cisc3665
game design
fall 2011
lecture # IV.1
game development documentation

topics:

- game design documents

- design document

references:

- notes from: *Game Design: Theory & Practice* (2nd Edition), by Richard Rouse III.
  Wordware Publishing, Inc., 2005, chapters 17 and 19.

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game development documentation

- why?
  team of developers need an agreed-upon design, preferably documented in the same place

- documents:

  – concept document

  – competitive analysis

  – design document

  – flowcharts

  – story bible

  – script

  – art bible

  – game minute

  – storyboard

  – technical design document

  – marketing plan

  – development schedule

- audiences for your documentation:

  – funders

  – managers

  – designers for game levels, game elements

  – programmers

  – artists

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game development documentation: concept document

- "pitch" or proposal for the game

- audience is someone who is going to fund the development, e.g., funder, manager, publisher

- content should be short

- should discuss high-level design issues

- should detail game story

- should sound exciting but tractable

- can include some rough art (e.g., sketches), screen mock-ups

game development documentation: competitive analysis

- reviews the field, the competitors
- describes the "related work" within the same game genre
- highlights what is unique about the new game

game development documentation: design document

- functional specification
- fully describes gameplay in detail
- should be a reference for the implementation of the game
- includes:
  - game mechanics
  - storyline, context
  - "worlds" and/or "levels" and/or "stages" in the game
  - characters, objects and items in the game
- covers the "who", "what", "when", "where", "why", "how" of the game
- should NOT include detailed content that is in the other documents described here (though there is necessarily some repetition at a high level in order for the design document to make sense on its own)
- **design document** discussed in detail in second section of these notes (below)

game development documentation: flowcharts

- can be part of the design document, or can be separate
- two purposes:
  - to track out-of-game menu options (e.g., start new game, load old game, set preferences, etc).
  - to track players through game levels
- can also be used to explain players' decision-making processes during the game

game development documentation: story bible

- overview of game narrative
- can be in the design document, or can be separate (should be separate if story is long and detailed)
- full details of game's back story and context go in the story bible
- includes background, character details, history of characters, context, etc.—whatever is necessary for the game designers and implementers to know so they can build the game
- acts as a guide for consistency during game development

game development documentation: script

- like a movie-script with dialogues for games that have "cut scenes"

- also includes "stage directions"

- can be contain pseudo-code

  - *IF-THEN-ELSE* or *SWITCH* branching statements to show options between playing different scenes or selection based on what the player does

  - *OR* statements showing possible selection between clauses in dialogue or scenes which can be selected randomly by the game engine

- result is a "branching dialogue tree"

- any text that appears in the game should be in the script

- keep in mind when writing the script that this is a game and not a movie!

  - scenes should not be too long

  - so player can get back to *doing* stuff instead of *watching* stuff

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game development documentation: art bible

- contains art "assets"

  - drawings of characters, objects, items

  - animations of characters and objects doing standard things (e.g., walking, door opening, etc.)

  - background scenery

- contains sketches and screen shots

- details the "look and feel" of the game

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game development documentation: game minute

- detailed description of a short session of game play

- contains everything player sees and does

- audience for the "game minute" is typically managers, but also developers can use it to keep team members on the same page in terms of a unified game experience

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game development documentation: storyboard

- linear sequence of scenes, but with branching

- should be drawn like a state/action graph

- "nodes" in the graph are scenes

- "links" are actions that player can take

- links can also be optional directions that the game engine can take without player input, in which case a probability should accompany the links indicating how likely it is that each branch would be taken

- *remember state diagram from the midterm—storyboard should show the different possible actions and what scene in the game would result if each action were taken*

game development documentation: technical design document

- contains implementation specifications
- includes details about:
  - code (software) structure, e.g., class design
  - implementation of artificial intelligencen
- describes the rendering architecture
- describes any hardware specifications (e.g., game is designed to run on a tablet, on a phone, in a browser, etc.)

game development documentation: marketing plan

- the marketing plan is a *business* document
  - who is the target customer?
  - what is the estimated number of games that will be sold?
  - what does market analysis show about pricing?
  - what is the competition like from a business standpoint (as opposed to a technical/design comparison, which is done in the "competitive analysis" section, detailed above)

game development documentation: development schedule

- development schedule
- what are the steps in the development process?
- what are the key development goals?
- when will a complete prototype be ready?
- when will alpha-testing begin?
- when will beta-testing begin?
- when will the first version be released for sale?

design document

- writing style is important
- sections
  - table of contents
  - introduction/overview
  - game mechanics: WHAT and HOW
  - artificial intelligence
  - game elements
  - story overview
  - game progression
  - system menus

design document: table of contents

- ends up as tool people use to navigate your document
- must include subsections, sub-subsections, etc

design document: introduction/overview/executive summary

- good starting point for understanding the game
- and for new team members who join
- and for anyone reading about the game for the first time (e.g., funder, marketer, producer, etc.)
- should be ONE PAGE long

design document: game mechanics

- most important part of your document
- what the game play really is
- avoid detailing specifics about game-world objects or characters (do that later)
- be abstract/general enough so that many different games could be made from this section of the document
- introduce players' capabilities in the order in which a user will encounter them; start simple and move to more complex
- list physical commands users will need to effect players' movements
- describe how players control their avatar
- describe avatar's movement model
- if user creates their avatar, describe that process and components to be created
- if there are puzzles in the game, describe their functions and how players manipulate them—but in general, not with implementation details

- don't list actual puzzles, but instead include high-level descriptions (e.g., puzzle might involve hitting walls...)
- do not list specific configurations
- list the palette of objects and behaviors from which puzzles are created
- describe how game controls shift from one mode/level to another
- separate out technical aspects! (these go in technical design doc)
- describe GUI (graphical user interface)

design document: artificial intelligence

- describe how the world reacts to players' actions
- and also how the world may change on its own, not in response to player (e.g., when player isn't doing anything)

design document: game elements

- palette for level designers
- parts that will be brought together to create compelling experience for user
  - characters
  - items (things they can pick up)
  - objects/mechanisms (things they can do, e.g., open a door)

design document: story overview

- easy-to-read narrative
- not too detailed
- quick way to understand the context and "big picture" of the game

design document: game progression

- may be longest section of document
- go through events players experience, how they change and progress
- guide for artists and level designers
- be descriptive about how level will affect players, not just "it is difficult"
- some games have stages instead of levels. break down stages here.
- some games have neither—in which case this section may not be necessary

design document: system menus

- out-of-game stuff, e.g., main menu, preferences, etc.
- describe interface and how user will interact with it, e.g., mouse clicks

common mistakes

- most important thing is to communicate your vision of the game to the reader
- common mistakes include:
  - too short, brief, high-level
  - too long, overly-detailed story, no game play details
  - too much implementation detail
  - no consideration of technology
- know that document is DYNAMIC and will evolve as game develops

to do

- work on homework assignment for unit III, which is due November 7