

Computer Graphics for Games

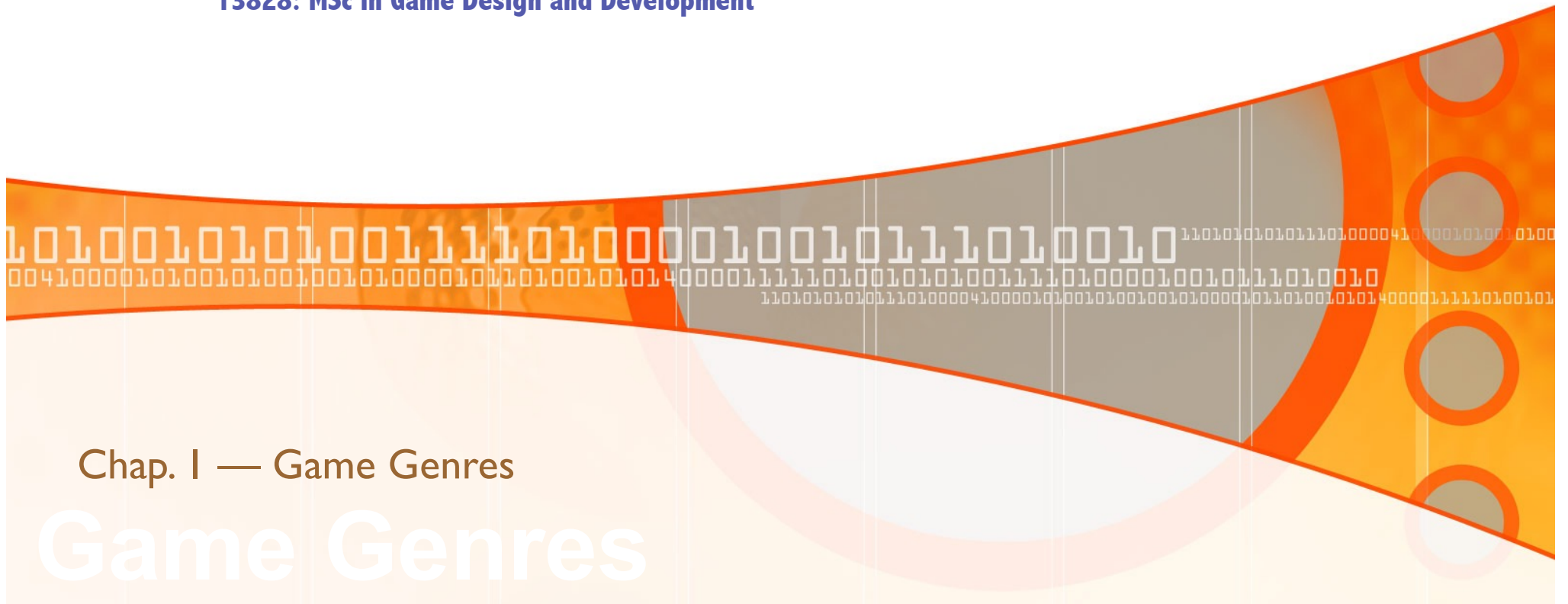
Video Game Technologies

14475: MSc in Computer Science and Engineering

13828: MSc in Game Design and Development

Chap. I — Game Genres

Game Genres



Outline

- Objectives
- The concepts of computer game, console game, and video game.
- Game genres:
- Discussion

Objectives

- To distinguish a computer game from a video game and a console game
- To distinguish amongst several types or genres of games
- To become games a serious matter



Definitions (taken from Wikipedia)

- A **computer game** is a computer-controlled game.
- A **video game** is a computer game where a video display such as a monitor or television is the primary feedback device.
- The phrase **interactive entertainment** is the formal reference to computer and video games.
- In common usage:
 - **Computer game** or a **PC game** is played on a PC
 - **Console game** is played on a device specifically designed for gaming
 - **Video game** has evolved into a catchall phrase that encompasses the above along with any game made for mobile phones, PDAs, etc.



Game genres

adventure games; action games; action-adventure games; platform games; fighting games; first-person shooter games; real-time strategy games; turn-based strategy games; role playing games; massively multiplayer online games; stealth games; survival horror games; simulation games; racing games; sports games; rhythm games; puzzle games; board games; educational games; serious games.

Games are often classified into genres, which purport to define games in terms of having a common style or set of characteristics, e.g. as defined in terms of perspective, gameplay, interaction, objective, etc.

However, the classification of games is not always consistent and can be somewhat arbitrary. Does this really matter?

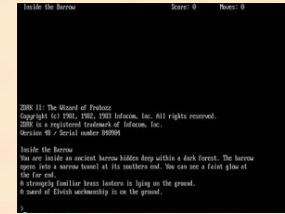
For some food for thought read
Wittgenstein's Philosophical Investigations
http://en.wikipedia.org/wiki/Philosophical_Investigations



Adventure games

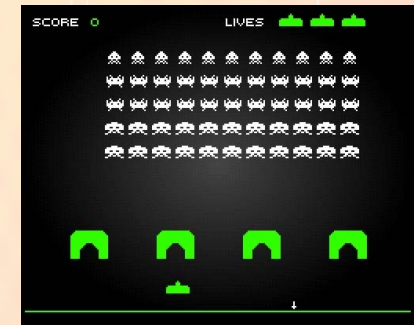
- Typically the player is the protagonist of a story and in order to progress must solve puzzles. The puzzles can often involve manipulating and interacting with in-game objects, characters, etc.
- Text-based adventures and graphical
- **Examples:**
 - **Zork**
 - **King's Quest**
 - **Grim Fandango**
 - **Fahrenheit**

You can play the original Zork at:
<http://thcnet.net/error/index.php>



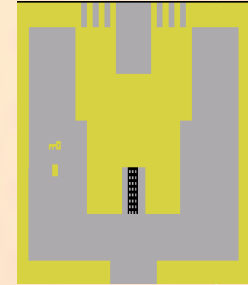
Action games

- A number of other action-oriented genres can be broadly classified as belonging to this genre. Action games are typified by fast-paced events and movement which often have to be performed reflexively.
- Games such as **Pong** and **Space Invaders** initially defined the genre.



Action-adventure games

- Action-adventure games can be described in terms of a blend of the characteristics associated with both adventure and action games, i.e. often involving both exploration and puzzle solving alongside fast-paced action sequences.
- **Adventure** on Atari 2600 can be considered as initially defining this genre.
- Other notable (more recent) examples include:
 - **Legend of Zelda**
 - **Jak 3**
 - **Metroid Prime 2**



Platform games aka platformers

- This genre often requires the protagonist to run and jump between surfaces (i.e. platforms) whilst avoiding game objects and the detrimental effects of gravity.
- Traditionally, platform games were side-on 2D in perspective and very popular on earlier gaming platforms.
- The genre has declined in popularity in recent years, although some titles have successfully redefined the genre to include 3D environments.
- Exemplos:
 - **Pitfall!**
 - **Super Mario Bros**
 - **Sonic the Hedgehog**
 - **Super Mario 64**
 - **Tomb Raider**
 - **Prince of Persia**



Fighting games

- In fighting games the player typically fights other players or the computer in some form of one-on-one combat.
- Notable classics include:
 - **Double Dragon**
 - **Mortal Kombat**
 - **Street Fighter**
- More recent renditions include:
 - **Virtua Fighter**
 - **Tekken**



First-person shooter (FPS) games

- Action games where the player is “behind the eyes” of the game character in a first-person perspective. Although a number of FPS games also support third-person views.
- Most FPSs are fast-paced and typically require actions to be performed reflexively.
- Notable examples include:
 - **Wolfenstein 3D**
 - **DOOM**
 - **Half-Life**
 - **Far Cry**
 - **F.E.A.R.**



Real-time strategy (RTS) games

- RTS games typically defined a number of goals around resource collection, base and unit construction and engagement in combat with other players or computer opponents who also share similar goals.
- Emphasis is often placed upon managing logistics, resources and production.
- Notable examples include:
 - **Dune 2**
 - **Command and Conquer**
 - **Warcraft**
 - **Age of Empires**



Turn-based strategy games

- Turn-based games share similar aims to real-time strategy games although players take turns in much the same way as with many traditional board games.
- Notable examples include:
 - **Civilization**
 - **X-COM**
 - **Master of Orion**
 - **Jagged Alliance**
- There is a recent trend towards hybrid games that include elements of both turn-based and real-time games, e.g. **Rome Total War**



Role playing games (RPGs)

- Originally started out as video games based on pen and pencil games like Dungeons and Dragons. A fantasy theme is often retained.
- Often characterised in terms of providing the player with flexibility in terms of character development, problem resolution, etc.
- Notable examples include:
 - **Final Fantasy**
 - **Baldur's Gate**
 - **Wasteland**
 - **Neverwinter Nights**
 - **Elder Scrolls Oblivion**



Massively multiplayer online role-playing games (MMRPGs)

- Typically a RPG set in a persistent virtual world populated by thousands of other players. MMORPGs can be viewed as evolving from text-based MUDs in mid-to-late 1990s.
- The first highly popular MMORPG was **Ultima Online** whilst **World of Warcraft** holds the honor of being the current most popular.
- **Aside:** Apart from MMORPGs there are also sizeable communities around online first person shooters and strategy games, e.g. Battlefield 2



Stealth games

- Games which can be defined by a focus on subterfuge and/or precision play.
- Notable examples include:
 - **Metal Gear**
 - **Thief**
 - **Splinter Cell**



Survival horror games

- Often an action-adventure or first-person shooter with a focus on fear and survival and adopting many of the elements of traditional horror fiction.
- **Alone in the Dark** provides a notable early example, whilst the **Resident Evil** series is a current notable example.



Simulation games

- Many simulation games aim to simulate physical activities such as flying an aircraft (**Microsoft Flight Simulator**), playing golf or football etc. (sometimes with as much realism as possible).
- Other forms of simulation game aim to provide simulations of forms of management, e.g. football management games, city management (**SimCity**), railroading, etc.
- Often the simulation is intended to be fun as opposed to accurate, e.g. **Wing Commander** and **X3** are notable space combat simulation games
- Others popular games in this category include **The Sims** series where the player 'controls' the lives of computer characters.



Racing games

- Racing games typically place the player behind the wheel and involve competing in a race against other drivers and/or time. Two sub-genre can be identified: simulation and arcade.
- Notable examples include:
 - **Pole Position**
 - **Mario Kart**
 - **Gran Turismo**
 - **Need for Speed**
 - **GTR**



Sports games

- Games that simulate the sporting experience – including sports such as football, baseball, golf, boxing, skate boarding, ice hockey, tennis, etc.
- Some sports game place the emphasis on the experience of playing the sport, whilst others focus on the strategy behind the sport.
- Notable examples include:
 - **John Madden Football**
 - **Tiger Woods' Golf**
 - **Pro Evolution Soccer**
 - **Championship Manager**



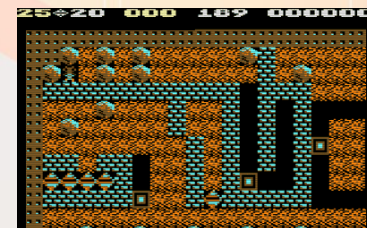
Rhythm games (music games)

- Rhythm games require the player to undertake some action (e.g. follow a sequence of movement or develop specific rhythms) in response to some stimulus (often music).
- Often the games require specialised controllers such as dance pads.
- **Dance Dance Revolution** is the best known example.



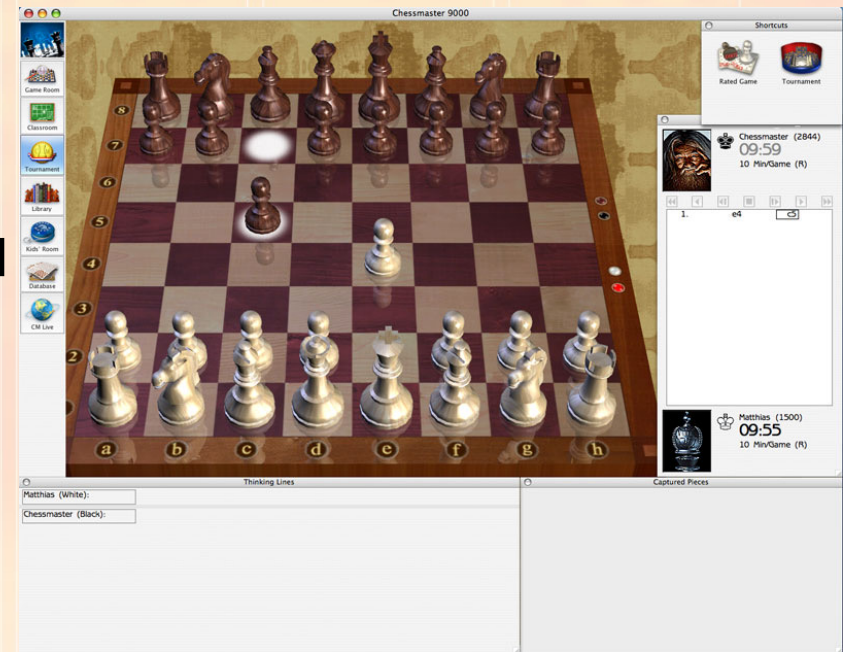
Puzzle games

- Puzzle games often require the player to solve puzzles or problems and can involve the exercise of logic, memory, pattern matching, reaction time, etc.
- Notable examples include:
 - **Tetris**
 - **Lemmings**
 - **Minesweeper**
 - **Boulder Dash**



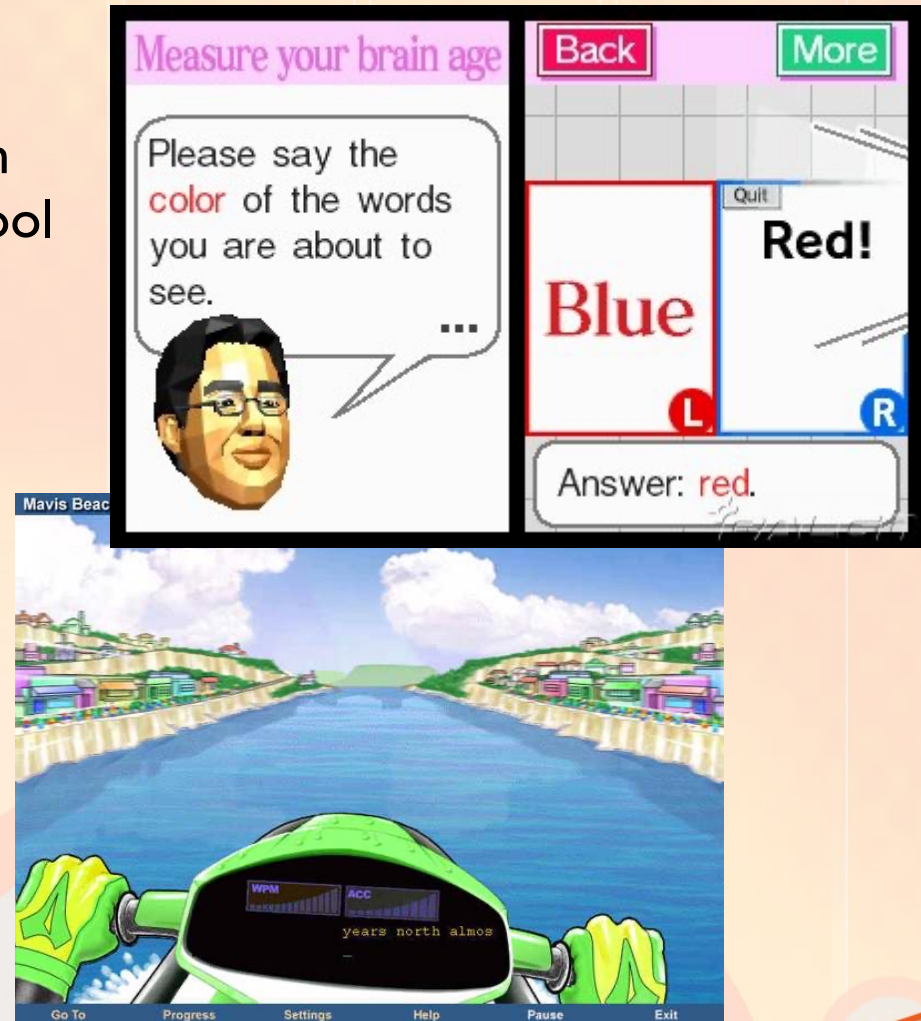
Traditional games

- Traditional games represent computerised versions of board, word, and card games and include games such as chess, checkers, backgammon, mah-jongg, go, scrabble, etc.



Educational games

- Educational games are designed to teach new skills which can span from pre-school onwards.
- Notable examples of this genre include:
 - **Carmen Sandiego series**
 - **Mavis Beacon Teaching Typing**
 - **Dr Kawashima's Brain Training**



Questions & Further reading:

- Difference between strategy and tactics?
- Difference between First-Person Shooter (FPS) and Third-Person Shooter?
- <http://www.thocp.net/software/games/reference/genres.htm>
- http://www.lgrace.com/documents/Game_types_and_genres.pdf
- <http://tvtropes.org/pmwiki/pmwiki.php/Main/VideoGameGenres>
- <http://www.robinlionheart.com/gamedev/genres.xhtml>



Next class:

- Chapter 3: Game Engines

- <http://www.giantbomb.com/profile/michaelenger/blog/game-engines-how-do-they-work/101529/>
- <http://www.develop-online.net/news/the-top-14-game-engines-the-list-in-full/0114330>
- <http://www.develop-online.net/tools-and-tech/the-top-16-game-engines-for-2014/0192302>
- <http://html5gameengine.com/>
- <http://www.godotengine.org/wp/features/>
- <http://citrusengine.com/>

