Comp 388/488 - Introduction to Game Design and Development

Spring Semester 2017 - Week 13

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Games and dramatic elements

considerations of game characters

- Characters in our games may also exhibit certain traits
  - *often unique to an interactive gaming environment*

- e.g. ability of a protagonist to become an agent in the game
  - *and channel empathy from a player to the game*

- traits of a character, in particular a game's protagonist
  - *need to be considered at each stage of a game's design and development*

- help us question motivation for a particular aspect of a game
  - *perhaps a backstory that leads to a mini-challenge for our character*

- need to consider how the character as agent enables our player to complete this mini-challenge
  - *what is the justification for including this mini-challenge in our game?*

- if we start to simply add challenges, conflict, or perhaps obstacles
  - *without a consideration of agency or motivation*
  - *a game may become disjointed and lack flow for the experience*
  - *the story, its characters, and gameplay may not make sense to the player*

- such characters need not be preconceived or developed by the game's designer

- avatars may also play a role as agent within a game
  - *e.g. in Blizzard's World of Warcraft*

- avatars will often be created, designed, and managed by a player

- players may invest a great deal of time, energy, and resources into such avatars

- agency and empathy provided by these characters
  - *will often fuel a player's gameplay and social role in a gaming environment*
  - *such empathy may be increased with greater player engagement with avatars...*

Video - World of Warcraft

avatars

- Original article - BBC News - World of Warcraft: Finding love with an online avatar

- Source - YouTube

Games and dramatic elements

characters and classes in Diablo

- interesting and fun aspect of original Diablo game was use of *classes* for characters

- instead of simply providing a single option for the protagonist
  - *Diablo provided three classes*
  - *classes = Rogue, Sorcerer, and the Warrior*

- expanded to six classes for Diablo III with various expansion packs
  - *expected to increase to seven in 2017*

- each character class provides different attributes, skills, and agency for the game

- not simply a matter of providing different types of characters and skills
  - *allows different players to empathise in varying ways with the game*

- no sense of one size fits all
  - *a player is provided with different ways to enjoy and complete the game*

- choice of game agent may also introduce variant paths through the game

- a player is provided with different perspectives on the story, challenges, and general gameplay

- many other games that employ a similar option for characters
  - *e.g. Nintendo's Mario Kart selector...*

Image - Mario Kart

select a character and kart

Nintendo's Mario Kart

Games and dramatic elements

characters and emergent systems

- we may introduce *emergent systems* to our gaming environment
  - *creating a sense of autonomous, generated gameplay and challenge*

- add a semblance of *free will* to our characters
  - *creates a noticeable variant to standard player control*

- a traditional character's agency
  - *may be directly influenced, monitored, and controlled by the player*

- introduction of *free will* for certain characters
  - *control limitations may no longer apply*

- AI-controlled characters or emergent systems
  - *may now start to exhibit examples of autonomous behaviour*

- potential for interesting conflict may arise as a simple result of expectations
  - *e.g. player control vs a sense of limited free will for certain characters*

- The Sims - Free Will

Video - The Sims 4

Free Will

- Source - Sims 4 100% free will - YouTube

Games and development

Consider the following game characters and objects,

- a mediaeval knight
  - *carries a sword, may ride a horse, fighting skills, finite health...*

- a squire
  - *attends to the knight*

- a semi-intelligent/aware mob object - e.g. an ogre
  - *carries a club, may ride horse-like animal, fighting skills, renewable health...*

- a series of huts, caves &c. in the gaming world

Each of these characters or objects may be pre-defined or created with a sense of free will.

Define the following,

- rules for each character and object
- a brief outline for a game with these characters and objects

Then consider the following,

- how might free will affect the rules and outline for your initial game?
- what type of unexpected glitches, interactions, and features may result due to free will in this game?

Python and Pygame - Game Example I

fun game extras - add explosions to player's ship

- add explosions to a collision with a player's ship
  - *again, update game loop for these collisions*

```python
# add check for collision - enemy and player sprites (True = hit object is now deleted from game window)
collisions = pygame.sprite.spritecollide(player, mob_sprites, True, pygame.sprite.collide_circle)
# check collisions with player's ship - decrease shield for each hit
for collision in collisions:
    # decrease player's shield for each collision
    player.stShield -= 20
    # add animation for explosion images if collision
    explosion = Explosion(collision.rect.center)
    # add explosion sprite to game sprites group
    game_sprites.add(explosion)
    # create a new mob object
    createMob()
    # check overall shield value - quit game if no shield
    if player.stShield <= 0:
        running = False
```
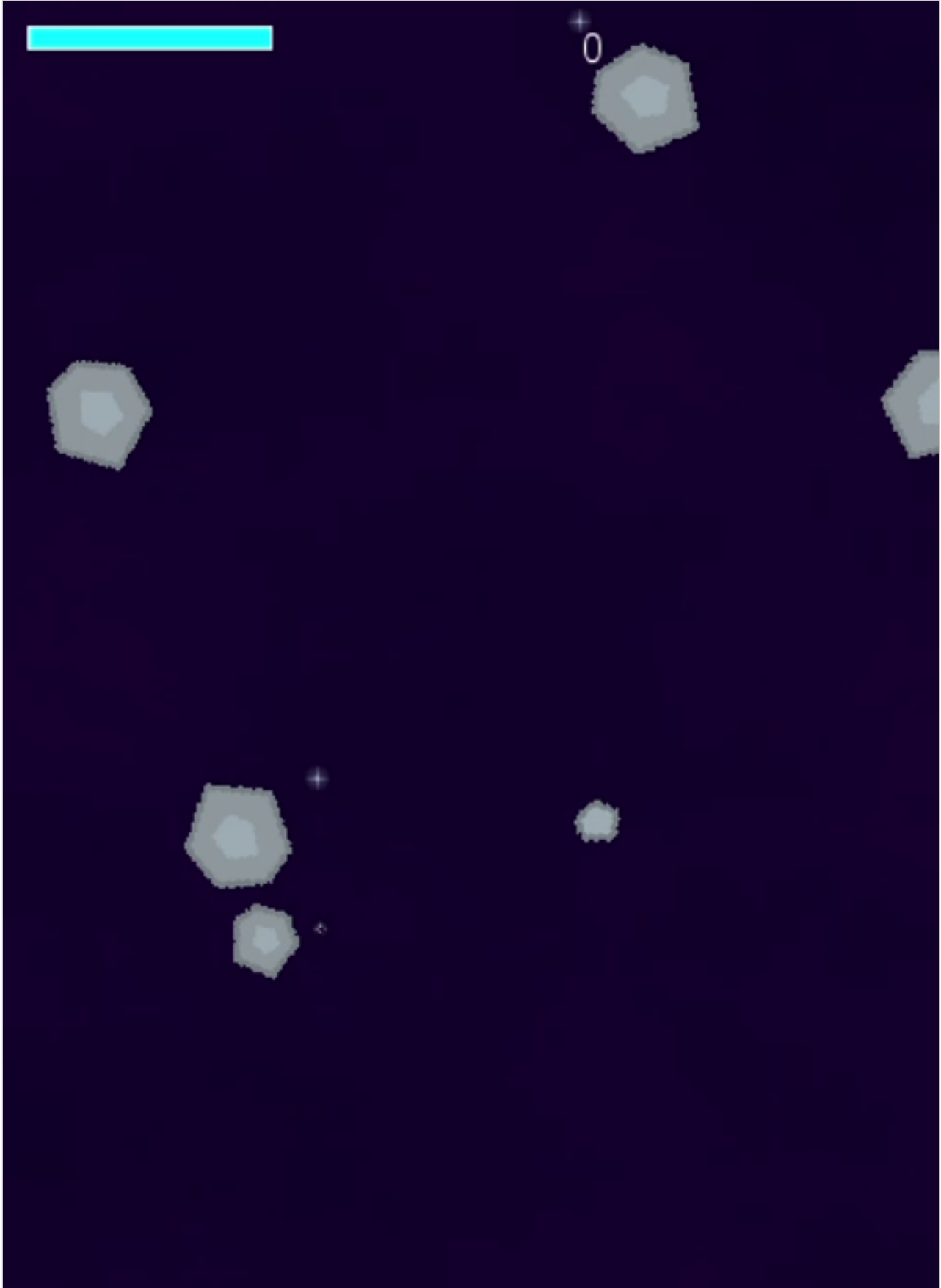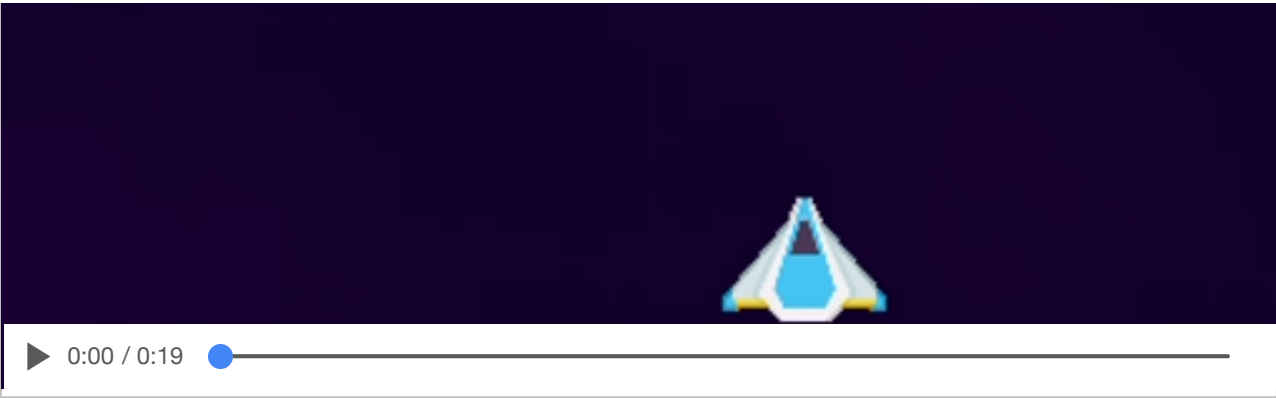
Video - Shooter 1.2 - Part 2

add some fun explosions - player's ship

0:00 / 0:19

Python and Pygame - Game Example 1

fun game extras - scale explosion images - basic scale

- still a lingering issue with these collisions and explosions...

- explosions are not reinforcing the gameplay for our shooter style game
  - *no differentiation in the relative size of an explosion*
  - *no semblance of feedback to our player*

- one option to this issue
  - *perhaps add standard scale transform to image for each explosion sprite object*

```python
# explosions
explosion_imgs = []


# iterate over explosion images in directory
for i in range(9):
    file = 'explosion{}.png'.format(i)
    # load image from os
    expl_img = pygame.image.load(os.path.join(img_dir, file)).convert()
    # set colour key for image
    expl_img.set_colorkey(BLACK)
    # append to specified list for explosion images
    explosion_imgs.append(expl_img)
```

- render a smaller, less overwhelming explosion for each collision

Python and Pygame - Game Example 1

fun game extras - scale explosion images - relative scale - part 1

- useful to be able to scale these explosions relative to the actual size of a given sprite object
  - *e.g. a smaller relative explosion image for a smaller mob object*
  - *or, a relatively sized explosion against the player's ship*

- update our class for the `Explosion` object
  - *dynamically modify each explosion image in the animation relative to a specified size*

- scale each frame of explosion animation to match the size of the collison object, e.g.

```python
# create a generic explosion sprite - use for asteroids, player explosions &c.
class Explosion(pygame.sprite.Sprite):

    # initialise sprite

    def __init__(self, center, size):

        pygame.sprite.Sprite.__init__(self)

        # specify size for explosion sprite

        self.size = size

        # get initial image for explosion

        self.image = pygame.transform.scale(explosion_imgs[0], self.size)
...
```

- start by adding a parameter for `size`
  - *pass a variable size for each collision object*

- use this size to scale the initial image for the explosion animation

Python and Pygame - Game Example 1

fun game extras - scale explosion images - relative scale - part 2

- each frame of the animation will also require scaling of the explosion image, e.g.

```python
# change image as time progresses for explosion sprite

def update(self):

    # get current time

    now = pygame.time.get_ticks()

    # check if enough time has passed between animations

    if now - self.last_update > self.frame_rate:

        self.last_update = now

        # if enough time passed - add 1 to frame

        self.frame += 1

        # check if end of explosion images reached

        if self.frame == len(explosion_imgs):

            # kill if end of image reached

            self.kill()

        else:

            center = self.rect.center

            self.image = pygame.transform.scale(explosion_imgs[self.frame], self.size)

            # update rect for image

            self.rect = self.image.get_rect()

            self.rect.center = center
```

- as we output each frame of the explosion animation
  - *scale this image to match the passed `size` for the explosion object*

Python and Pygame - Game Example 1

fun game extras - scale explosion images - dynamic collision size

- different size mob objects will have a matching explosion animation
  - *update in the game loop, e.g.*

```python
# add check for sprite group collide with another sprite group - projectiles hitting enemy objects - use
collisions = pygame.sprite.groupcollide(mob_sprites, projectiles, True, True)
# add more mobs for those hit and deleted by projectiles
for collision in collisions:
    # calculate points relative to size of mob object
    game_score += 40 - collision.radius
    # play explosion sound effect for collision
    explosion_effect.play()
    # get size of collision object
    col_size = collision.rect.size
    #print("collision size = " + str(col_size))
    # add animation for explosion images if collision
    explosion = Explosion(collision.rect.center, col_size)
    # add explosion sprite to game sprites group
    game_sprites.add(explosion)
    # create a new mob object
    createMob()
```

- same for the player's object...

resources

- notes = extras-part1-explosions.pdf
- code = objectexplosions2.py

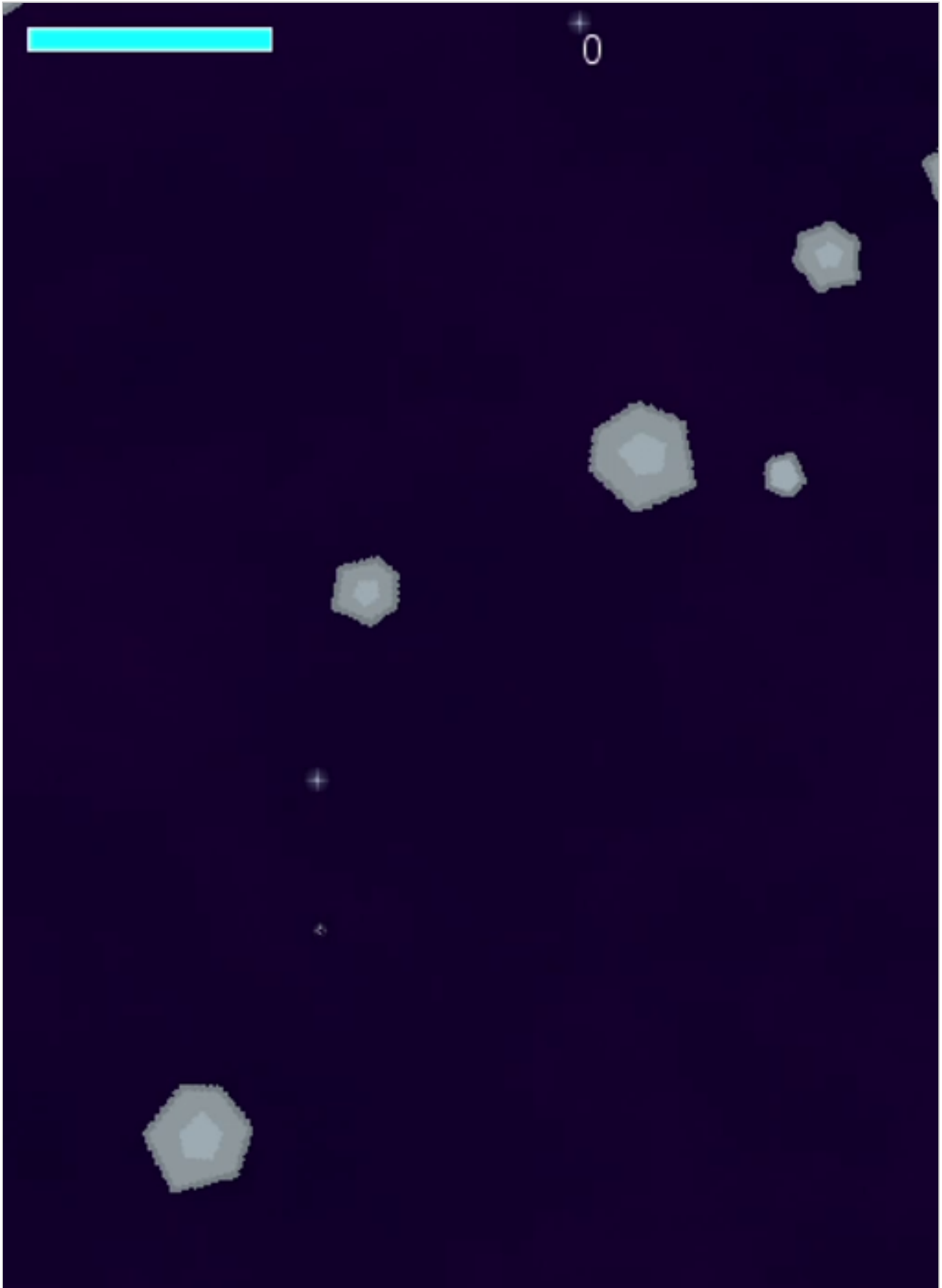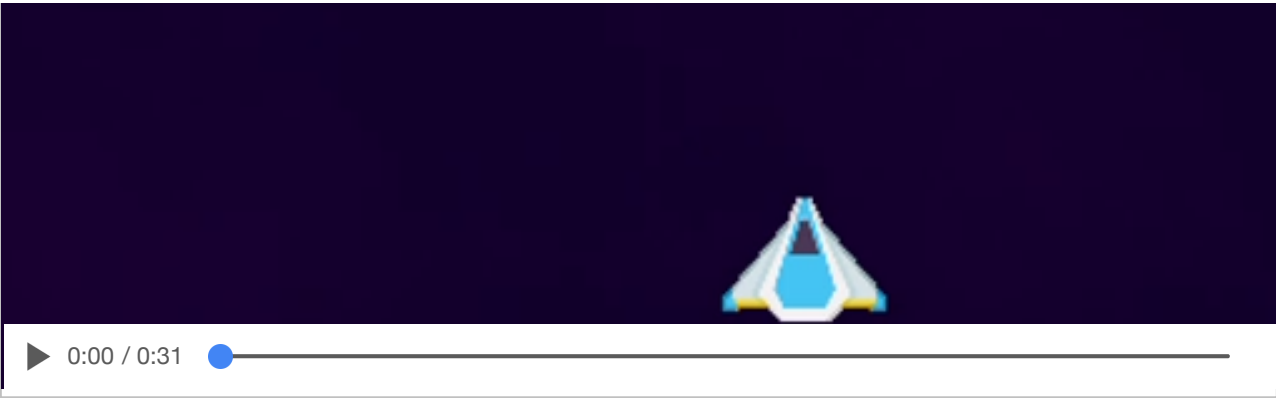***game example***

- shooter1.2.py
- add some fun explosions
  - *create sprite object for explosion*
  - *cycle through images to create explosion animation*

- *add explosion for each collision*

- extra explosions
  - *explode a player's ship for a collision*

- scale explosions
  - *rescale and size explosions in game window*

Video - Shooter 1.2 - Part 3

scale explosions

0:00 / 0:31

Game designers

Designer example - Jenova Chen

- Jenova Chen is a Chinese game designer and director, now based in Los Angeles, USA

- after creating an experimental game called *Cloud* with Kellee Santiago
  - *whilst a student at USC's Interactive Media Division*
  - *Chen briefly worked on Spore*

- Chen is best known for games such as
  - *Cloud, flOw, Flower*
  - *and most recently Journey*

- co-founded *ThatGameCompany* with Kellee Santiago

- landed a three game deal with Sony, which included *flOw*, *Flower*, and *Journey*
  - *games exclusive to PlayStation consoles*

- his games are known for experimental use of narrative and structure
  - *and attempts to simply push what we perceive as a game...*
  - *e.g. his development of Cloud as a student*

- his collaboration with Austin Wintory on the music for *flOw* and *Journey*
  - *represents a desire and commitment to integrate various dramatic elements*
  - *music, sound effects, shapes, colour &c. into the overall gaming experience*

- underlying trend and theme to the design of his games
  - *tries to make games that don't fit cultural preconceptions*
  - *interested in sparking universal emotions and feelings beyond culture...*

Resources

- Cloud
- flOw
- Flower
- Journey

- Journey - Wikipedia
- ThatGameCompany

Image - Journey

- Source - ThatGameCompany
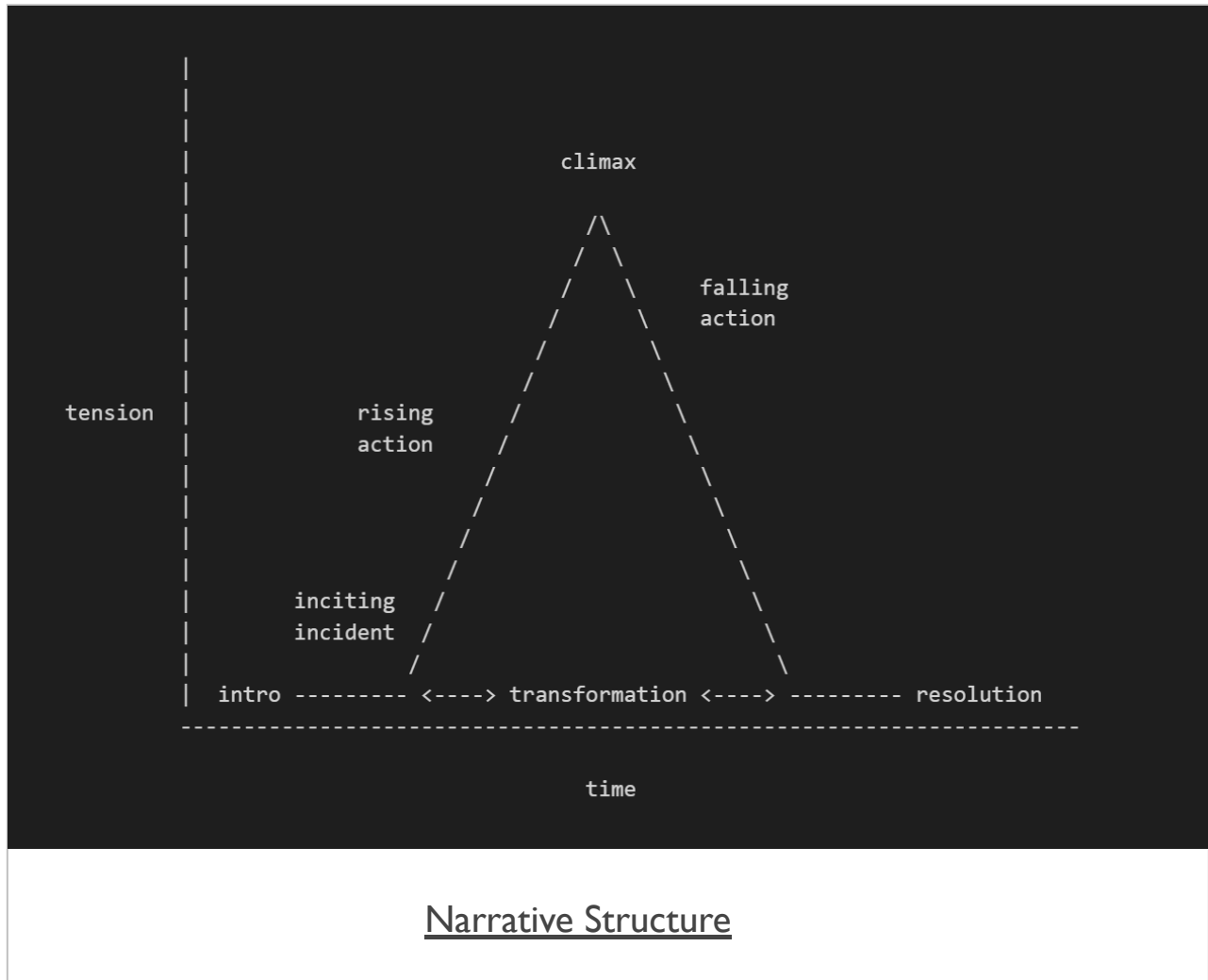
Games and dramatic elements

games and narrative structure

- **traditional drama** perceives the following categories as useful options for conflict
  - *a single character vs another single character*
  - *a single character vs their environment*
    - a character battling the forces of nature &c.
  - *a single character vs a machine*
    - many examples in movies...
  - *a single character vs their own inner demons*
    - a consideration of experience, morals, insanity &c.
  - *a single character vs perceptions of fate*
    - something is inevitable, bound to happen, can't be changed &c.

- a **game** will employ similar categories for its players, in particular the protagonist
  - *a single player vs another single player*
  - *a single player vs the game*
  - *and so on...*

- as these categories are played out in our games
  - *the sense of conflict they create will usually follow a discernible pattern*
  - *this pattern will escalate to a final resolution*

- escalating conflict will create a sense of tension in the gameplay
  - *usually matched and reflected in the story*

- gameplay may respond to the story, including corresponding elements
  - *such as music, visuals, speed, and a sense of risk*

- this tension will also tend to get worse, or more dramatic
  - *before it is resolved and gets better*

- this forms a classic **narrative structure** or **narative arc**
  - *it becomes a useful tool for storytelling in games*

- forms the framework and support for all dramatic media

- **games** *are not excluded...*

Image - Narrative Structure

conflict in a game's story

```
                |
                |
                |
                |                          climax
                |
                |                           /\
                |                          /  \
                |                         /    \        falling
                |                        /      \       action
                |                       /        \
                |                      /          \
      tension   |             rising  /            \
                |             action /              \
                |                   /                \
                |                  /                  \
                |                 /                    \
                |    inciting    /                      \
                |    incident   /                        \
                |              /                           \
                |   intro ---------- <----> transformation <----> ---------- resolution
                 -----------------------------------------------------------------------
                                         time
```

Narrative Structure

- Source - Building An Arc: Bringing Narrative Structure To Your DJ Sets

Games and dramatic elements

Journey to a narrative structure

- a recent example of narrative structure in gaming was the 2012 release *Journey*.
  - *designed by ThatGameCompany, and directed by Jenova Chen*

- its underlying design and story was inspired by *The Hero's Journey*
  - *a structure and outline for myth and story telling prescribed by Joseph Campbell*

- Campbell defined twelve stages on the *Hero's Journey*
  - *set a structure that follows the narrative arc along the path of the story*

- initial incident is an effective acknowledgement of the limits of the current environment
  - *the encompassing world for the hero*

- the hero must now leave this environment, this comfort zone of sorts
  - *embark into unknown, commonly dangerous territory*

- this journey will normally include many trials and tests
  - *the challenges we expect to introduce to many games*

- trials are not simply physical, but may also include
  - *aspects of temptation, mental reasoning, emotional dilemmas...*

- player will normally be expected to reach a defined low point on the journey
  - *the abyss that defines and shapes the counterpoint to the story and game*

- introduction of an extreme low point, the *abyss*
  - *allows the character to metaphorically die*
  - *then be reborn ready for the final challenges of the journey*

- the hero will then return to a point of calm and resolution
  - *transformed and free of the issues, fear, and doubts that initially defined them...*

Image - Journey

- Source - ThatGameCompany

Video - Journey

available on PS4

- Source - Journey PlayStation 4 Official Launch Trailer - YouTube

Games and development

For the earlier game, characters, and objects you defined, consider the following

- reduce this game's outline to its bare essentials
  - *i.e. which shapes, patterns, colours, objects &c. are still necessary to define your game's story?*

- outline the narrative structure for this game using these bare essentials
  - *where is the conflict in this story? the rising action, climax, falling action &c...*
  - *how is the resolution achieved for this game's narrative structure?*

Then, re-consider the role and influence of free will or emergent systems on this narrative structure

- what type of unintentional features, dead ends &c. may be introduced?
- how do you allow for such potential issues in your narrative structure?

Demos - Pygame

fun game extras

- objectexplosions2.py

Demos - Pygame - Game 1 Example

- shooter1.2.py

Games

- Diablo - Wikipedia
- Diablo III - console
- Journey - ThatGameCompany
- Journey - PS3
- Journey - Wikipedia
- World of Warcraft

References

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References - Pygame - Game Notes

- extras-part1-explosions.pdf

References - Various

- BBC News - World of Warcraft: Finding love with an online avatar

- Dubspot - Electronic Music Production and DJ School

- The Sims - Free Will

- ThatGameCompany - Hiring

Videos

- World of Warcraft - Finding love with an online avatar - YouTube