

# Game Systems and Mechanics



# Admin



- Please read chapters 7,8&9
- (pages 109-143) for this discussion
- Quiz
- Schedule for rest of semester.

# The complexity of the real world



- If you were to represent a student in an Object Oriented program how would you do it?
  - What data would you represent?

# The complexity of the real world



- If you were to represent a student in an Object Oriented program how would you do it?
  - What data would you represent?
  - Why?

# The complexity of the real world



- If you were to represent a student in an Object Oriented program how would you do it?
  - What data would you represent?
  - Possible data:
    - Why yours and not other data?

Height	GPA	# of Credits Earned
Age	Weight	Name
Student ID	UserName	# of computers owned
Shoe Size	Hair Color	Hair Style
Home Address	High School	Eye Color

# Modeling for computers



- We have to pick what is important based on the domain we are modeling for
  - Student for grading program?
  - Student for Social Science research?
  - Student for background character in Game?
- And the student is just one game entity.
- Consider interacting systems

# What are the systems?



- Exercise from recent book:
  - Look at this picture
  - What kinds of systems would you need to model this in a game?



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# What are the systems?



- Exercise from your book:
  - Look at this picture
  - What kinds of systems would you need to model this in a game?
- Potential answers
  - City layout
  - Commerce
  - Law
  - Traffic
    - Including public transportation
  - Weather
  - Plant growth for potted plants
  - Others that you found?

# Abstracting away the details of reality



- Games must abstract away some of the details of reality
  - Even really 'deep and complex games' like Dwarf Fortress or Shadow Empire.
    - Which feature political, diplomatic, military, weather, and military systems
    - Even these, which are too complex for any but the most dedicated gamers, have to abstract away many things.

# The city street equivalent



- This impressionist painting of a city street gives you the feel of the street
  - Without the detail of the previous picture
  - We build game mechanics to model systems in a similar manner.



# From real life into a game



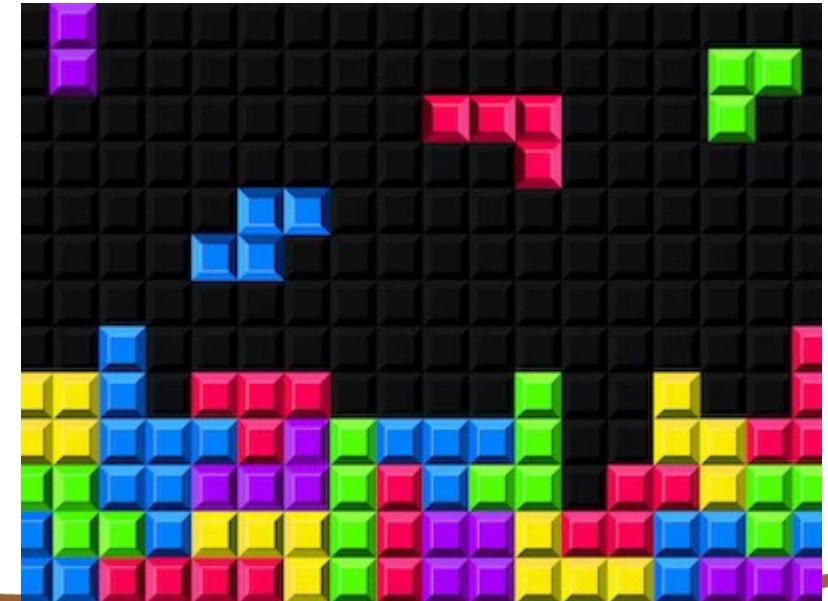
- Often we can take one aspect or system from life and make it a game mechanic
  - Sometimes an entire game
  - Sometimes one mechanic in a larger game
- What kind of a game mechanic might be inspired by this picture?



# From real life into a game



- What kind of a game mechanic might be inspired by this picture?
- Maybe this as a stand alone game



# From real life into a game



- What kind of a game mechanic might be inspired by this picture?
- But in old RPGs from the beginning of the 2000s was a mechanic



# Distilling Life into systems



- When distilling life into systems
  - We want to eliminate the un-fun parts
- Example from book:
  - Throwing, running, using sticks and working together are all etched into our natures from our ancestors hunter-gatherer days.
  - But no one wants to hunt a bear with the rest of your extended family with sticks and stones any more
  - So how did we distill these activities into game systems?

# Distilling Life into systems



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  - But no one wants to hunt a bear with the rest of your extended family with sticks and stones any more
  - So how did we distill these activities into game systems?
    - Baseball, Cricket, Lacross, Field Hockey, Hockey,
    - Others?

# Games and Stories



- Quote from your book:
  - "It is not the story we put in the game that matters; it's the story the players get out of the game that matters."
  - 
  - Sometimes story is important to the design of the game
  - But story is more often important to the players of the game
    - The 0-3 comeback to win the best of 7 series.
    - Stories stay with the game consumers for so much longer.

# Coming up with game ideas



- We've talk about game systems, players and more
- What about coming up with ideas
  - same as for any creative activity
    - go with what you know and expand on it
  - learn about something
    - find that special sub activity that you can expand on
    - my wife and ideas for the class

# Coming up with Ideas



- preparation
  - learn all you can about a topic
- incubation
  - working over ideas in subconscious
- insight
  - a-ha!
- Evaluation
  - was is really a-ha? or a spork?
- Elaboration
  - 1% insiration 99% persperation: now make it work

# Look at prior work



- Exercise: Look at an existing game
- How did this game formalize some aspect of life?
  - and game-ize it?
- or some aspect of history?
- or literature?
- etc

# Brainstorming



- For those of you who haven't done brainstorming before
  - (how many? - this seems cyclical)
  - lay out challenge:
  - no criticism
    - totally bluesky and oddness
    - hey it works in music
  - change things around
  - keep things fun
  - put it up for all to see
  - Quantity not quality
    - leaders will winnow later
  - don't let session drag on



- Guild name generator approach
  - old PARC playon group
    - Modern successor: [https://www.fantasynamewgenerators.com/guild\\_names.php](https://www.fantasynamewgenerators.com/guild_names.php)
    - Or maybe "Hey chat GPT give me a good guild name"
  - write ideas on index card
  - put in bowl
  - pull out a few and see what you can get
- mind mapping
  - semantic network model
- stream of consciousness

## Time to winnow some ideas



- Often have to winnow the idea from brainstorming
- Technical feasibility
  - can we do that between now and launch with today's tech
- Market Opportunity
  - world wide/nation-wide buying trends
    - building destruction games not popular after
      - bombings/huge earthquakes etc
    - Stock market games
      - after major market crash
    - etc.
- save the idea for another time

# More Realities



- Artistic considerations
  - yeah it will sell, but I don't want to devote the next 2 years to that!
- Business restrictions
  - you have a team and a budget
    - better to do a smaller game well than a big game poorly.

# From Ideas to game



- Two approaches
  - take existing mechanics for genre
    - keep what works and throw out rest
    - feature innovation
    - bonus
      - attract genre core audience
    - Used to be Blizzard model
  - Invent a new genre
    - build a completely new formal structure
    - could be a dud or course be wild success
    - tetris/Will Write/Sid Mier/MineCraft etc

# Design A lot



- Design and practice
  - often won't get it right first time
  - learn from failure
  - each dead end project is great learning experience
    - more than complete “so what” game
    - After all game companies often kill as many as 60% of games
  - answer all the questions
    - is it fun?