Beta Milestone

Build Submissions

Installer

- If the build is not already pushed to the server it must be now
  - Should have an installer in the "Milestone builds" folder

- We aren't working on user stories now

- We aren't integrating the builds now
  - Use what we have in the master branch right now

Sprint Self Review

Previous sprint review

- Finalize Trello board
  - All user stories in final categories
  - Hours spent on all tasks entered

- Discuss work problems if there were any
  - If a user story estimate was off why was it off?

Quality Assurance

QA's goal

~~To make a bug free game~~

Common misconception

QA's goal

Get the product into an acceptable level of error

- This changes depending on the product being developed

- This is primarily influenced by the product's goals

QA process

QA process

Quality assurance is an iterative process

- Test
  - QA department finds bugs
  - Bug passes scrutiny
  - Passed to developers as tasks that need to be done (change requests)

- Fix
  - Developers fix the bugs

- Confirm
  - QA department confirm fixes
  - Return unfixed bugs back to developers

- Repeat until the game is sufficiently bug reduced

Why do we want dedicated testers?

It is very hard to look at your own game unbiased

- You want people who don't know what they are doing to test the game

- Allows the development staff to focus on implementing and fixing
  - Good for maintain momentum
  - Good for the company bottomline
    - Multiple testers for the cost of 1 programmer

Bugs

What ARE bugs

- The game did not behave according to the DEVELOPER intentions

- The game did not behave according to the PLAYERS intentions

- Incorrect information

- Failure to adhere to certification criteria (TRC)

What COULD be bugs
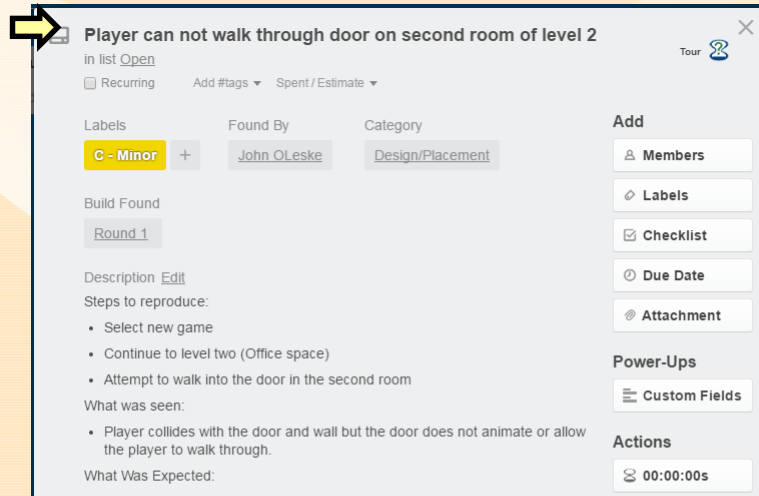
- The player cannot figure out how to do something
  - "Wait for a soul with a red crystal ondeborah cliff."= Equip the red crystal and kneel next to the cliff for 5 seconds for wind to move you to the other side

- The player can exploit mechanics to break game balance

- The game is too challenging or not challenging enough

- These all need to be taken into consideration in a case by case basis
  - These need an objective viewpoint (producer approval)

Reporting Bugs

Reporting bugs

There is a lot of information that needs to be conveyed when reporting bug

Reporting bugs

Summary of the issue

- Short clear description of the bug

Reporting bugs

Summary of the issue

Bad
- "It crashed"

- "Doesn't make sense"

Good
- "Crashes selecting new game after exiting game"

- "Player doesn't have enough information to solve the puzzle on level 5"

☐ **Player can not walk through door on second room of level 2**   ✕

in list <u>Open</u>   Tour ⚲

☐ Recurring   Add #tags ▾   Spent / Estimate ▾

Labels	Found By	Category	**Add**
`C - Minor` +	John OLeske	Design/Placement	👤 Members

Build Found

<u>Round 1</u>

Description <u>Edit</u>

Steps to reproduce:
- Select new game
- Continue to level two (Office space)
- Attempt to walk into the door in the second room

What was seen:
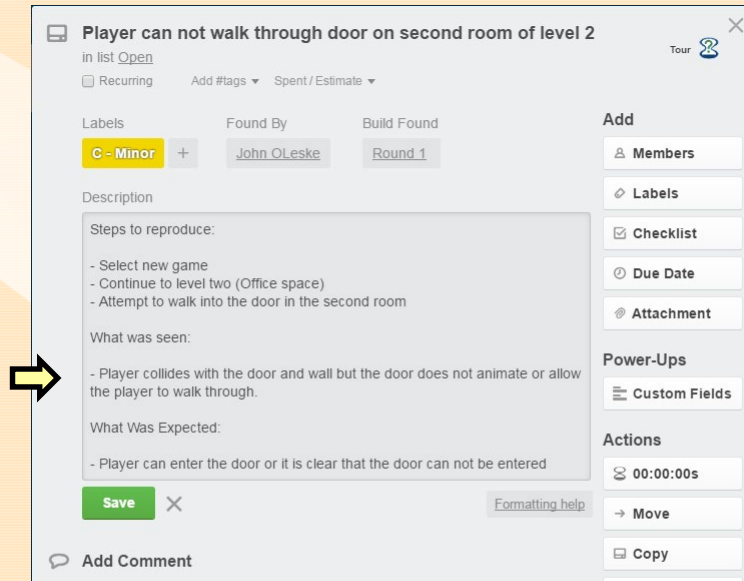
Add
- 👤 Members
- ✐ Labels
- ☑ Checklist
- ⏱ Due Date
- 📎 Attachment

Power-Ups
- ☰ Custom Fields

Reporting bugs

Steps to reproduce the bug

- Should be steps starting from the main menu of a fresh boot

Reporting bugs

What was seen

- Why do you think what you saw is wrong

Reporting bugs

What was expected

- What do you think it should have been

Reporting bugs

How severe the issue is

Reporting bugs

How severe is the issue

D - Suggestion
C - Minor ✓
B - Critical
A - Crash/ShowStopper
TRC Issue
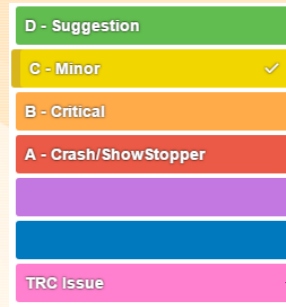
TRC Issue

- Would cause the game to be rejected from a targeted platform

Reporting bugs

How severe is the issue

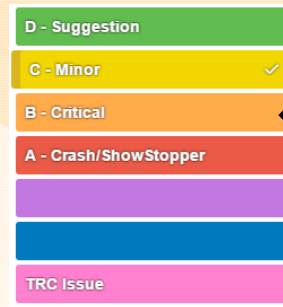| |
|---|
| D - Suggestion |
| C - Minor ✓ |
| B - Critical |
| A - Crash/ShowStopper |
| |
| |
| TRC Issue |
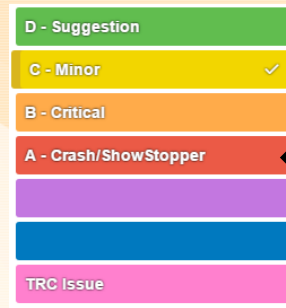
A – Crash/Show Stopper

- Would cause the game to be unsellable
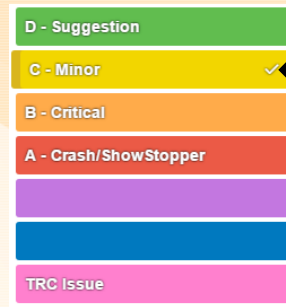- Hinders testing of the product

Reporting bugs

How severe is the issue

D - Suggestion
C - Minor ✓
B - Critical
A - Crash/ShowStopper
TRC Issue

B – Critical

- Critically important to fix
- Would potentially cause loss of sales

Reporting bugs

How severe is the issue

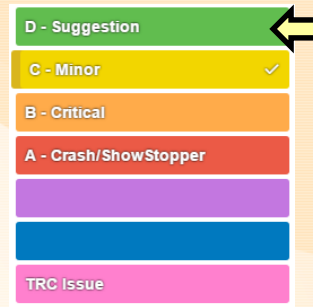| |
|---|
| D - Suggestion |
| C - Minor |
| B - Critical |
| A - Crash/ShowStopper |
| |
| |
| TRC Issue |

C - Minor

- A true unambiguous bug
- Not a high priority

Reporting bugs

How severe is the issue

D - Suggestion

D - Suggestion
C - Minor ✓
B - Critical
A - Crash/ShowStopper
TRC Issue

D - Suggestion

- Grey area issues
- Things that could be left in the end product with little repercussion

Reporting bugs

Who found the bug

Reporting bugs

What build was the bug found in

Reporting bugs

Who is going to fix the bug

Reporting bugs

What is the current status of the bug

7 Quality Assurance	
Open	0 ···
Add a card...	

Just got submitted

In Progress	0 ···
Add a card...	

Someone is working on it

Duplicate	0 ···
Add a card...	

Not a bug	0 ···
Add a card...	

Known Shippable	0 ···
Add a card...	

Dev believes it is ready to be closed

Can Not Reproduce [Waiting Confirmation]	0 ···
Add a card...	

Fixed [Waiting Confirmation]	0 ···
Add a card...	

Fixed [Confirmed]	0 ···
Add a card...	

QA and production teams agree it should be closed

Reporting bugs

A bug is clear as to what the issue is

- Avoid ambiguous terms

- Use the same names for items that are used in the product

Reporting bugs

Each bugs only contains one issue

- It is tempting to submit "level one has the following issues…"

- Each bug should contain one thing that needs to be fixed

Reporting bugs

A bug is always reproducible

- This isn't saying that failing to reproduce the outcome means it isn't a bug

- If you can't reproduce the bug you haven't found the cause of the bug yet

Example

A bug's life

Example: What was seen

- What was seen
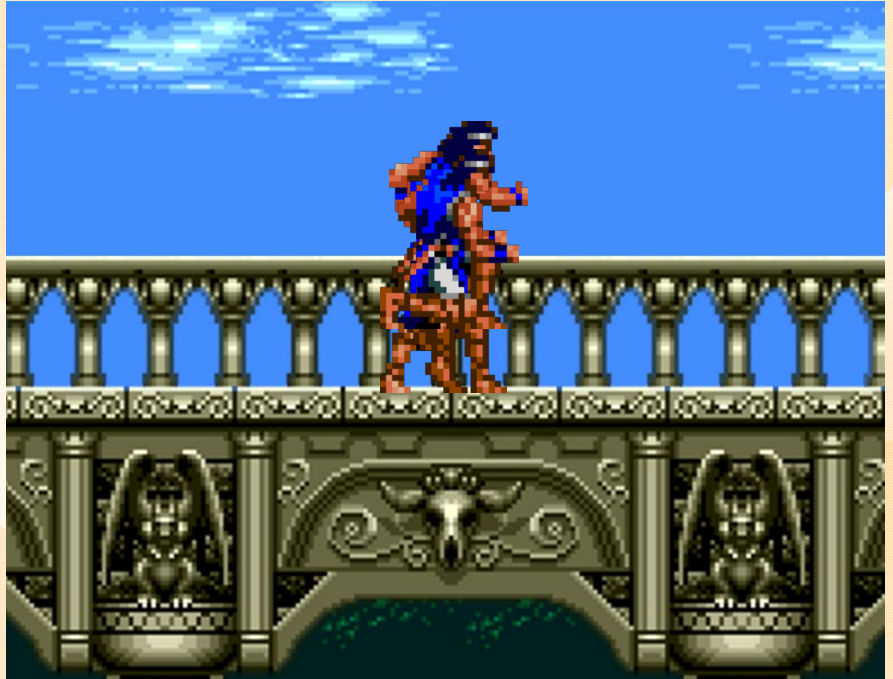
Example: What was expected

- What was expected (player)
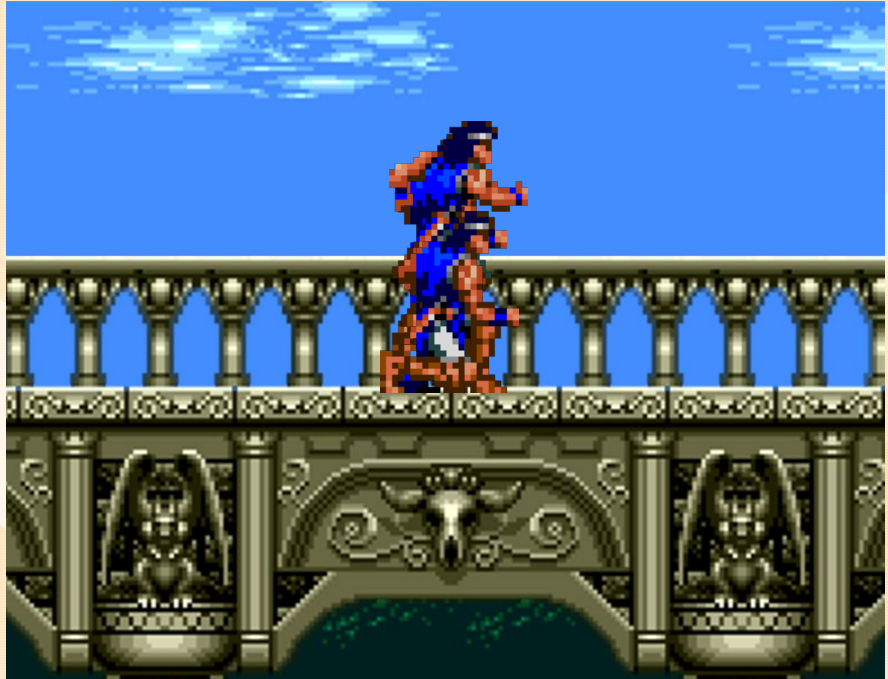
Example: Bug reported

Collision issues with the bridge on level two

1. From the main menu select new game.
2. Complete level one and continue to level two
3. Proceed halfway though level two where there is a large ornamental bridge
4. Jump onto the bridge

Result: When the user jumps on the bridge the player lands slightly above the floor of the bridge. This issues does not occur when walking onto the bridge.

Expected result: The player will walk along the bridge normally no matter what way they entered it.

Example: Dev Intent

- What was expected (Dev)
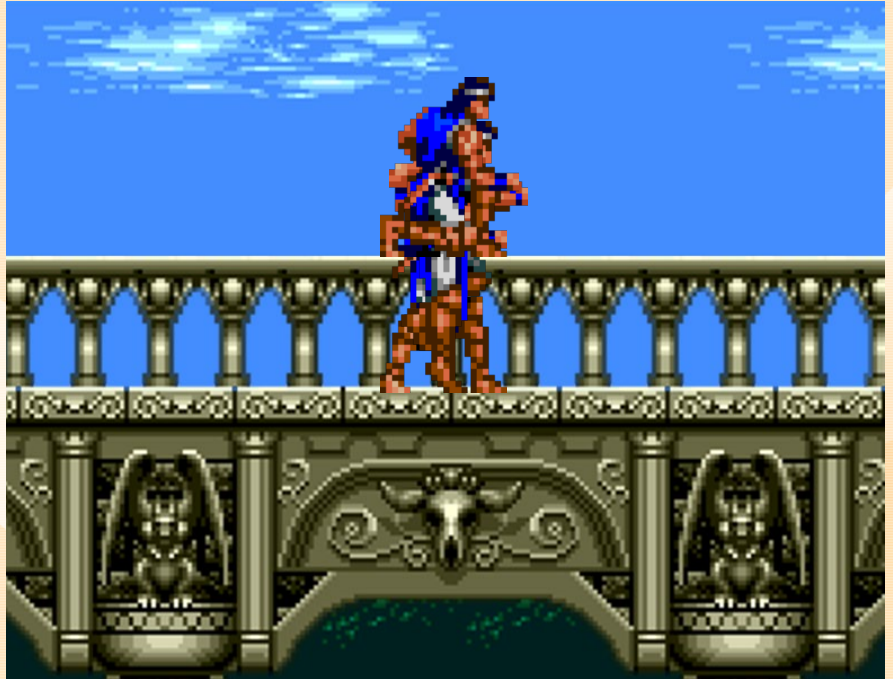
Example: Dev response

If they didn't actually spend time to understand the bug
- Not a bug. We intended to be able to jump on the hand rail.

If they did spend time to understand the bug
- Fix the collision detection line for the hand rail

Example: Fixing

Fix the real problem

- Frequently the fix is not the expected results

- Many times the fix is informing the player of the intent

- Sometimes the fix is avoiding the issue

<Activity> Bug Examples

Bug examples

- How would we go about resolving issues that get reported to us.
  - https://youtu.be/CGhme22zvvI
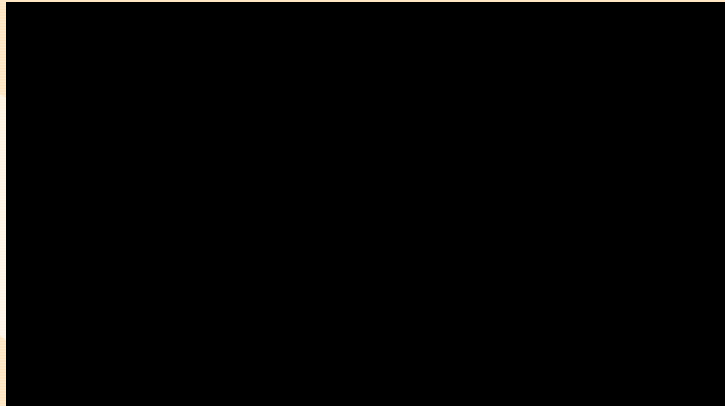
Example

It is very easy to lose sight of the bigger picture

- It isn't about the people involved, it is about making the game as good as it can be

- QA reporting bugs != QA saying your game is bad
  - Or that you are a bad dev in conjunction with that

- It isn't QA's fault that they found a bug
  - The bug was there, they are just letting you know about it.

- Dev refusing to fix a bug does not mean it shouldn't have been submitted
  - Discussions and decision on that have to be made

Promotional Materials

Promotional Materials

- Promotional materials need to be submitted
  - Team Logo
  - Screenshot
  - Demo Video

- Why
  - We need them for archiving
  - They will be used at the expo
  - You should want them to promote yourself

Promotional Materials: Logo

Create a simple team logo

- Printable
  - No solid background

- Readable at a distance
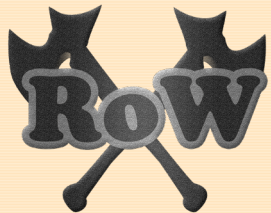
Promotional Materials: Screen Shot

Create a screenshot

- Shows a main player action
- Shows an interesting environment
- Shows obstacles being overcome
- Is clear as to what is happening

Suggested Program
- fn+alt+prt sc(print screen)
- MSPaint

Promotional Materials: Video

Create a Video

- Shows multiple player actions, environments, and obstacles being overcome
- Start and end with a game/team title screen
- 1-2 minutes long
- MINIMUM resolution 1280x720
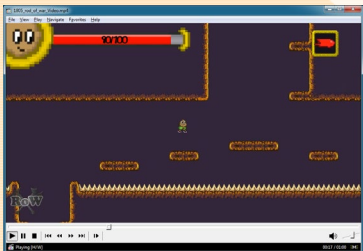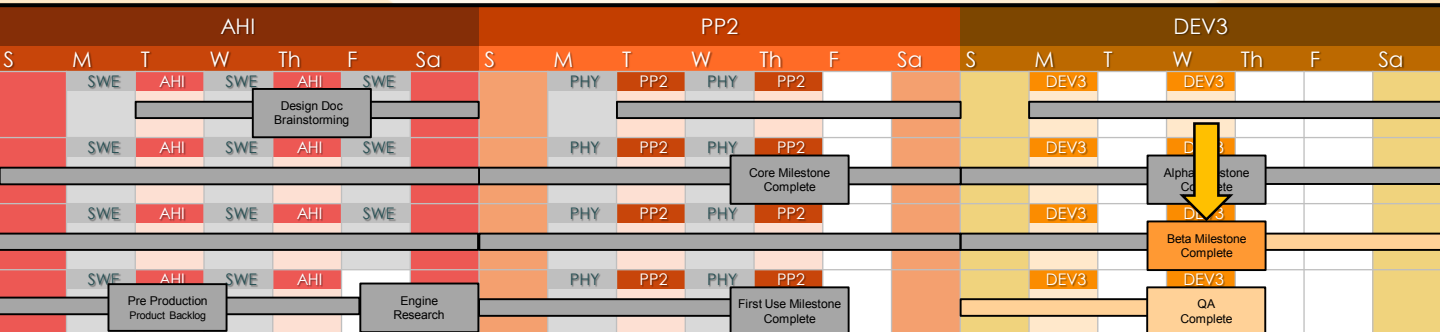- .mp4 (H.264 codec preferred)

Suggested programs
Capture
- OBS
  - https://obsproject.com/
- LoiLo Game Recorder
  - http://loilo.tv/us/product/game_recorder
  - Not studio or Loiloscope, that adds a watermark

Editing
- DaVinci Resolve

Assignments

QA and Finalizing

Starts day 6 of PP3

- Average hourly commitment
  - 4 dedicated work days
    - 2 testing days
    - 2 fixing days

QA Schedule

Today before end of lecture
- Dev teams will provide test teams:
  - Game installer
  - Access to bug tracker

By 9am tomorrow
- First round of testing must be complete
  - 10bugs per tester minimum
  - Allow Dev teams time to fix bugs

Before the 7th lecture
- Fix as many issues as possible
  - Update the tracker to show its status
  - Have a new build made BEFORE class
- Create Promotional Materials
  - Assign a team member to the task

QA Schedule

Start of class Lecture 7
- Promotional Material submitted
- New build delivered to QA teams
  - Testing team must confirm that bugs are truly fixed

By 9am the day after lecture 7
- Second round of testing must be complete
  - 10bugs per tester minimum
  - Allow Dev teams time to fix bugs

Before the 8th lecture
- Fixing the remaining issues.
  - Update the tracker to show its status
  - Have the final build BEFORE class

QA Schedule

Start of class Final Day
- Final turn in
  - Installer
  - Codebase
  - Trello Exported by staff

- New build delivered to QA teams
  - Final fix confirmations
  - Only reporting A level issues
  - All bug in database should be fixed or approved to remain by CD

- Games running on target platforms
  - Public at this point

Before end of lab
- Postmortem
  - Class discussion / Document creation
- Wrap up notes

Presentations

Presentation day

- *confirm date and time

- Open floor expo presentation
  - Teams spread evenly throughout the room
  - Guests playing the games on your computers/hardware
  - We are available to answer questions and present the games 1 on 1

Additional Resources

Steve Wetherill: Opinion—Quality Assurance For Dummies

- http://www.gamasutra.com/view/news/104290/Opinion_Quality_Assurance_For_Dummies.php

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