

INFT3960 – Game Production

Week 06

Module 6.3

Testing

Course Overview

Lec	Start Week	Modules	Topics	Assignments
1	3 Aug	Mod 1.1, 1.2	Course Overview, Design Process	
2	10 Aug	Mod 2.1, 2.2, 2.3, 2.4	Unity3D Introduction, Introduction C#, Variables and Components, Hello World	
3	17 Aug	Mod 3.1, 3.2, 3.3	Booleans, Loops, Lists and Arrays	Assign 1 21 Aug, 11:00 pm
4	24 Aug	Mod 4.1, 4.2	Functions and Parameters, Debugging	
5	31 Aug	Mod 5.1, 5.2	Classes, Object Oriented	
6	7 Sep	Mod 6.1, 6.2, 6.3	Agile Processes, Risks and Prototypes, Testing	
7	14 Sep	Mod 7.1, 7.2	Puzzles, Guiding the Player	Assign 2 18 Sep, 11:00 pm
8	21 Sep	Mod 8.1	Game Physics	
9	12 Sep	Mod 9.1	AI for Games	
10	19 Oct	Mod 10.1, 10.2	Game Interface, Storytelling in Games	
11	26 Oct	Mod 11.1, 11.2	Graphics Pipeline, Animation in Games	Assign 3 1 Nov, 11:00pm
12	2 Nov	Mod 12.1, 12.2	Networked Games, Course Review	

Course Details

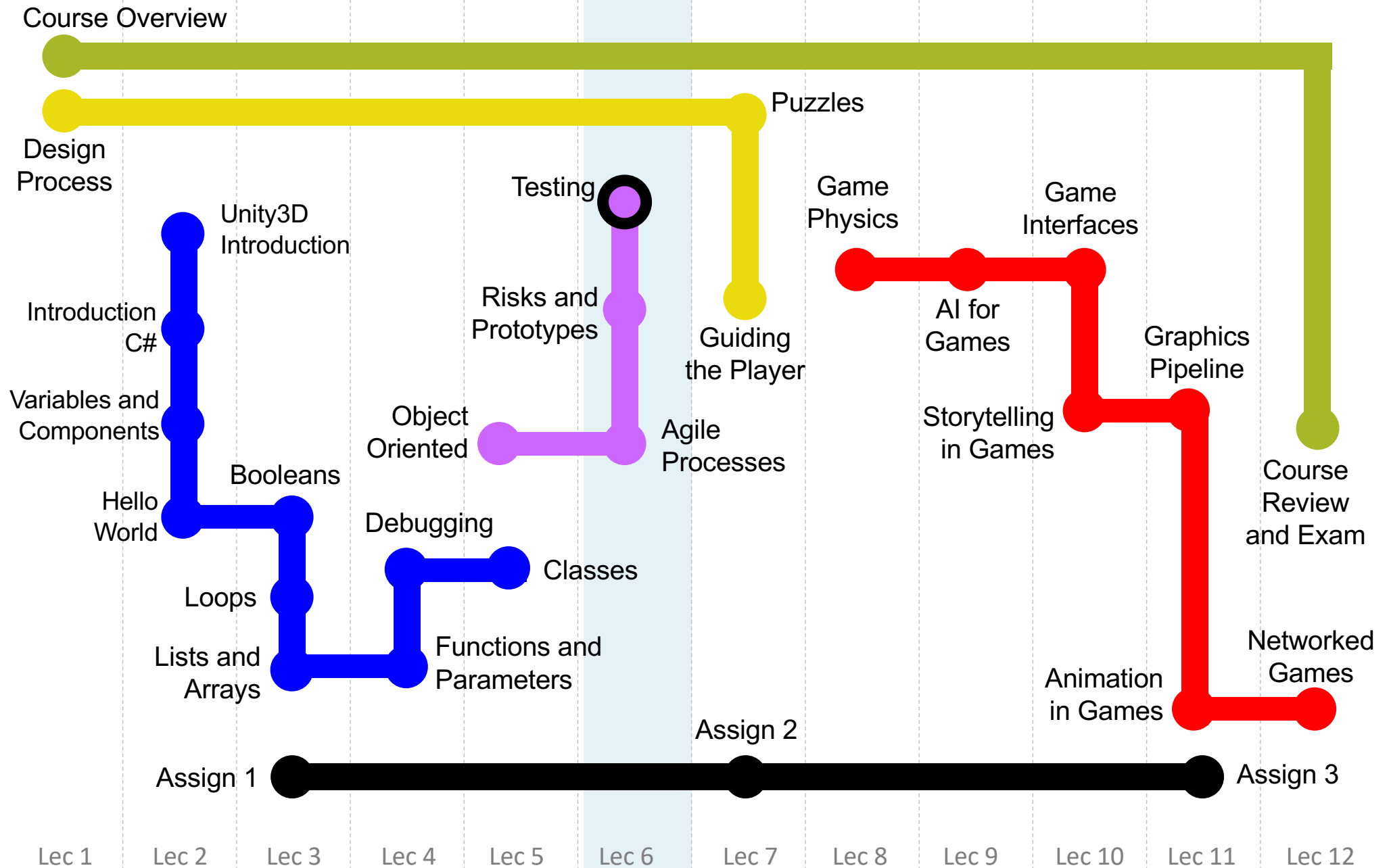
Game Design

Unity 3D and C#

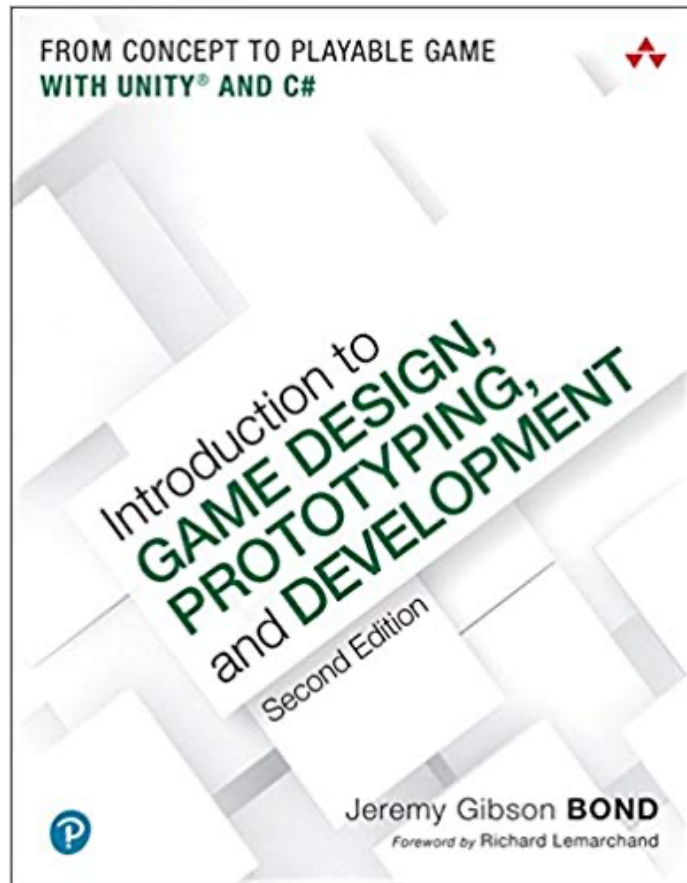
Development Process

Core Game Concepts

Assignments



Game Testing – (Chapter 11)



GAME TESTING

Inherent in the concepts of prototyping and iteration is an understanding that high-quality testing is absolutely necessary to good game design

Testing – Topics



Why Playtest?

Being a Great Playtester

Circles of Playtesters

Methods of Playtesting



Informal Individual Testing

Formal Group Testing

Formal Individual Testing

Online Playtesting

Other Types of Game Testing

Why Playtest?

The answer should be pretty obvious

But testing is frightening - It's asking people to point out everything bad about your game

But every person who plays your game and gives you feedback will make your game better

Why Playtest?

However, you need to get honest feedback

- Some people will try to not hurt your feelings
- Schell suggests saying: "I need your help. This game has some real problems, but we're not sure what they are. Please, if there is anything at all you don't like about this game, it will be a great help to me if you let me know."

Being a Great Playtester?

Think out loud

- Tell the investigators what you're thinking as you play
- This is especially important on the first play through a game

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Reveal your biases

- It's difficult for investigators to know where their playtesters are coming from
- As you're playing talk about other games, films, books, experiences, etc. that the game reminds you of

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Self-analyze

- Help the investigators understand your reactions to the game
- Don't just say "I feel happy."
- It's better to say "I feel happy because the jumping mechanic makes me feel powerful and joyful."

Being a Great Playtester?

Separate elements

- Give overall feedback first
- Then try to analyze art, game mechanics, game feel, sound, music, etc. as individual elements
- This is akin to saying "The cellos sound out of tune," rather than "I didn't like that symphony."

Being a Great Playtester?

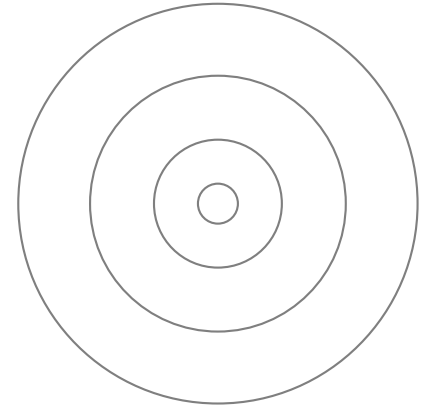
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Don't worry if they don't like your ideas

- As a fellow game designer, you should tell the investigators any ideas you have to make their game better
- But you also shouldn't be offended if they don't use them
- Both game design and playtesting are about checking your ego at the door

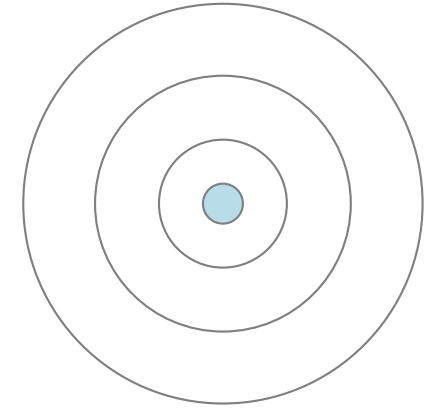
The Circles of Playtesters



Playtesting should be done in stages

- Game testing will expand through several circles of playtesters
- Each circle of people increases in size
- Each circle can help with different aspects of your playtesting

The Circles of Playtesters



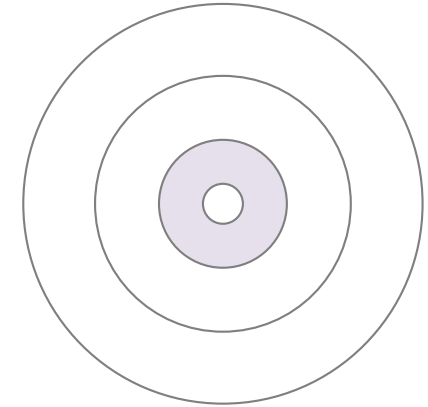
1st Circle: You

- The designer should be the most frequent playtester
- When making a digital prototype, every time you press the Play button in Unity, you're acting as a playtester
- Your job is to determine whether the game is heading toward the kind of experience your team wants to create
- Your skills as a playtester are most useful in the very early stages of prototyping (watch for confirmation bias)
- However, you eventually need to show your game to others

The Circles of Playtesters

2nd Circle: Trusted Friends

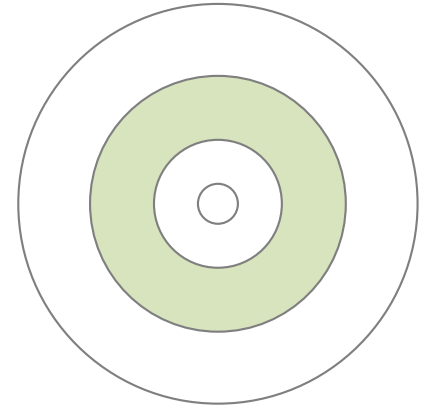
- Once your game approximates the experience you were seeking, it's time for more playtesters
- The 2nd Circle is trusted friends and family members
 - Preferably in target audience or the game dev community
 - Target audience will give you good feedback from the point of view of your future players
 - Game developers have experience to give very good feedback
- Many game bugs will be found by this circle
 - First time someone who didn't make the game is playing it
 - They'll find many bugs in places you just didn't think to look
 - Because they approach gameplay in a different way



The Circles of Playtesters

3rd Circle: Acquaintances and Others

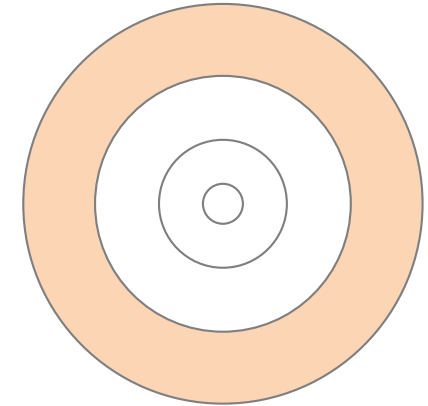
- Once the game seems pretty solid, and the 2nd Circle has stopped finding bugs, it's time to expand
- Finding people outside of those you know well can help tremendously here
 - Because people you know well often share your tastes and biases
 - You need to get out of your social circle to hear new reactions to a game
- Where do you find more people?
 - Local universities
 - Local game stores / Malls
 - Farmers markets / Community events / Parties



The Circles of Playtesters

4th Circle: the Internet

The Internet can be scary - Anonymity ensures that there is little or no accountability. The Internet is the largest possible circle of playtesters



- Internet users will find the most rarified bugs
- Make sure that they have an easy way to report them

You must also have automated data and user tracking in place

- Collect information on every single play session of your game
- Much of the best information from this circle will be aggregate data

Methods of Playtesting

Several different methods of playtesting

Informal Individual Testing - You casually show the game to a friend

Formal Group Testing - You have several people play the game at once and give feedback

Formal Individual Testing - A focused analysis of single person's first play through the game

Online Playtesting - Automated analysis of thousands of online play sessions

Playtesting: Informal Individual Testing

Casually ask a friend if she'd mind trying out your game

- Most useful in the early stages of game development
- Great for testing a new feature

Things to keep in mind during the test

- Don't tell the playtester too much
- Try just giving her the game and seeing what she does
- This tests how intuitive your game mechanics are
- Eventually you'll learn the minimum instruction you need to give

Don't lead the player

- Don't ask leading questions that may bias the playtester
- "Did you notice the health items?" is a leading question
- Informs the player that there are health items
- Implies that it's important for her to collect them
- When the game is released, you won't be there to help new players

Playtesting: Informal Individual Testing

Don't argue or make excuses

- As with everything in design, your ego has no place in a playtest
- Listen to all feedback from your testers, especially if you disagree
- This isn't the time to defend your game
- It is the time to learn what you can from the person who is taking time out of her day to help improve the design improve

Take notes

- Keep a small notebook with you & take notes on any feedback
Especially if it's not what you expected or wanted to hear
- Collate notes & look for statements that you heard multiple times
- If only one playtester said something, don't worry about it as much

Playtesting: Formal Group Testing

Several people are invited to a lab to play the game

- Each person is given an individual station where she can play
- Playtesters are given little instruction and start playing
- After about 30 minutes, playtesters are stopped
- They are then asked to fill out a post-game survey
- Investigators sometimes interview the playtesters as well

Was once the primary form of testing for large studios

Good for getting feedback from many different people

Can also help get many answers to some important questions

Playtesting: Formal Group Testing

Example post-game survey questions

- "What were your three favorite and three least favorite parts of the game?"
- Provide the playtester with a series of images from the game
"How would you describe the way you felt at these points in the game?" (Images are much better for this than trying to describe the location)
- "How do you feel about the main character (or other characters) in the game?"
- "Did your feelings about the main character change over the course of the game?"
- "How much would you pay for this game? / How much would you charge for this game?"
- "What were the three most confusing things about the game?"

Playtesting: Formal Group Testing

All formal testing requires a script

The script should answer the following questions:

What should investigators say to the playtesters to set up the game? -
What instructions should they give?

How should investigators react during the playtest? - Should they ask questions if they see a playtester do something interesting or unusual? - Should they provide any hints to playtesters during the test?

What should the environment be like for the playtest? - How long should the playtester be allowed to play?

What specific survey questions should be asked of the playtester once the playtest is complete?

Playtesting: Formal Group Testing

Formal investigators should not be part of the development team

- All members of the team are already biased about the game
- They know how to play
- They already know any secret locations or plot twists
- They have an emotional investment in people liking the game
- Team members could unintentionally bias or lead playtesters

Playtesting: Formal Individual Testing

A detailed analysis of a single playtester's experience playing the game

Based on the practices of Usability Testing

Record several different simultaneous data streams

- The **game screen** - You want to see what the player is seeing
- The **playtester's actions** - You want to see the control input attempted by the player
- The **playtester's face** - You want to see the player's emotions
- **Audio of what the playtester says** - What she says can give you some information about her internal thought process
- **Internal game data log** - Your game should also be logging time stamped data about its internal state

Playtesting: Formal Individual Testing

Make test environment similar to the eventual play environment

- If testing a console game, give the playtester a couch and large TV
- For PC games, a desk and office chair are more appropriate

Make the playtester as comfortable as possible

- Provide drinks and snacks, restrooms, etc.
- Tell the playtester how much you appreciate her taking time to play your game and give you feedback
- Ask her to please think out loud
- Ask her to help you find the problems with the game

After the play session

- An investigator should sit with playtester and discuss experience
- Record this session as well

Playtesting: Online Playtesting

The game must be in the beta phase before beginning large online playtests (often called "Beta Tests")

- Remember: Beta means that all known bugs are fixed!

Three forms:

Closed

- Invite-only test with a small number of people
- Find hidden bugs before a larger audience sees the game

Limited

- Generally open to anyone who signs up
- But there are a limited number of spots available
- Keeps the server from getting overwhelmed

Open

- Anyone can sign up
- The final test of any server before launch

Other Types of Game Testing

Focus Testing

- Gather a group of people in a game's core demographic (a focus group) and get their reaction to a prospective game's look, premise, music or other aesthetic or narrative elements
- Sometimes used by large companies to help determine the business case for development of a game

Interest Polling

- Use social network sites or crowdfunding sites to poll the level of consumer interest in a game
- Can be useful for small companies trying to make sure there is a market for their game
- Can also raise funds to complete the game

Other Types of Game Testing

Usability Testing

- Formal Individual Testing uses Usability Testing techniques
- Tests how well testers can understand and use the interface for a piece of software
- Important to also do individual usability testing

Investigates how easily the playtester can interact with and gain critical information from your game

Includes testing various layouts for on-screen information

Testing several different control configurations

Other Types of Game Testing

Quality Assurance (QA) Testing

Focused on finding bugs and ways to reliably reproduce them

Core elements are:

- Find a bug
- Discover & write down the steps required to reproduce the bug
- Prioritize the bug
- Does it crash the game?
- How likely is it to occur for a normal player?
- How noticeable is it?
- Tell the engineering team so that they can fix it

Other Types of Game Testing

Quality Assurance (QA) Testing

QA is most often done by the development team and a group of game testers hired for the final phase of a project

Also possible to set up ways for players to submit bugs

but most players don't have the training to generate really good bug reports that include clear steps for reproducing the bug

Many free bug tracking tools are available

Bugzilla, Mantis Bug Tracker, Trac, etc.

Other Types of Game Testing

Automated Testing

A piece of software attempts to find bugs in your game or game server without requiring human input

Automates testing methods include

- Simulating rapid user input - Example: hundreds of clicks per second all over the screen
- Inundating a server with thousands of requests per second - Determines level of server load that could cause server to fail

Can effectively test your game in ways that are very difficult for human QA testers to accomplish

Several companies specialize in automated testing

Summary

Game testing is a critical part of the iterative process

Implement the types of testing that are best for your project

The types of testing you use will change over the course of the project