

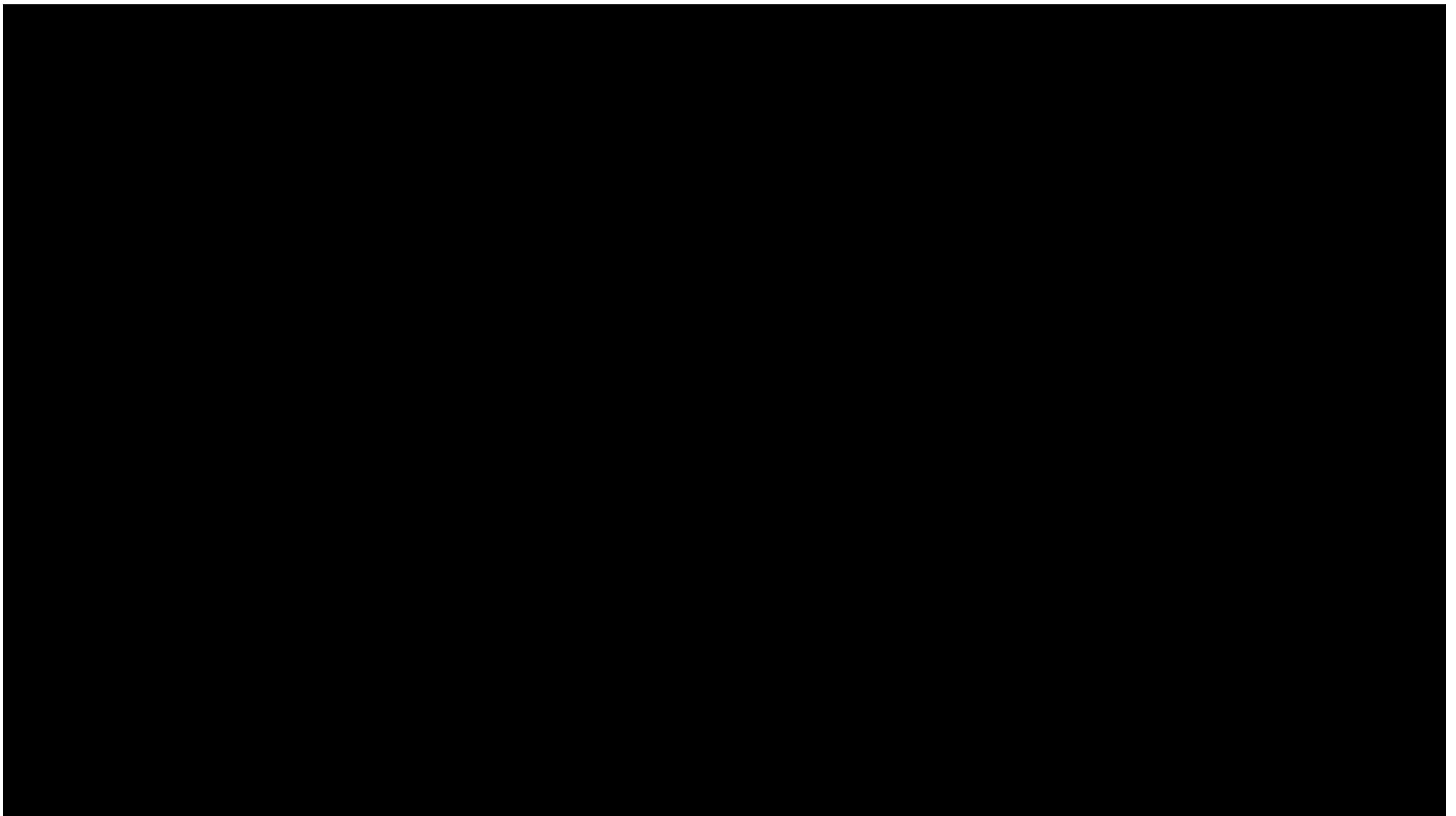


GAM320 - Creativity & Prototyping

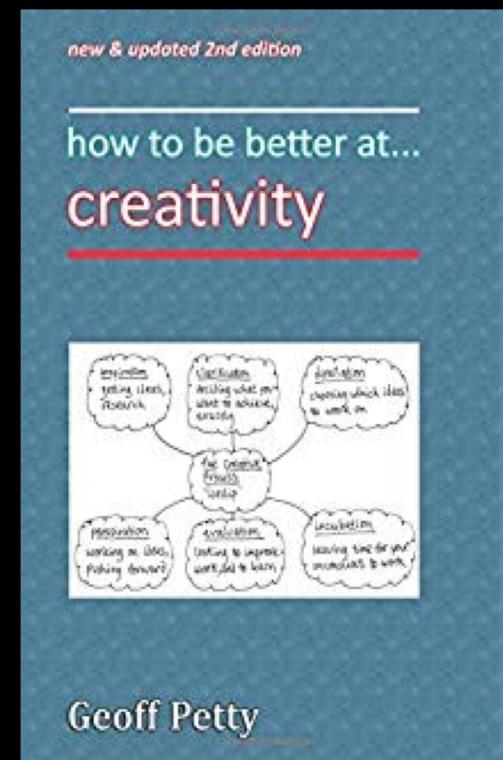
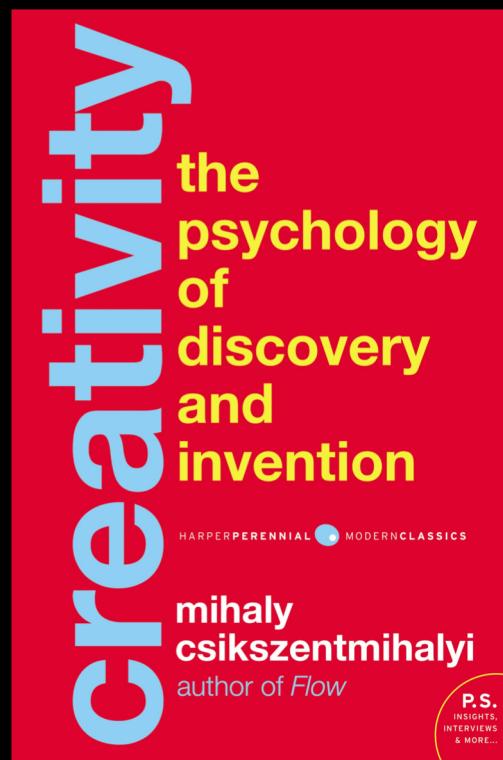
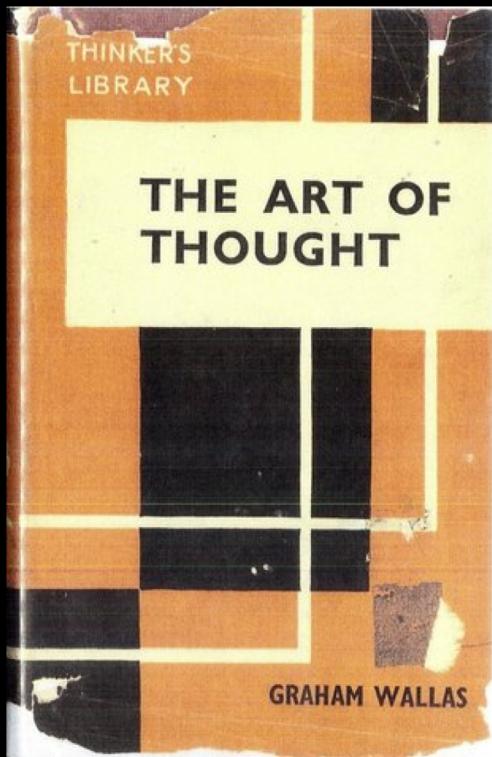
Brian McDonald

The Problem





Models of Creativity



Models of Creativity

Wallas Model

Preparation

Incubation

Illumination

Verification



Models of Creativity

Wallas

Preparation

Incubation

Illumination

Verification

Csikszentmihalyi

Preparation

Incubation

Insight

Evaluation

Elaboration



Models of Creativity

Wallas

Preparation

Incubation

Illumination

Verification

Csikszentmihalyi

Preparation

Incubation

Insight

Evaluation

Elaboration

Petty (ICEDIP)

Inspiration

Clarification

Evaluation

Distillation

Incubation

Perspiration



Practical Advice



Know your audience - Personas



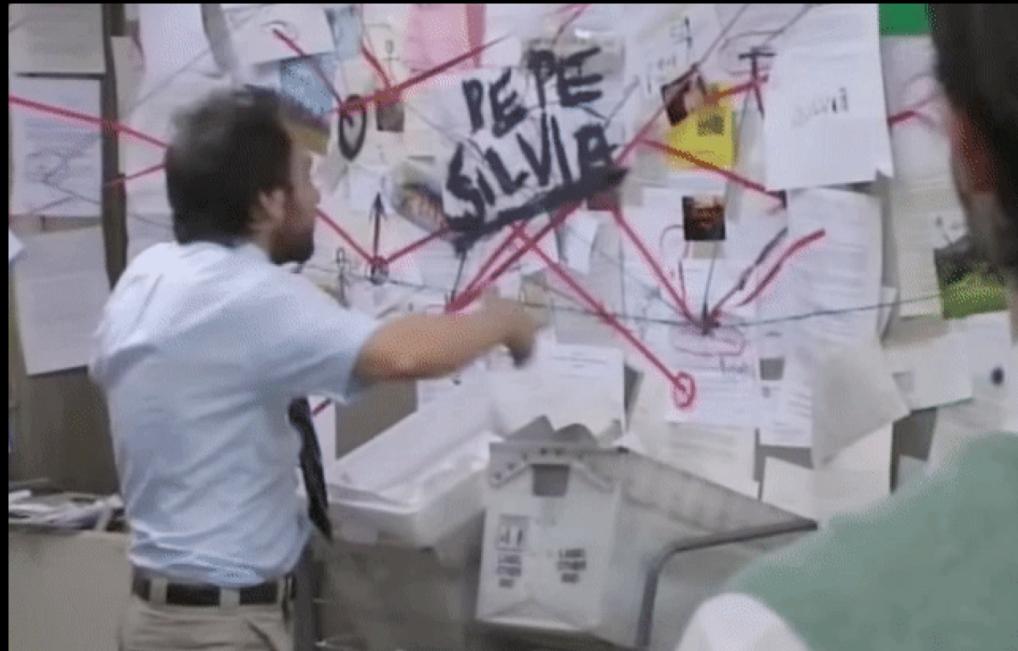
'I thought about studying architecture as I love design but I am very passionate about Games and interested in how industry and how they are made.'

Games Design Student GCU

Background	<ul style="list-style-type: none"><i>Maria moved to Glasgow 5 years ago from Prague with her family.</i><i>She works in a coffee shop part-time.</i><i>She writes her own blog on buildings she has visited and uses various social networking tools to circulate</i><i>Enjoys clubbing, travel, playing all types of games, currently revisiting favorite childhood game Pokemon</i>
Goals	<ul style="list-style-type: none"><i>To develop a portfolio of games</i><i>Possibly learn to sketch</i><i>Fit my studies in around work and other commitments</i><i>Internship placement abroad</i>
Technology	<ul style="list-style-type: none">Wordpress, Social Networking, Gaming, Creative Story writing tools



Ideation - Brainstorming



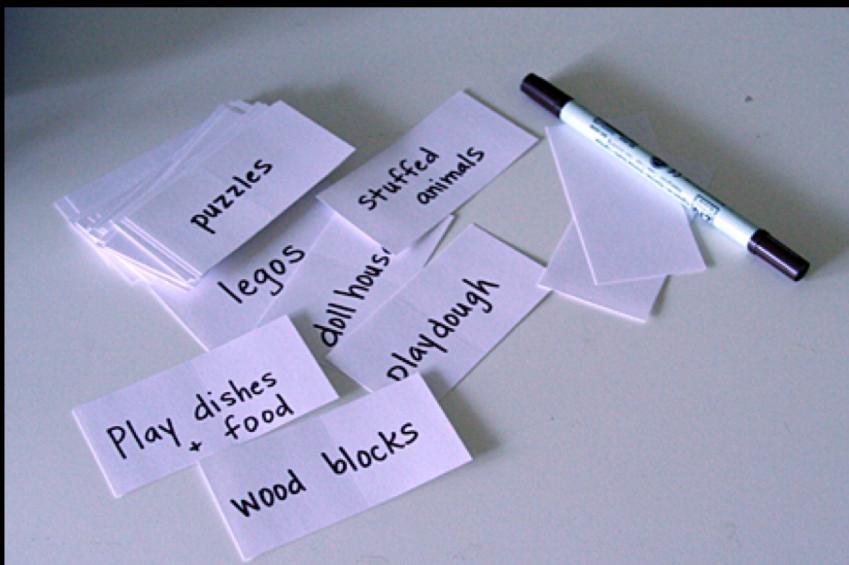
Brainstroming methods - List Creation



- Write out everything you can think of in a topic
- Process of writing them down helps you freely associate and organise
- Excellent for groups, gets everyone on the same page



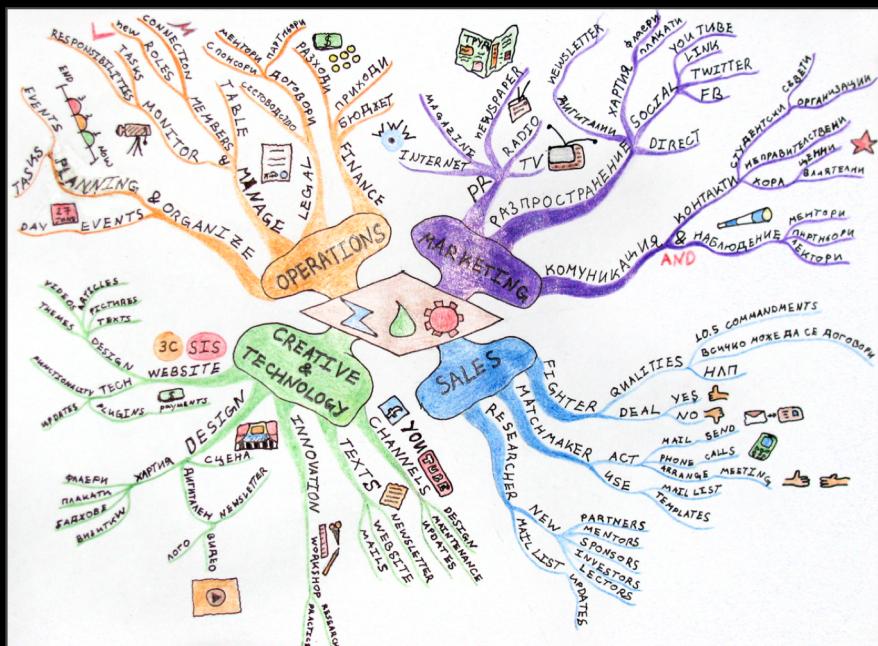
Brainstroming methods - Idea Cards



- Brings an element of randomness into the mix
- Take a deck of index cards, write a word on each one
- Shuffle them up, take two cards out and pair them



Brainstroming methods - Mind Maps



- Visual method to explore ideas visually
 - Start with a core idea and build linkages with connect ideas
 - Aids in pulling together a shared vocabulary about the game



Brainstroming methods - Stream of Conscious/Shout out



- Often better for individuals
- Sit down at a computer (or pen and paper), start writing anything that comes to mind for 10 mins.
- Shout Out is very similar, use a voice recorder and speak for 10 mins. Then go back and transcribe.



Brainstroming methods - Cut it Up



- Take a newspaper or magazine, go to any page, and cut random words and images
- Once you have a pile pieces, start playing with them, match them up to make game concepts.



Brainstroming methods - Research



- Useful for serious games and games that are grounded in a world
- Research a topic that interests you. Immersive yourself in a topic
- Even if your game isn't ground in the real world it might have real world analogues



The role of constraints

- At the Academy, you only have a few constraints
 - Time (deadlines)
 - Technology
 - Skillset
 - Team makeup
- Constraints are drivers for creativity, consider adding them into your project
 - Audience - The game should appeal to your Mother
 - Technology - Mobile game
 - Interaction - the game only uses one button



Prototyping



Prototyping

- The goal of a prototype is to answer some questions about your game or an approach
- It should be quick to develop, rough in terms of quality and be ‘throw away’
- You may have several prototype idea, consider splitting your team

Prototype 1 - Combat System

- 1 Programmer
- 1 Designer/Lead
- 1 Artist
- 1 Animator

Prototype 2 - Crafting System

- 2 Programmer
- 1 Designer/Lead
- 1 Artist
- 1 Writer



Prototyping tips

- Prototyping is not **Pre-Production**, in pre-pro you know what the game is going to be
- It is fine to fail, failure is part of the process
- Use previously created assets, greyboxes, basic shapes
- Test, Test, Test!
- Timebox everything
 - 2 weeks per prototype
 - $\frac{1}{3}$ of development time on prototypes
- Make prototypes on the tools you feel most comfortable with



Paper Prototypes



Paper Prototypes

- Advantages
 - Speed of development and iteration
 - Low barrier to entry
 - Collaborative
 - Iterative by nature
- Disadvantages
 - Tracking lots of information
 - Physical interfaces
 - Game rhythm issues



Digital Prototypes



Spiderman PS4 -

<https://twitter.com/KrisZadziuk/status/1039858710460473344>

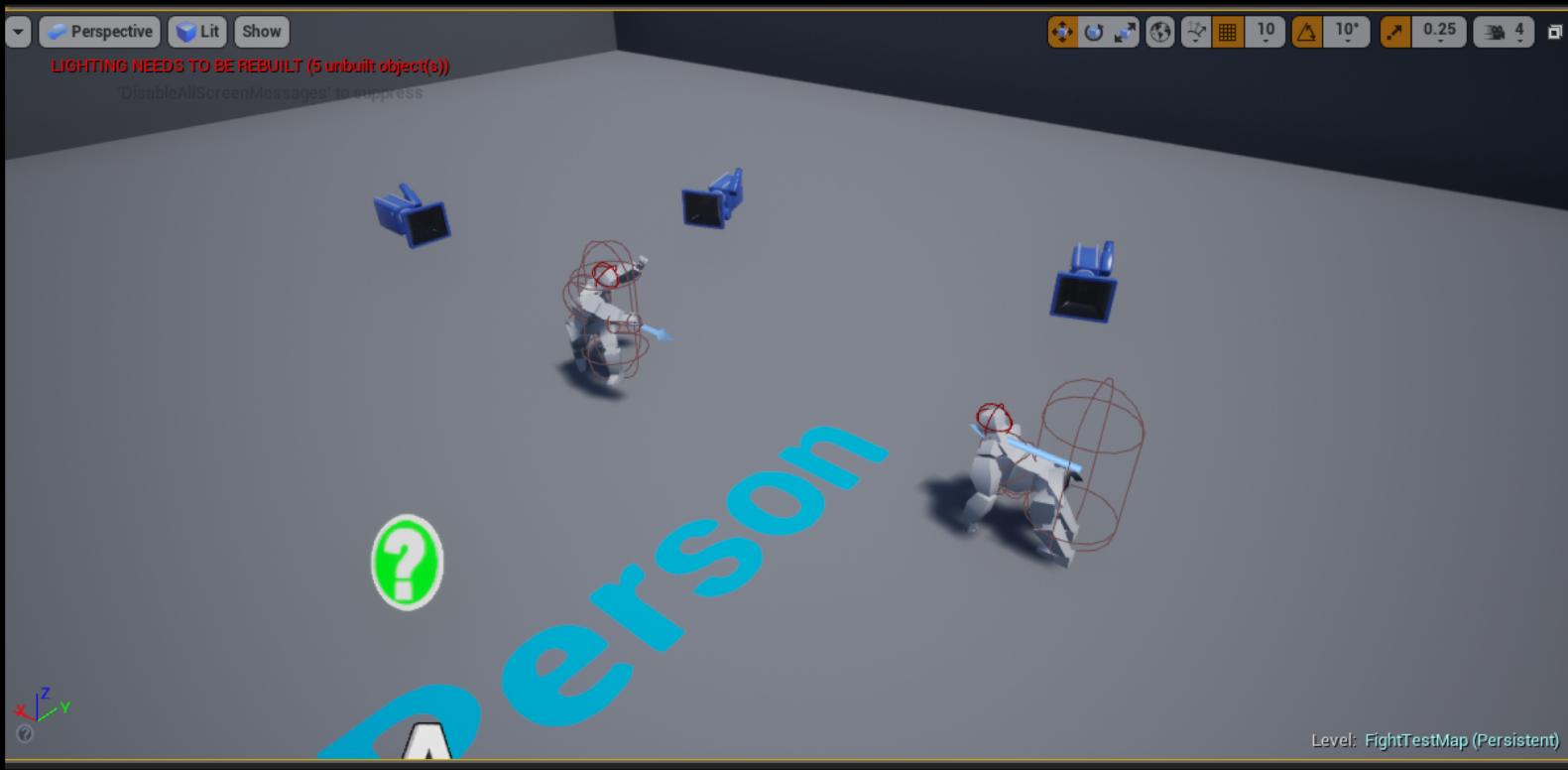


Digital Prototypes

- Mechanics
- Aesthetics
 - Storyboards
 - Concept art
 - Animatic
 - Interfaces
 - Audio
- Kinesthetics
 - Game Feel
 - Controls



Case Study



Team



- Me!
- Programmer/Designer



- Richard Milligan
- Artist/Animator/Designer



The Game

- Fighting game which uses direct movement of the joypad thumbsticks to control the arms of the combatants
- Theme - male Gorillas fighting for dominance
- 3 Initial prototypes
 - Movement
 - Combat
 - Switching between combat and movement

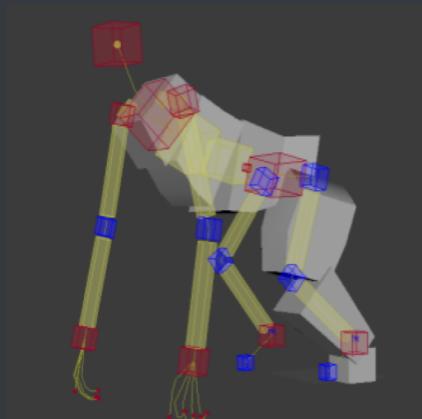


Task 01 - Art/Animation - Proxy Mesh/Rig



Richimaru 04/09/2018

01 -The first experiment with a gorilla type rig was merely a human with longer arms. Nothing fancy but a quick test rig to play with ape walking. It went ok but I soon realised that Apes also have a fairly elongated body so I spent a little longer looking at specific proportions and re-created a rig and added a HIK control system. Am in the process of creating a proxy mesh (split meshes) to use as a test object for in-game testing . The mesh doesn't much matter but it would be beneficial to get the skeleton into engine being close to the final proportions and with the same joint names. Close to completion now but logging off for the night.



Reference - <https://www.youtube.com/watch?v=3T0z1CT-nR8>



Task 02 - Start of Movement Prototype

bmdFalmouth 04/11/2018

Plans:

Create a fighting prototype which shows off the main mechanics of the game. The idea is the player will control the arms to attack and defend, these arms will be controlled by thumbsticks and will potentially move a set of IK targets on a hemi-sphere.

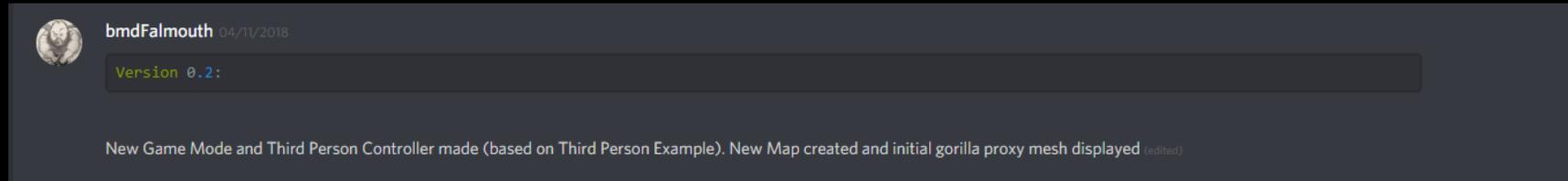
#plans #concepts #prototypes (edited)

Version 0.1:

Base project created (Thirdperson template), and uploaded to version control (edited)



Task 03 - Movement



Task 04 - IK Combat System

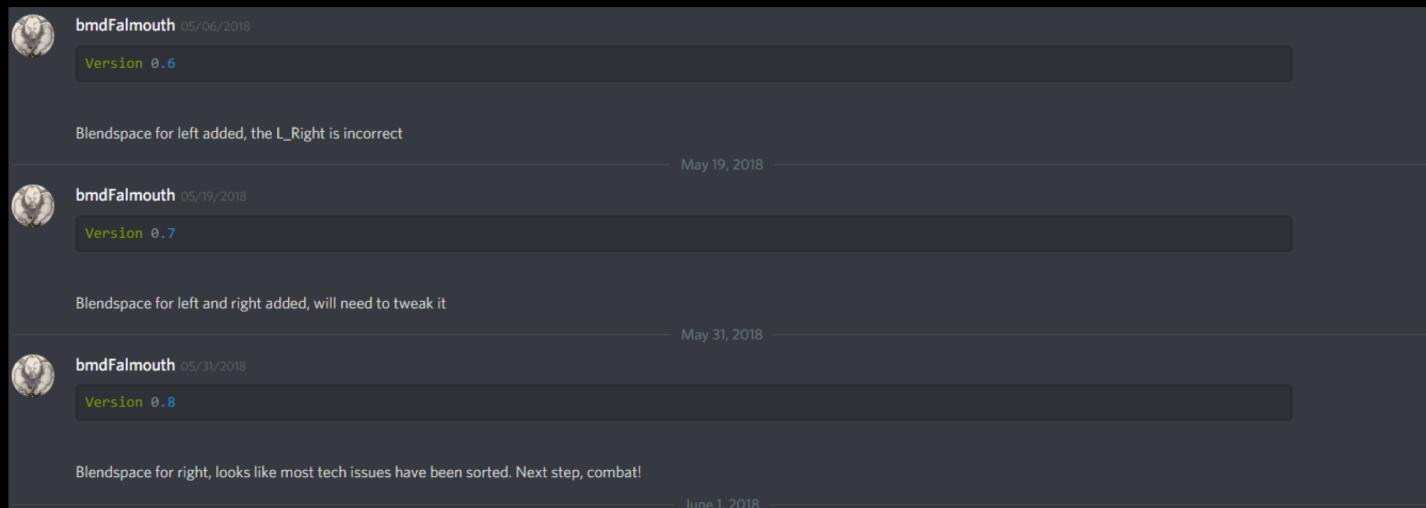
bmdFalmouth 04/12/2018
Version 0.4:
IK setup completed for first hand, will need to implement control scheme and then blend between arm animations. (edited)

April 25, 2018

bmdFalmouth 04/25/2018
Version 0.5:
Left Hand IK Target moving with User Input, next up to move with forces being applied



Task 05 - Move to Blendspaces for combat



Task 05 - Move to Blendspaces for combat



Lessons Learned

- Prototypes are a collaboration
- The question we were trying to answer required
 - 1 Programmer
 - 2 Designers
 - 1 Artist
 - 1 Animator
- Iteration, Iteration, Iteration!
- Research is also key, animator required references
- Ensure your prototypes are small



Closing Advice

Game Jams

Throw away your first idea

Iterate

Play and Evaluate

Kill your darlings



Questions?



References

Gibson Bond, J. Introduction to Game Design, Prototyping and Development 2nd Edition. Addison-Wesley, 2017. Chapters 15 & 28 - 35

Warfel, T.Z. Prototyping: A Practitioner's Guide, Rosenfeld Media 2009

Fullerton, Tracy. Game Design Workshop: A Playcentric Approach to Creating Games 4th Edition. Morgan Kaufmann, 2018. Chapter 7 & 8

Dallas, I. Weaving 13 Prototypes into 1 Game: Lessons from 'Edith Finch', GDC 2018
<https://www.gdcvault.com/play/1025016/Weaving-13-Prototypes-into-1>

Martz, N. Perfecting Pitchable Prototypes, GDC 2012 <https://www.gdcvault.com/play/1015849/Perfecting-Pitchable>

Glinert, E. Rapid, Iterative Prototyping Best Practices, GDC 2012
<https://www.gdcvault.com/play/1015585/Rapid-Iterative-Prototyping-Best>

