Comp 388/488 - Game Design and Development

Spring Semester 2019 - Week 3

Dr Nick Hayward

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.

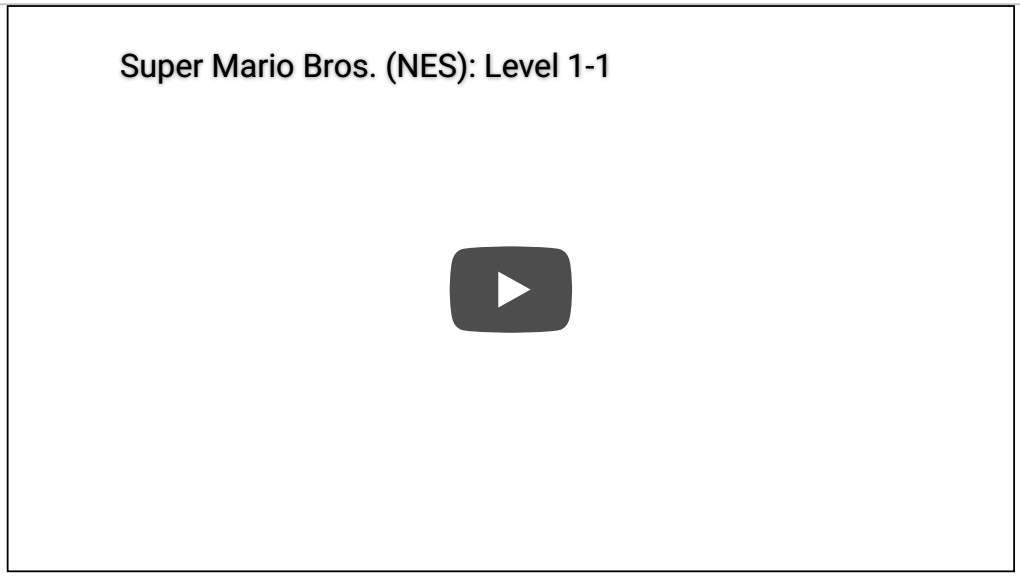
> *a player should be free to wander and experience the game at their own pace, and in their chosen order...*

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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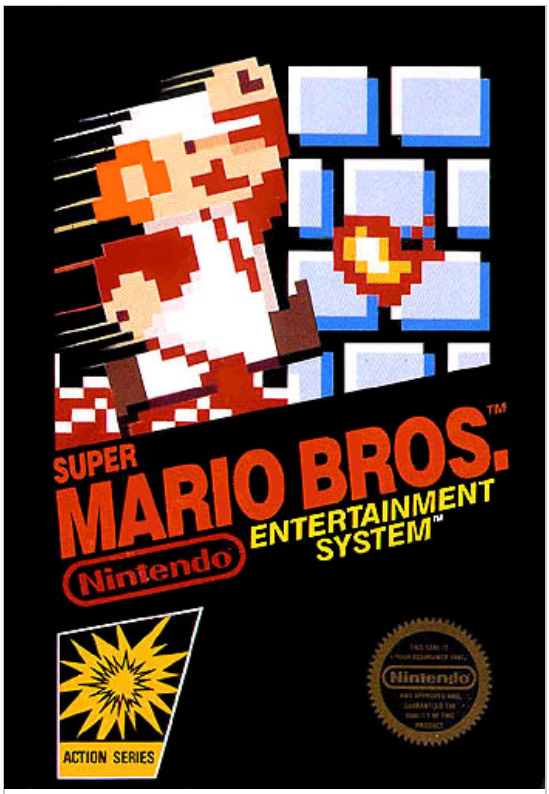
Quick exercise



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

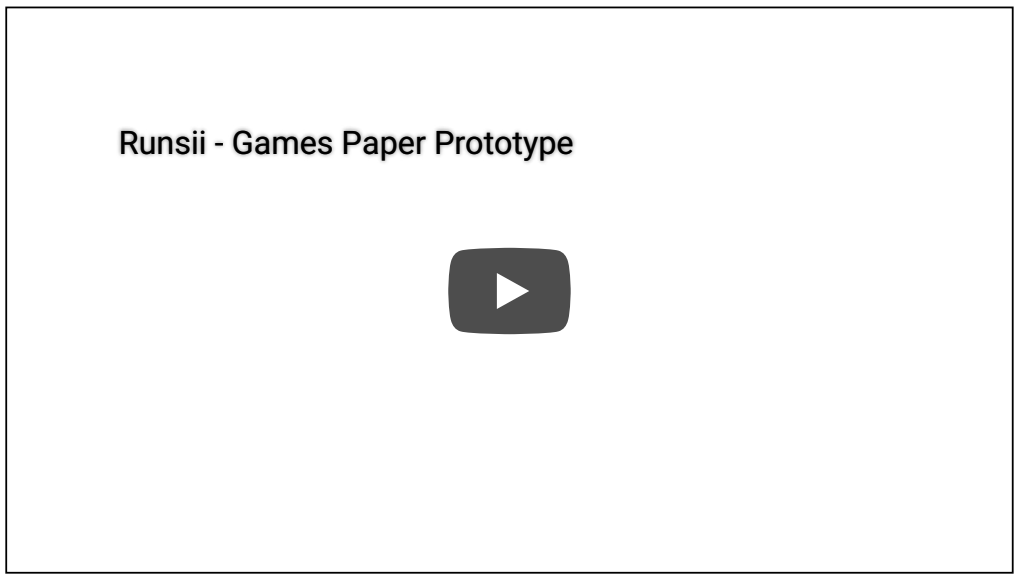
Games and playtesting

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

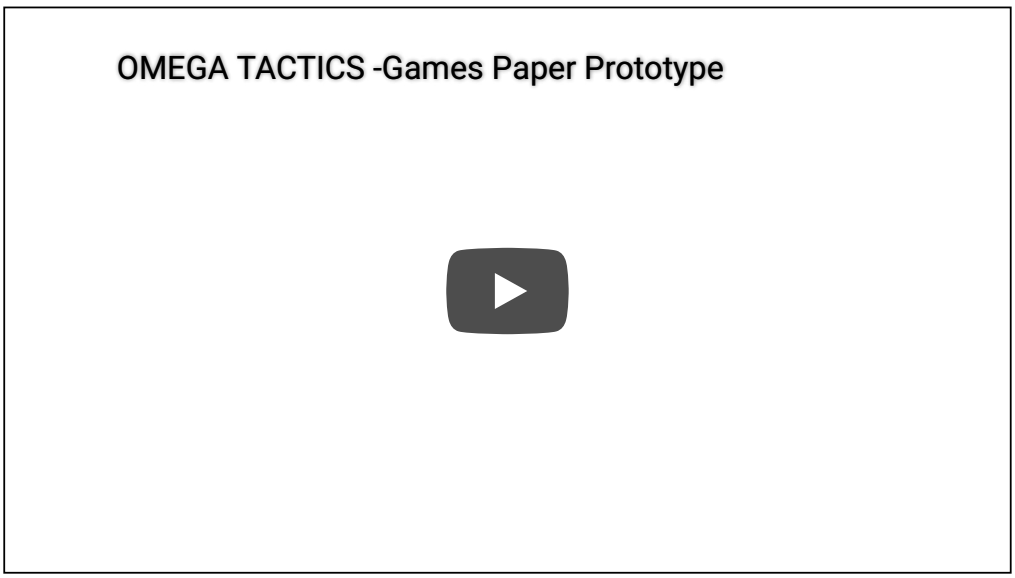
Games and playtesting

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 - 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 1

- 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)*

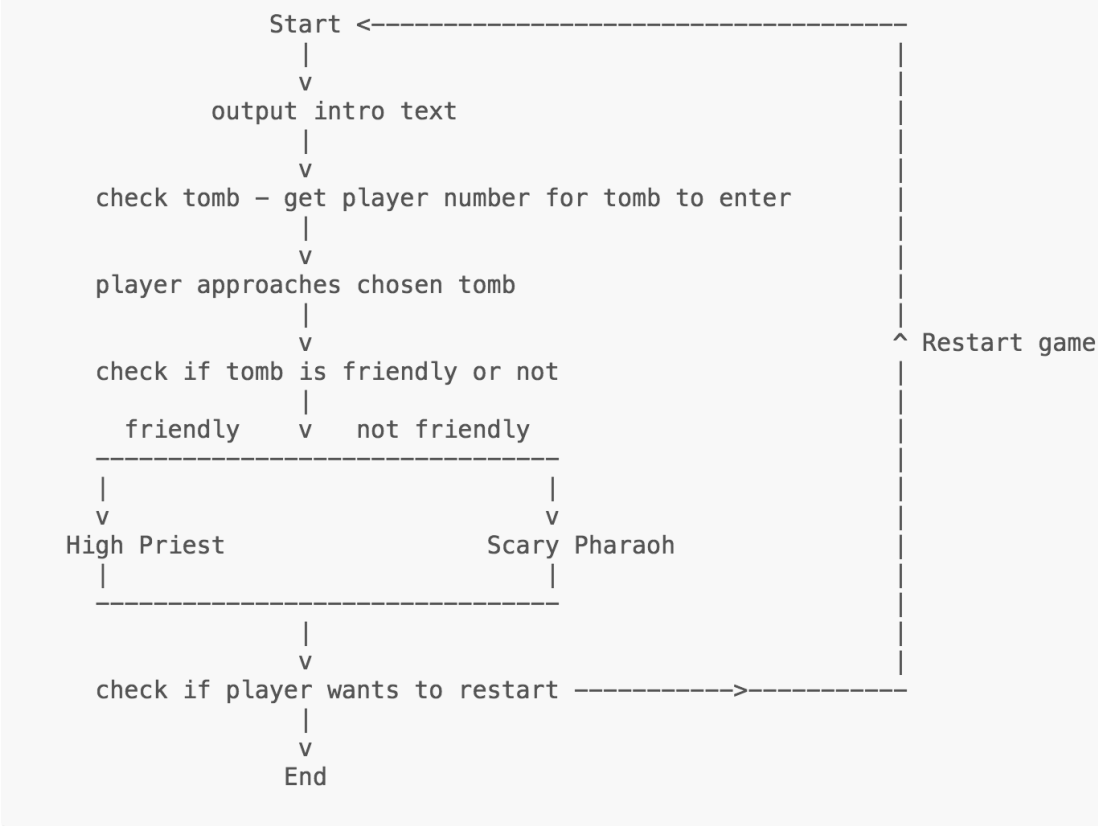
Games and planning

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*

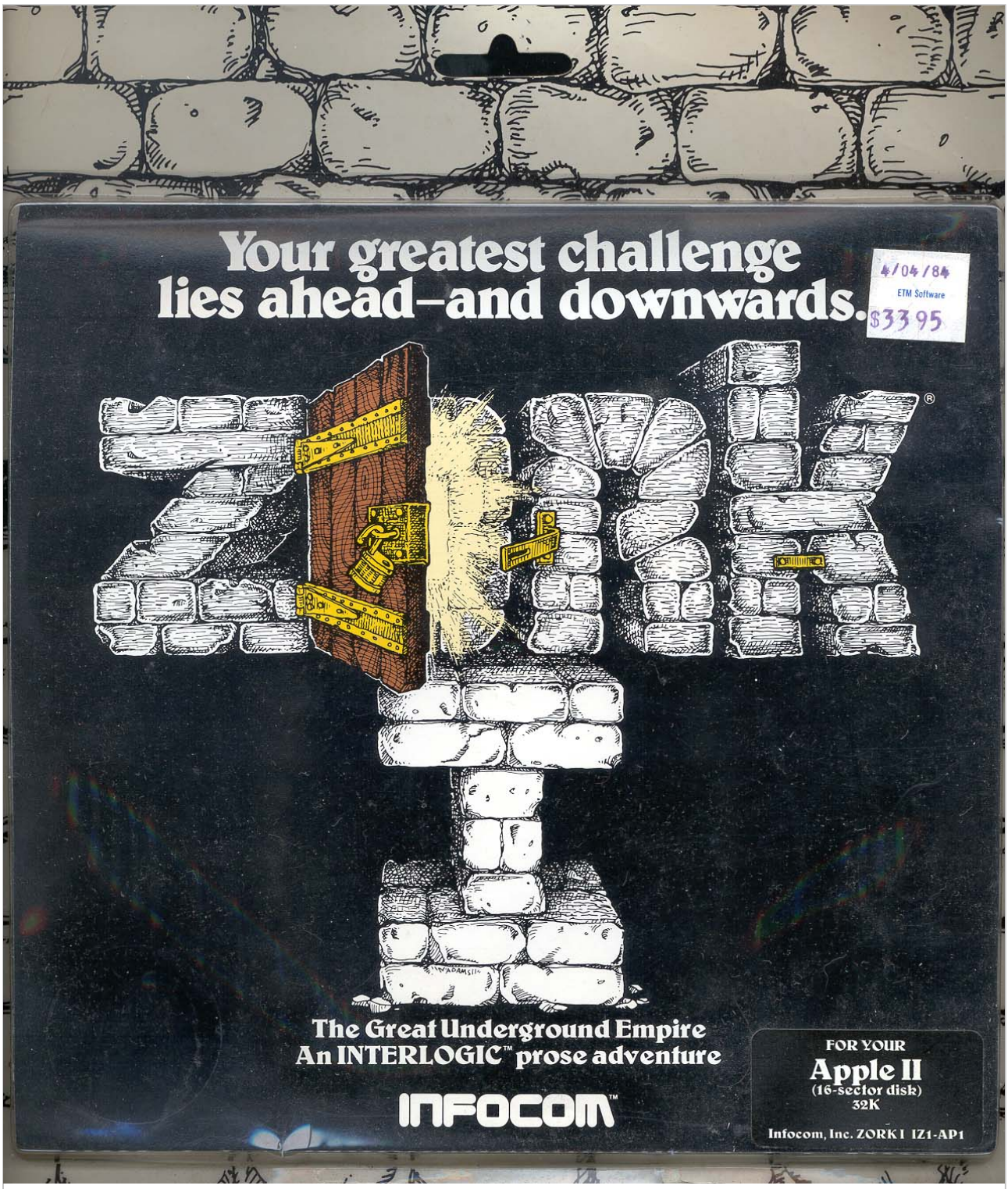
Image - Flowchart - Example 1

Enter the Mummy's Tomb



Flowchart - Enter the Mummy's Tomb

Image - Zork



Zork

Games and planning

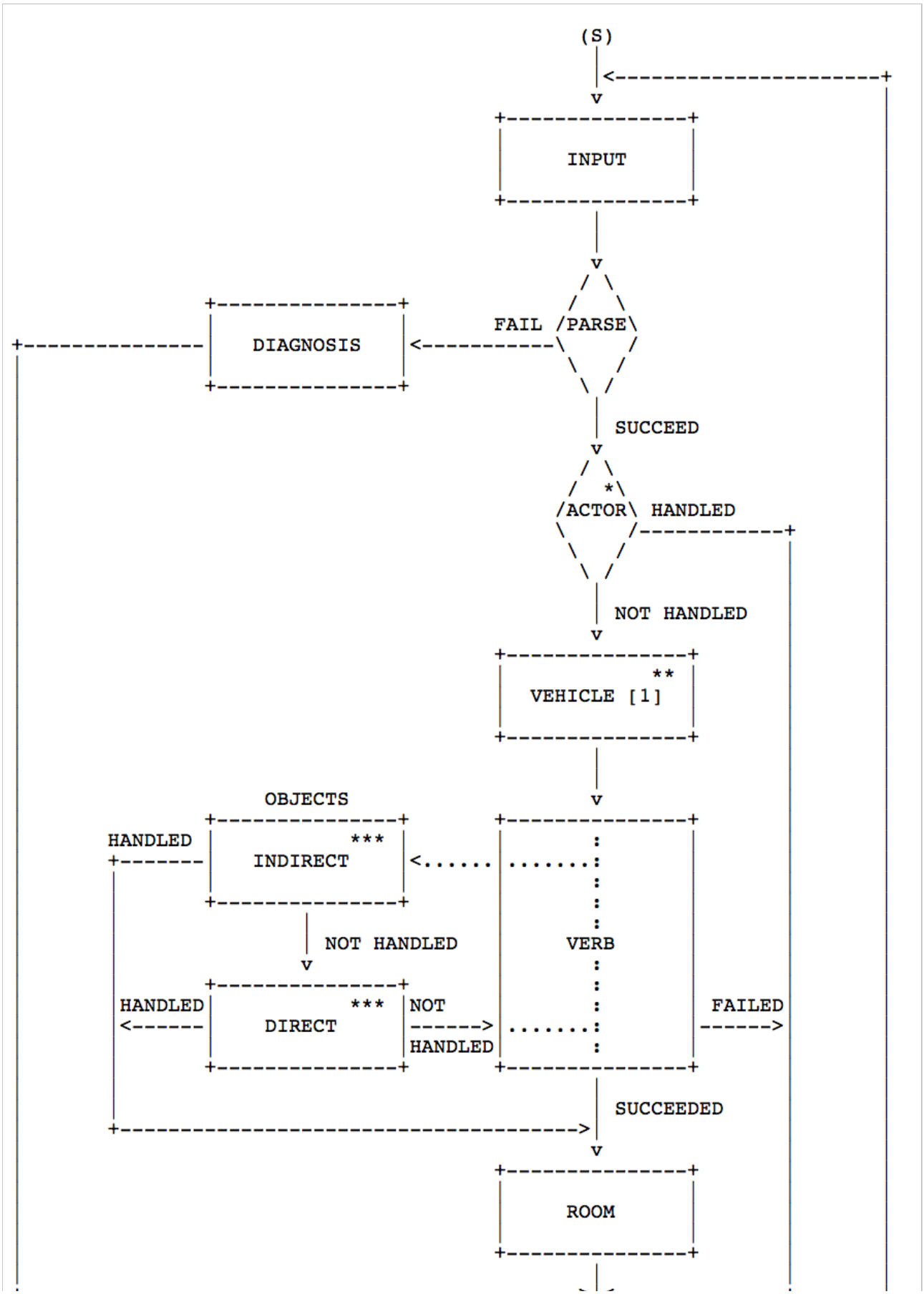
Zork

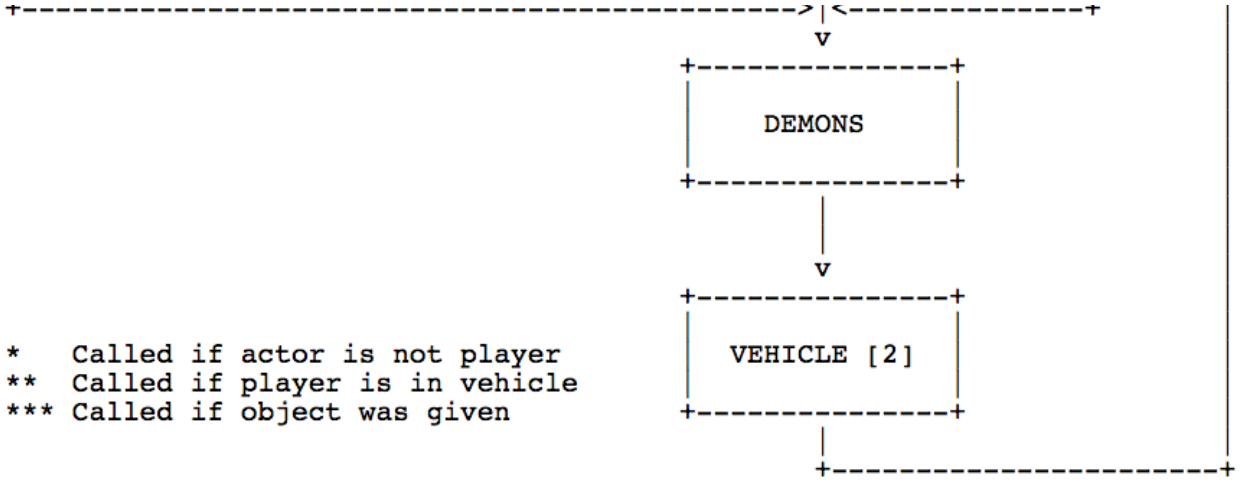
- **Zork**, one of the best known text-based adventure games
  - *written in 1977 for the PDP-10 mainframe computer*
  - *second text-based adventure game ever written - first was Colossal Cave Adventure*
    - written in 1976 for the PDP-10
  - *both games were interactive fiction*
  - *set in the ruins 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

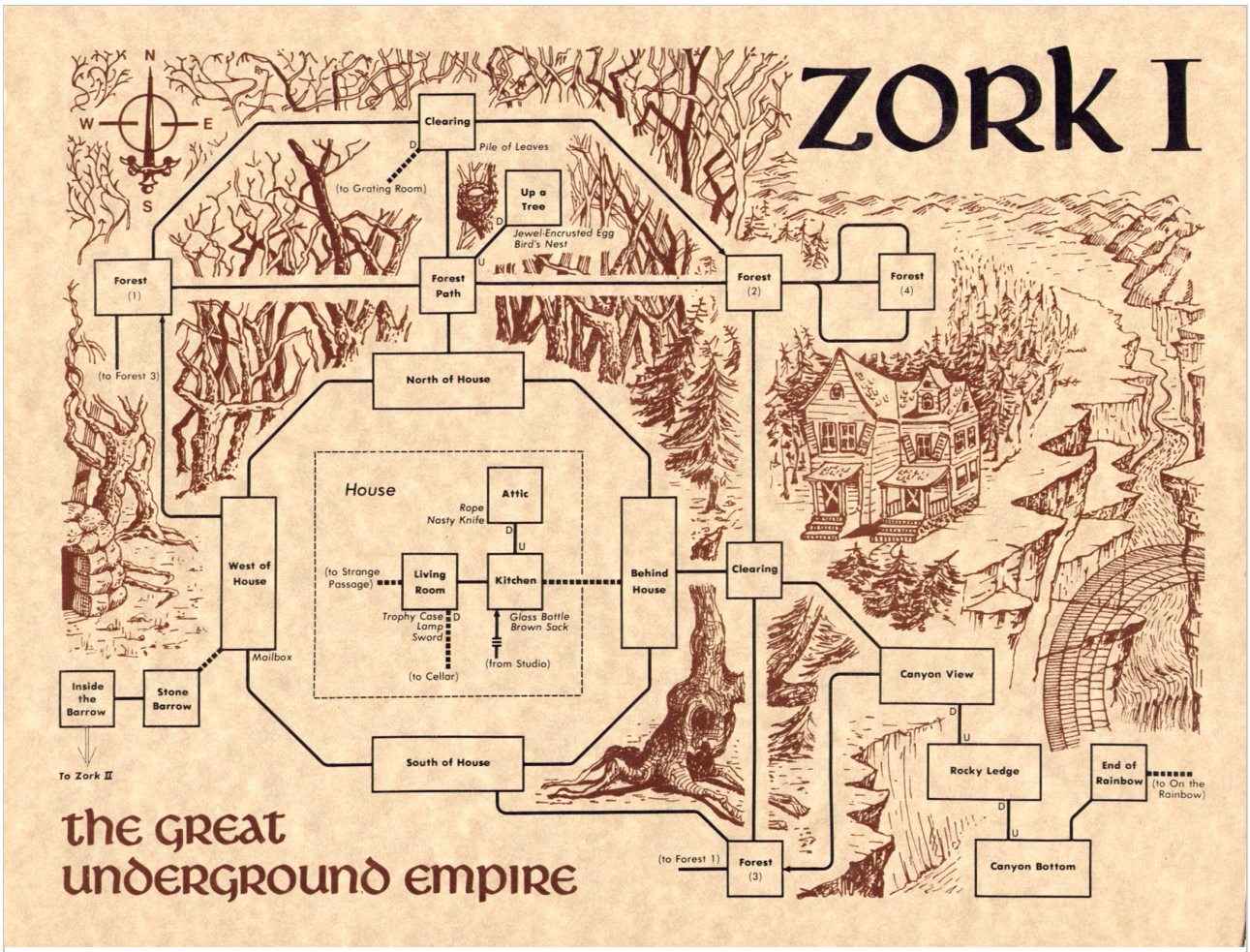




Flowchart - Zork - Logic

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*