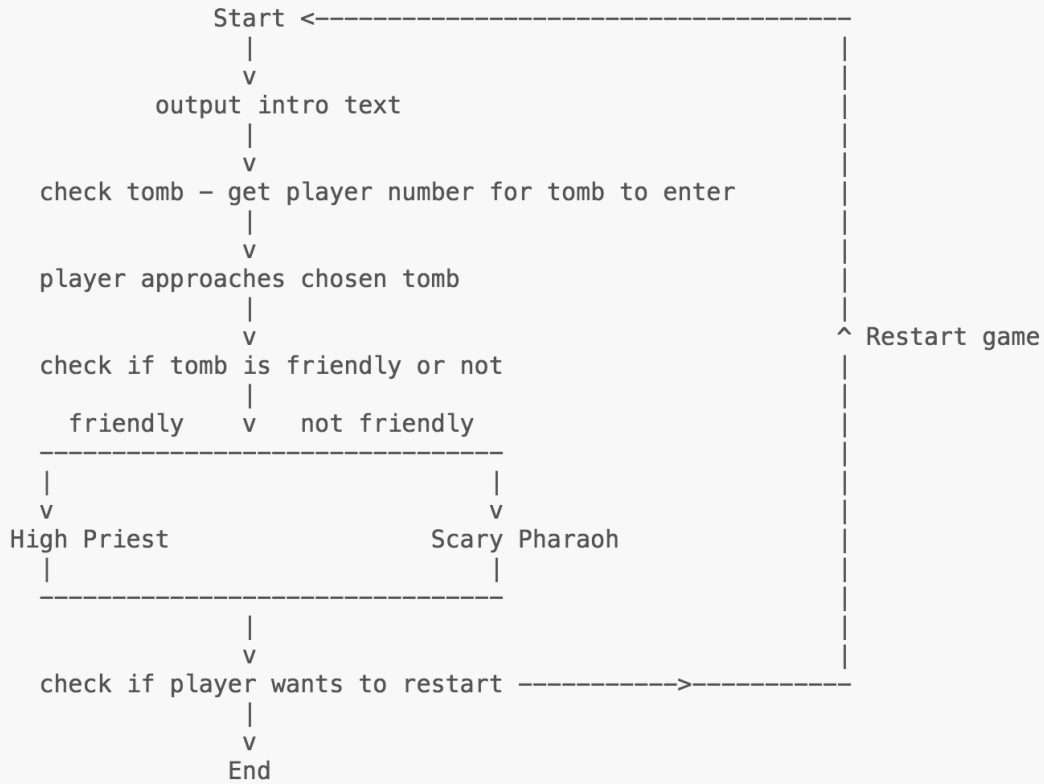
Games and planning

flowcharts - *Enter the Mummy's Tomb*

- to start designing our game
 - *we need to consider the path and options our player may choose*
- i.e. how they may progress from start to finish for such games
- our game follows the pattern of a *text adventure*
 - *a type of interactive fiction game*
 - *an example similar to the famous Zork game*
- may often depict the structure and options using a visualisation
 - *a flowchart is a good example for this type of game and logic*

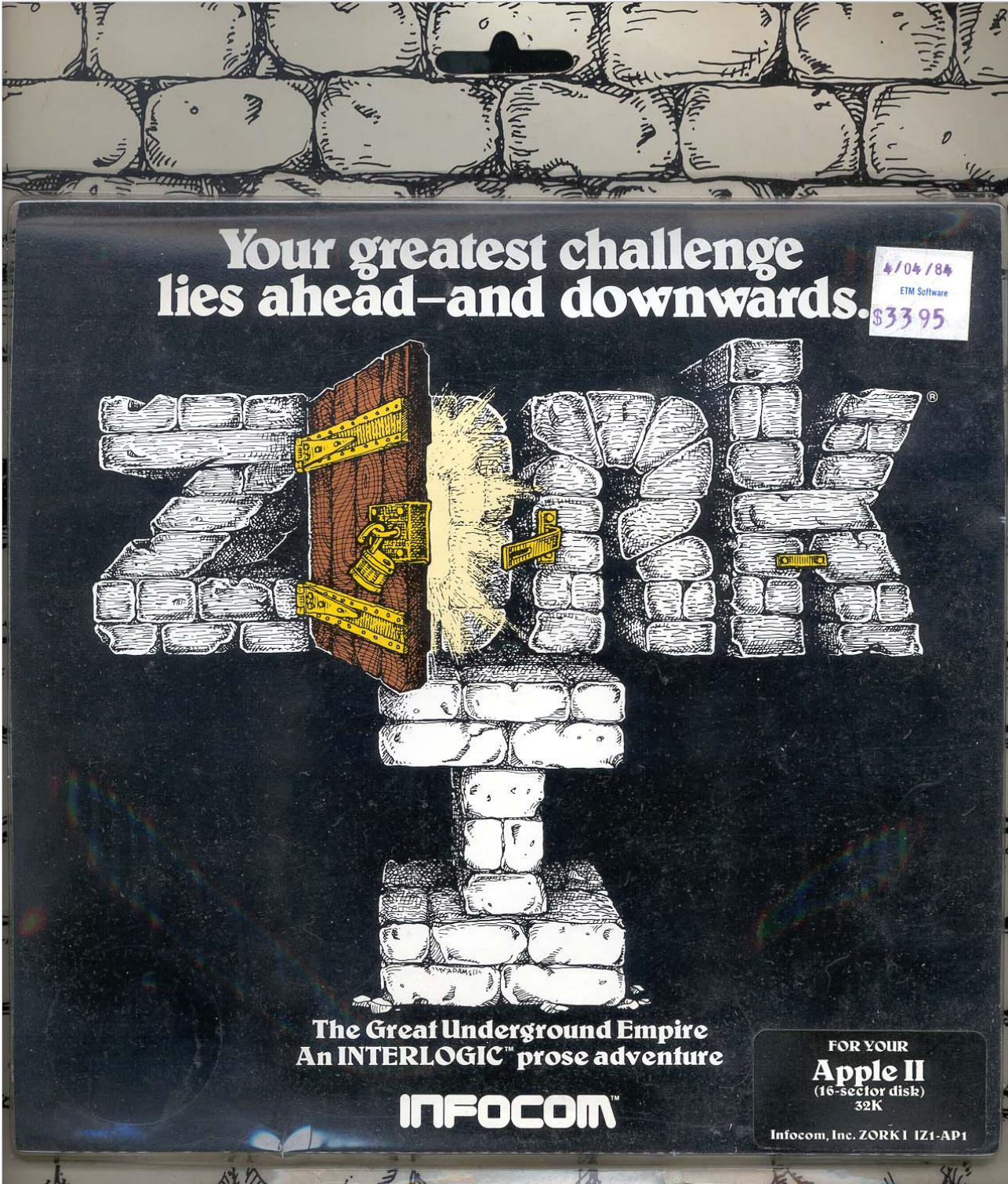
Image - Flowchart - Example I

Enter the Mummy's Tomb



Flowchart - Enter the Mummy's Tomb

Image - Zork



Zork

Games and planning

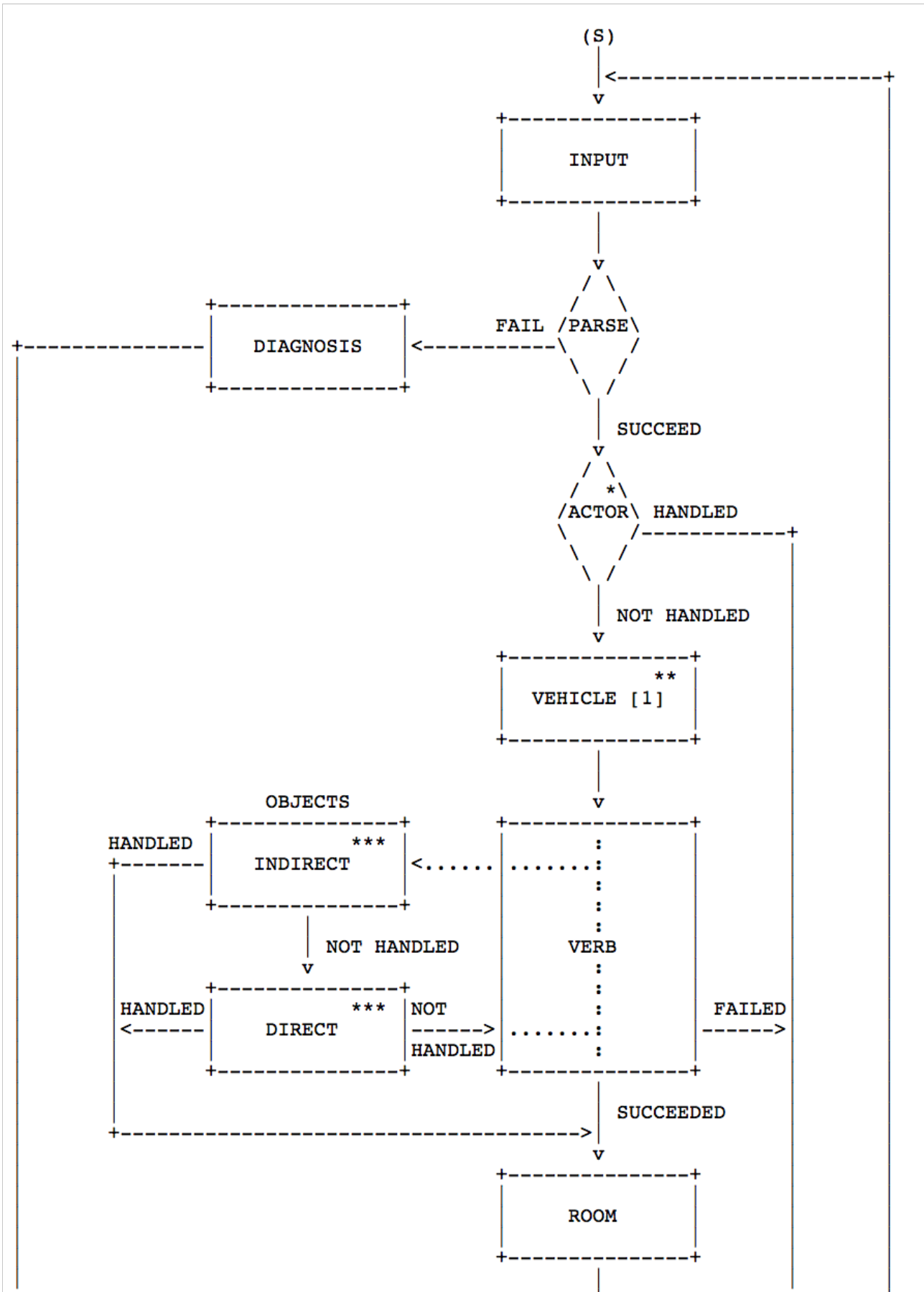
Zork

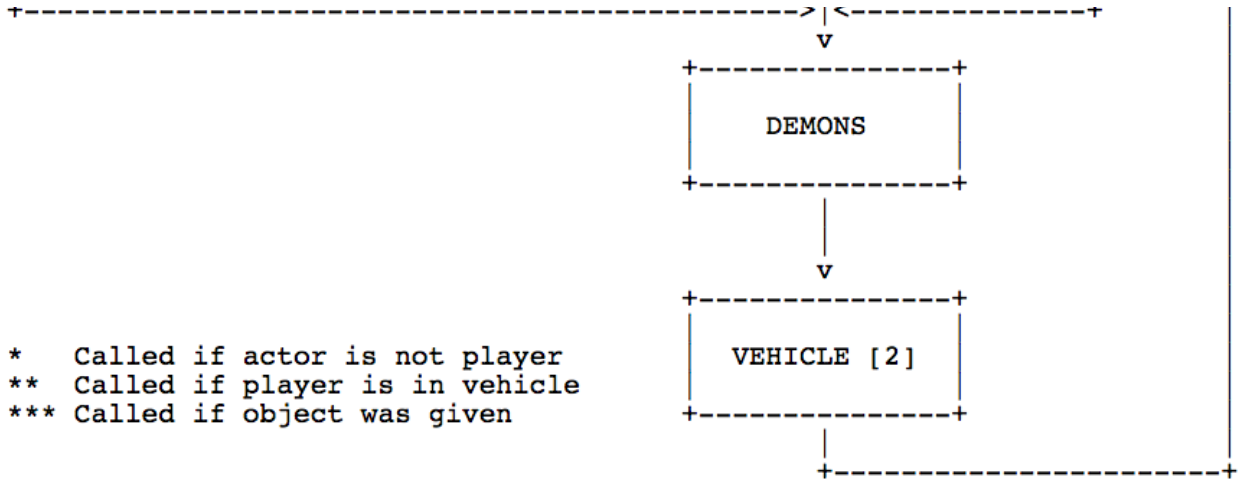
- **Zork**, one of the best known text-based adventure games
 - *written in 1977 for the PDP-10 mainframe computer*
 - *second text-based adventure game ever written - first was Colossal Cave Adventure*
 - *written in 1976 for the PDP-10*
 - *both games were interactive fiction*
 - *set in the ruins of an ancient empire lying far underground*
- **player's character is simply an anonymous adventurer**
 - *who is venturing into this dangerous land in search of wealth and adventure*
- **primary goal of this game is to return alive**
 - *from exploring the "Great Underground Empire"*
- **a victorious player will earn the title of *Dungeon Master***
- **game's dungeons include a variety of objects...**
 - *interesting and unusual creatures, objects, and locations*
- **best known creature is the ferocious but light-fearing *grue***
 - *a term for a fictional predatory monster that dwells in the dark*
- **ultimate goal of Zork I is to collect the Twenty Treasures of Zork**
 - *and install them in the trophy case*
- **finding the treasures requires solving a variety of puzzles**
 - *such as the navigation of two complex mazes*
- **end of Zork I becomes the entrance, and beginning to the world of Zork II**
- **fantastic text-based game**
 - *feels part fantasy, part classical mythology, and part sci-fi...*
- **Download the Zork games for Mac and Dos/Windows at the following URL,**

- *Infocom - Zork*

Image - Flowchart - Example 2

Zork



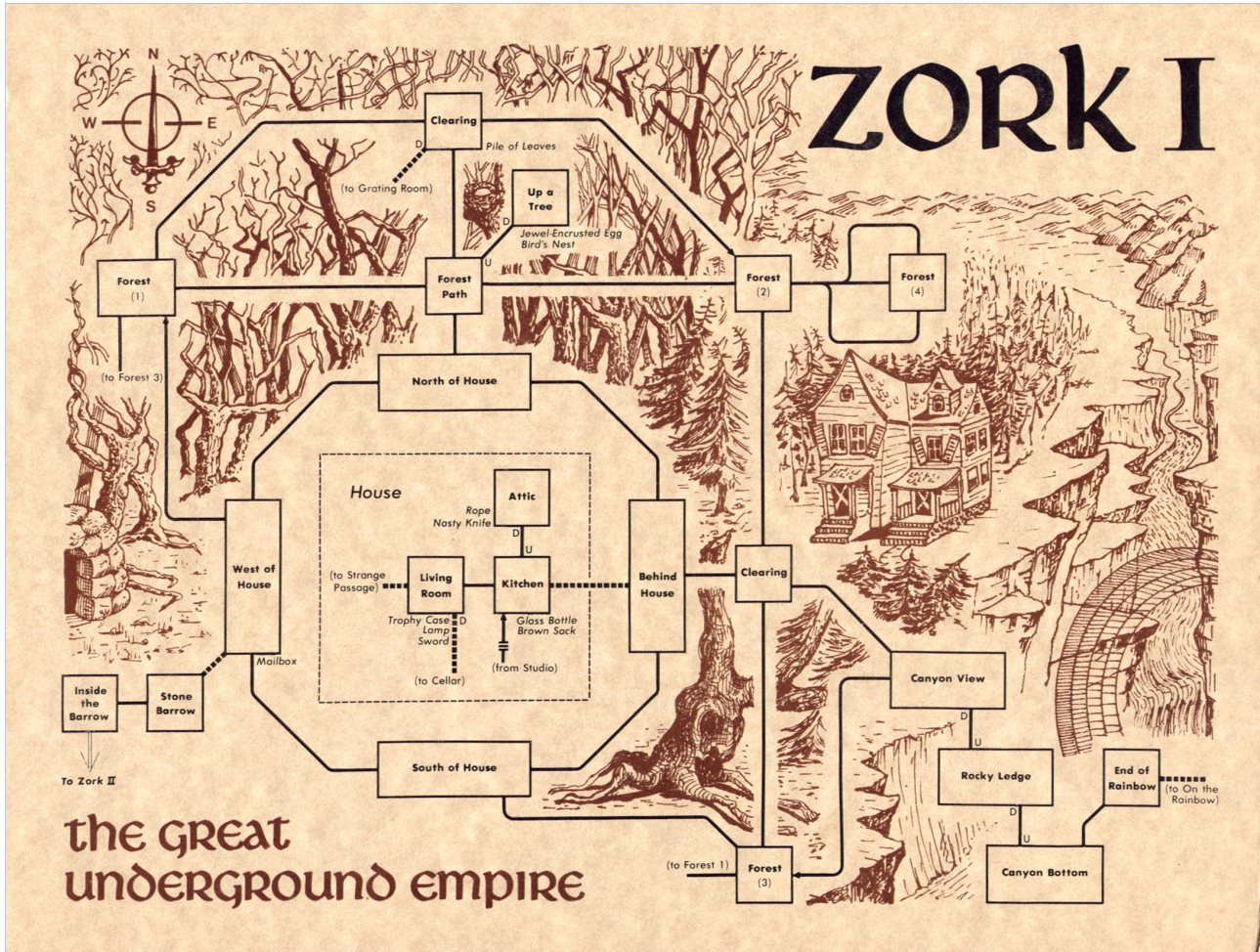


* Called if actor is not player
** Called if player is in vehicle
*** Called if object was given

Flowchart - Zork - Logic

Image - Flowchart - Example 3

Zork Map



Flowchart - Zork - Map

Games and planning

quick exercise

Briefly describe your basic game objectives for the following game ideas.

Then, briefly draw an outline flowchart for this game to allow a player to play from the start to the end of an example objective.

Game ideas include:

- **a single player in a locked square room**
 - *each of the four doors may be opened by solving a series of puzzles, challenges, or mini-games within the room*
 - *the room decreases in size as time progresses in the game*
- **a single player on an alien planet**
 - *the heat starts to rise as time progresses in the game*
 - *as the character's temperature rises, it starts to shrink by a proportionate amount*

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

- Super Mario Bros. - Level 1
- Paper Prototyping
 - *initial concept 1*
 - *detailed concept 1*
 - *detailed concept 2*