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# Beta Milestone

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# Build Submissions

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## 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

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## 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?

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# Quality Assurance

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# QA's goal

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To make a bag for game

Common misconception

# QA's goal

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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

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# QA process

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# QA process

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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 and we have met the acceptable level of error



# Why do we want dedicated testers?

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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 bottom line
    - Multiple testers for the cost of 1 programmer

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# Bugs

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# What ARE bugs

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- 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

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- 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)

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# Reporting Bugs

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

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

in list [Open](#)

☐ Recurring

Add #tags ▾

Spent / Estimate ▾

Labels

Found By

Category

C - Minor

+

John OLeske

Design/Placement

Build Found

Round 1

Description [Edit](#)

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:

Player collides with the door and wall but the door does not animate or allow the player to walk through.

What Was Expected:

Tour

Members

Labels

Checklist

Due Date

Attachment

Power-Ups

Custom Fields

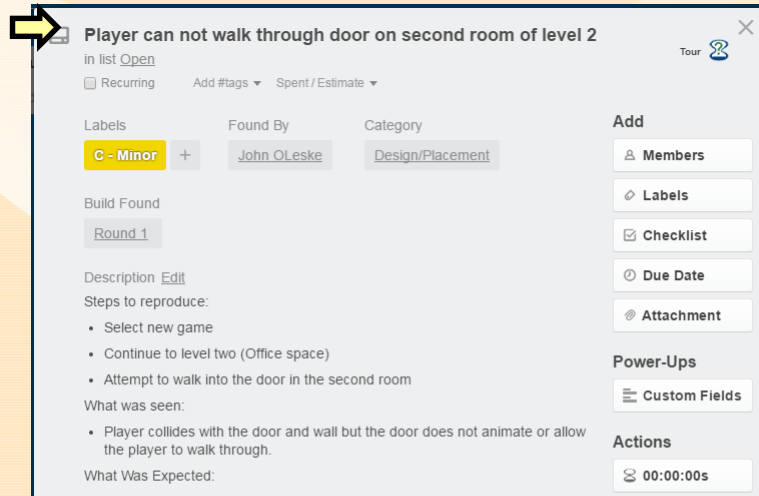
Actions

00:00:00s

# Reporting bugs

## Summary of the issue

- Short clear description of the bug



The screenshot shows a bug report form with the following fields and sections:

- Title:** Player can not walk through door on second room of level 2
- in list:** [Open](#)
- Recurring:** ☐
- Add #tags:** [Add #tags](#)
- Spent / Estimate:** [Spent / Estimate](#)
- Labels:** [C - Minor](#) [+](#)
- Found By:** [John Oleske](#)
- Category:** [Design/Placement](#)
- Build Found:** [Round 1](#)
- Description:** [Edit](#)
- 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:**
  - Player collides with the door and wall but the door does not animate or allow the player to walk through.
- What Was Expected:**
- Add:**
  - [Members](#)
  - [Labels](#)
  - ☒ [Checklist](#)
  - [Due Date](#)
  - [Attachment](#)
- Power-Ups:**
  - [Custom Fields](#)
- Actions:**
  - [00:00:00s](#)

# 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](#) [Open](#)

☐ Recurring

Add #tags ▼

Spent / Estimate ▼

Labels

Found By

Category

C - Minor +

John OLeske

Design/Placement

Build Found

Round 1

Description [Edit](#)

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:

Members

Labels

Checklist

Due Date

Attachment

Power-Ups

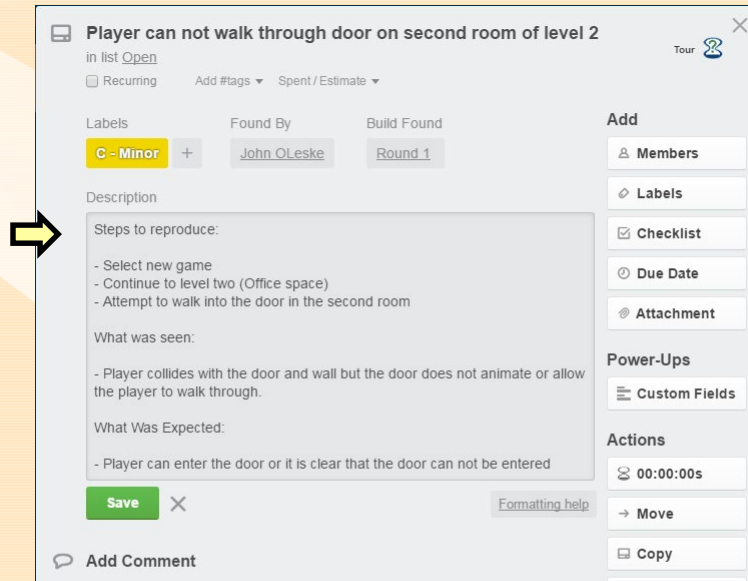
Custom Fields



# Reporting bugs

## Steps to reproduce the bug

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



The screenshot shows a bug report form titled "Player can not walk through door on second room of level 2". The form includes fields for "Labels" (C - Minor), "Found By" (John OLeske), and "Build Found" (Round 1). The "Description" field is highlighted with a yellow arrow. The "Description" field contains the following text:

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:

- Player collides with the door and wall but the door does not animate or allow the player to walk through.

What Was Expected:

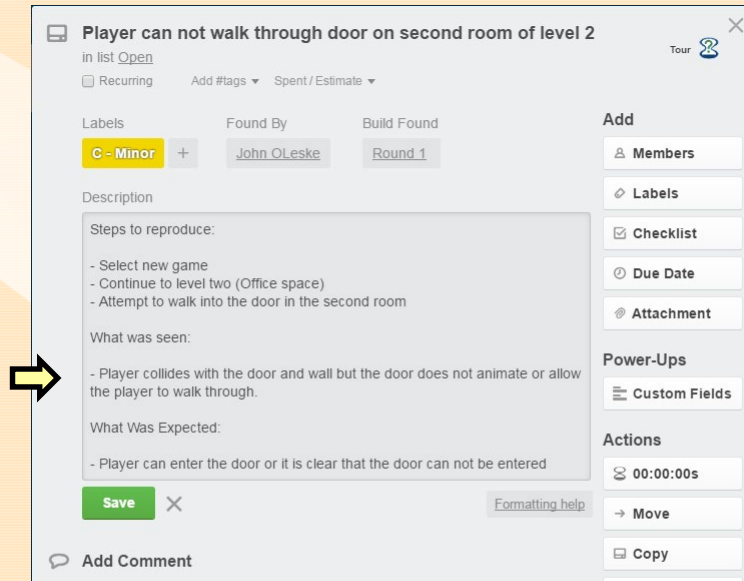
- Player can enter the door or it is clear that the door can not be entered

The form also includes a "Save" button, a "Formatting help" link, and a "Tour" button. On the right side, there are sections for "Add" (Members, Labels, Checklist, Due Date, Attachment), "Power-Ups" (Custom Fields), and "Actions" (00:00:00, Move, Copy).


# Reporting bugs

What was seen

- Why do you think what you saw is wrong



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

in list [Open](#) Tour 

☐ Recurring Add #tags ▾ Spent / Estimate ▾

Labels Found By Build Found

**C - Minor** + [John OLeske](#) [Round 1](#)

Description

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:

- Player collides with the door and wall but the door does not animate or allow the player to walk through.

What Was Expected:

- Player can enter the door or it is clear that the door can not be entered

[Save](#) ✕ [Formatting help](#)

[Add Comment](#)

**Add**

- [Members](#)
- [Labels](#)
- ☒ [Checklist](#)
- [Due Date](#)
- [Attachment](#)

**Power-Ups**

- [Custom Fields](#)

**Actions**

- [00:00:00s](#)
- [Move](#)
- [Copy](#)

# Reporting bugs

What was expected

- What do you think it should have been

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

in list [Open](#)

☐ Recurring   Add #tags ▼   Spent / Estimate ▼

**Labels**  
C - Minor +

**Found By**  
John OLeske

**Build Found**  
Round 1

**Description**

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:

- Player collides with the door and wall but the door does not animate or allow the player to walk through.

What Was Expected:

- Player can enter the door or it is clear that the door can not be entered

**Save** X   [Formatting help](#)

**Add Comment**

Write a comment...

**Actions**

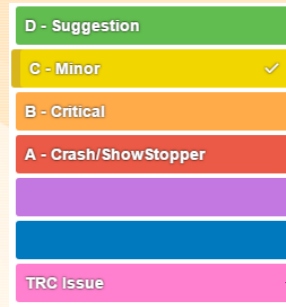
- Members
- Labels
- Checklist
- Due Date
- Attachment
- Power-Ups
- Custom Fields
- 00:00:00s
- Move
- Copy
- Subscribe
- Archive

## How severe the issue is

# Reporting bugs

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How severe is the issue



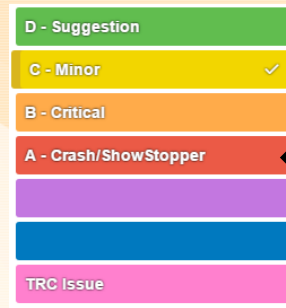
TRC Issue

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

# Reporting bugs

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How severe is the issue



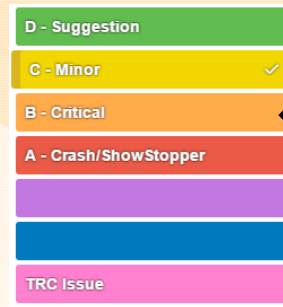
A – Crash/Show Stopper

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

# Reporting bugs

---

How severe is the issue



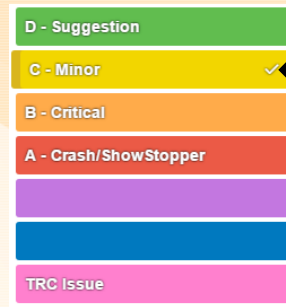
B – Critical

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

# Reporting bugs

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How severe is the issue



C - Minor

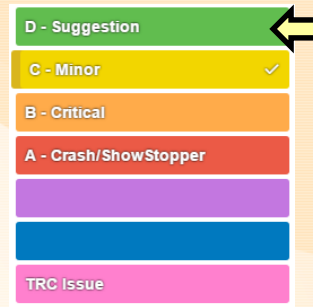
- A true unambiguous bug
- Not a high priority



# Reporting bugs

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How severe is the issue



D - Suggestion

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

## Who found the bug

## What build was the bug found in

# Reporting bugs

Who is going to fix the bug

The screenshot displays a bug reporting interface. The main bug report is titled "Player can not walk through door on second room of level 2". It includes fields for "Labels" (C - Minor), "Found By" (John OLeske), and "Category" (Design/Placement). The "Build Found" section is set to "Round 1". The "Description" field contains the text "Steps to reproduce:" followed by a list of steps: "Select new game", "Continue to level two (Office space)", and "Attempt to walk into the door in the second room". The "What was seen:" section contains the text "Player collides with the door and wall but the door does not animate or allow the player to walk through." The "What Was Expected:" section contains the text "Player can enter the door or it is clear that the door can not be entered". Below the description is an "Add Comment" section with a text input field and a "Write a comment..." placeholder. To the right of the bug report is a "Members" panel with a search bar and a list of "Board Members" including John OLeske, Greg Bey, Jon Hamrick, Robert Martinez, Rod Moye, and Sean Hathaway. The panel also includes a "Subscribe" button and a "Show other team members..." link.

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

in list [Open](#)

☐ Recurring    Add #tags    Spent / Estimate    ▾

Labels: **C - Minor** +

Found By: [John OLeske](#)

Category: [Design/Placement](#)

Build Found: [Round 1](#)

Description: [Edit](#)

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:

- Player collides with the door and wall but the door does not animate or allow the player to walk through.

What Was Expected:

- Player can enter the door or it is clear that the door can not be entered

[Add Comment](#)

Write a comment...

[Subscribe](#)

[Archive](#)

**Members**

Search members

**Board Members**

- John OLeske (johnoleske)
- GB Greg Bey (gregbey1)
- JH Jon Hamrick (jonhamrick1)
- RM Robert Martinez (rmartinez)
- RM Rod Moye (rodmoeye)
- SH Sean Hathaway (seanhathaway1)

[Show other team members...](#)

# Bug Rules

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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

# Bug Rules

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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

# Bug Rules

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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

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# Bug life cycle

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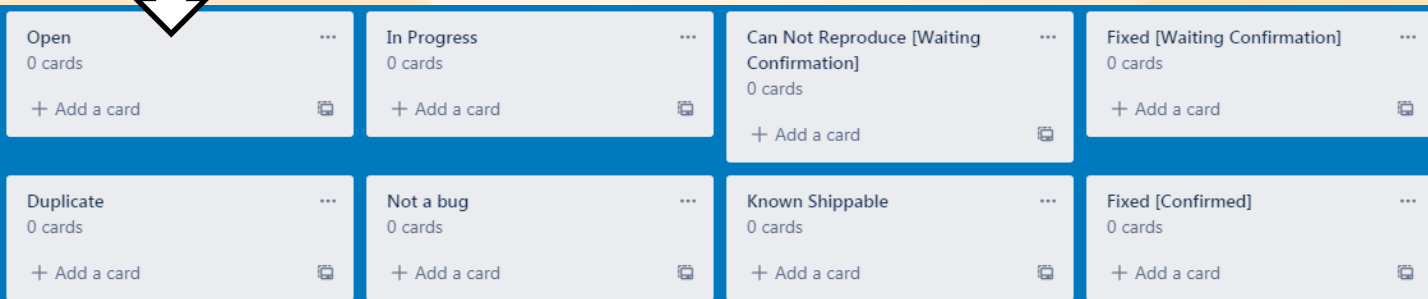


# Bug life cycle

---

## Open

- Just got submitted
- Waiting for someone to start work on it

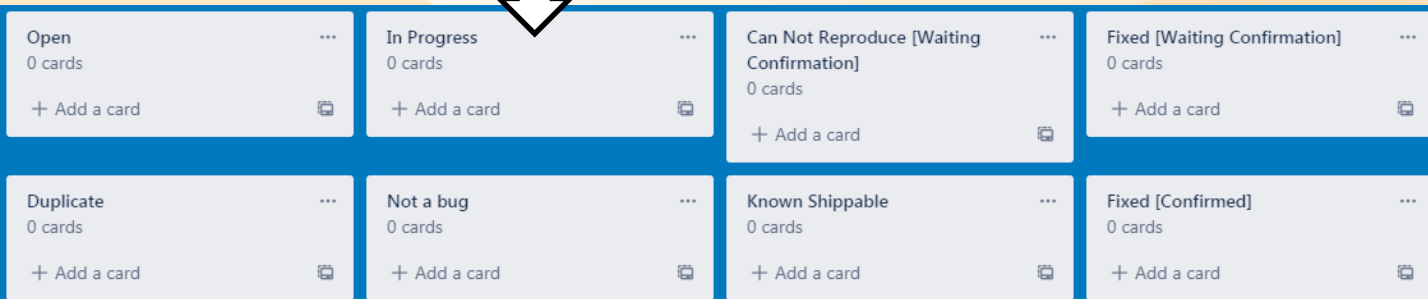


# Bug life cycle

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## In Progress

- Someone is currently working on fixing it

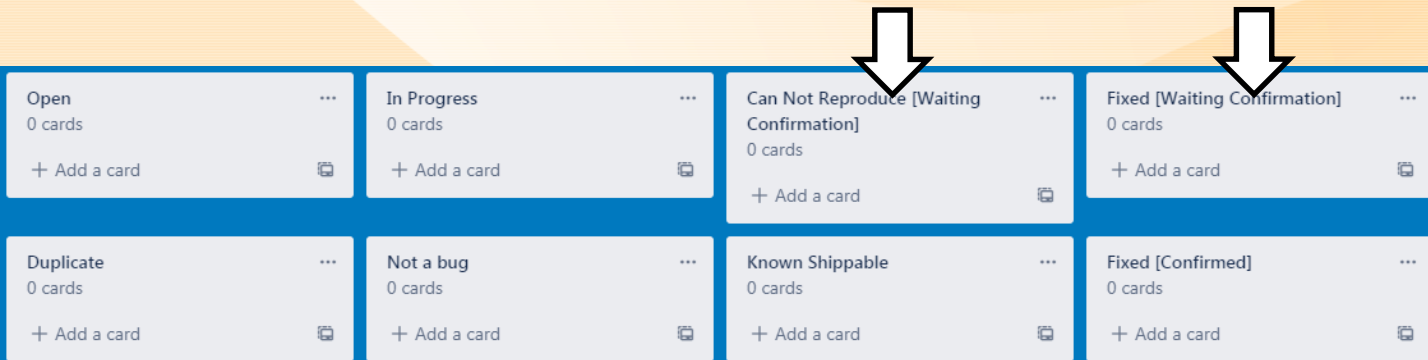


# Bug life cycle

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## Waiting Verification

- Dev is done with the bug and it is returned to producers or QA for verification

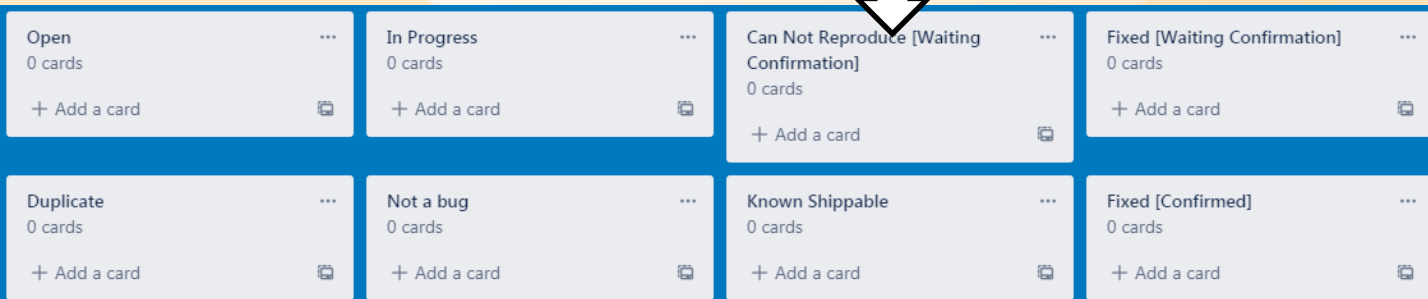


# Bug life cycle

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Cannot reproduce (waiting confirmation)

- A developer attempted to reproduce it on their own machines and were not able to
- Perhaps got fixed since it was entered as a bug from something else
- Developer may been assistance in recreating it

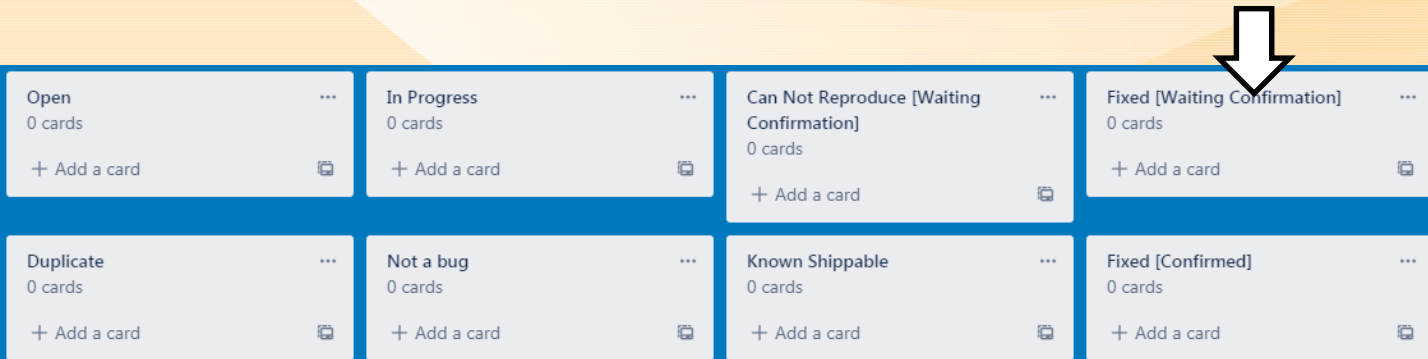


# Bug life cycle

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Fixed (waiting confirmation)

- A developer went in and fixed the bug

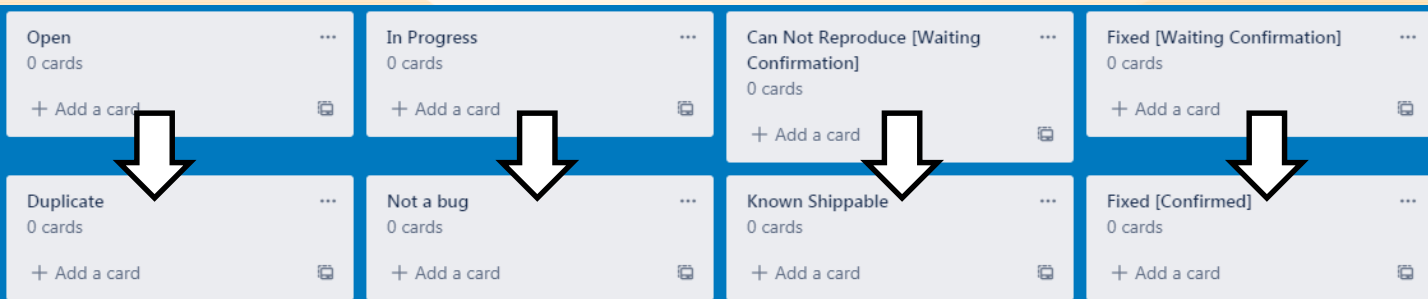


# Bug life cycle

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## Closed statuses

- No more action on the card is necessary

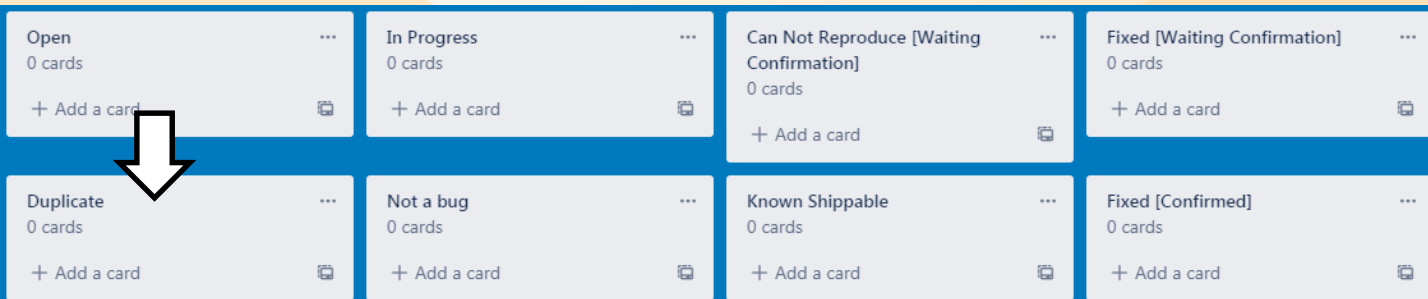


# Bug life cycle

---

## Duplicate

- Entered in the bug database elsewhere
- Comments must reference the bug it is a duplicate of

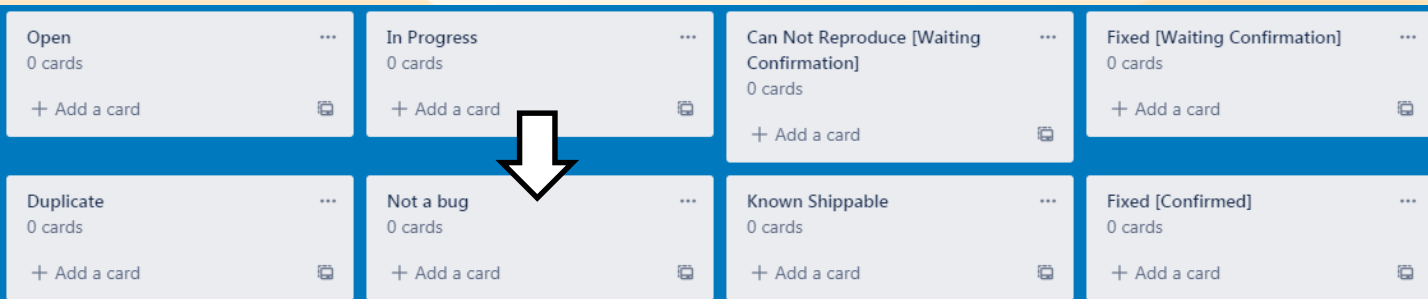


# Bug life cycle

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## Not a bug

- Unsure why it was entered as a bug at all
- Unclear on tester's intention
- Note: This is often vastly over used by new developers. Just because it was intended by the developer does not necessarily mean it isn't a bug if the players do not understand those intentions



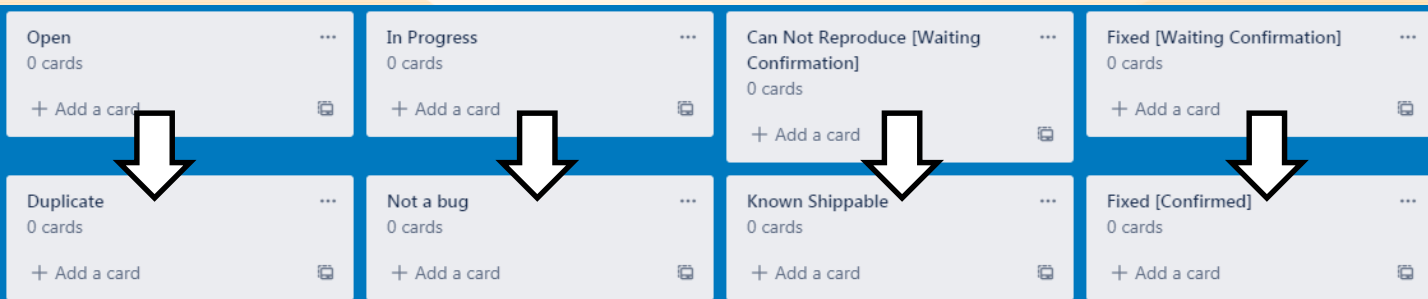


# Bug life cycle

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## Known Shippable

- A choice was made to leave it in the build as is

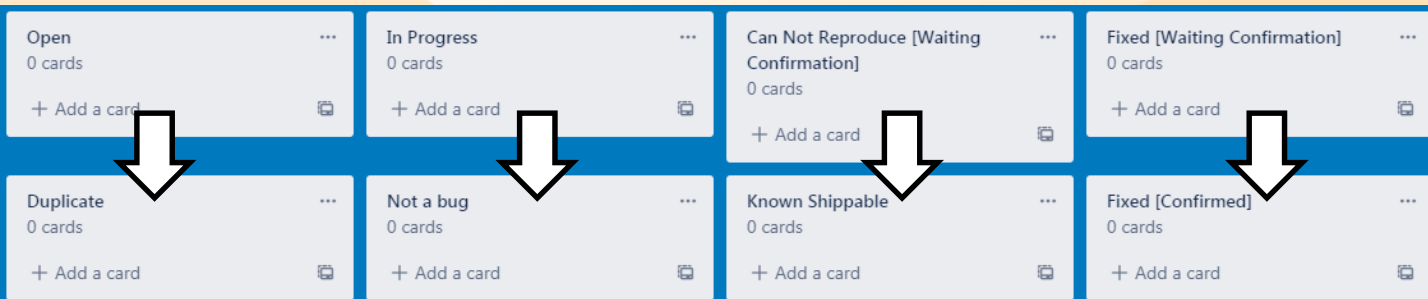


# Bug life cycle

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## Fixed (confirmed)

- Marked as fixed by a developer and confirmed to be fixed by QA



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# Example

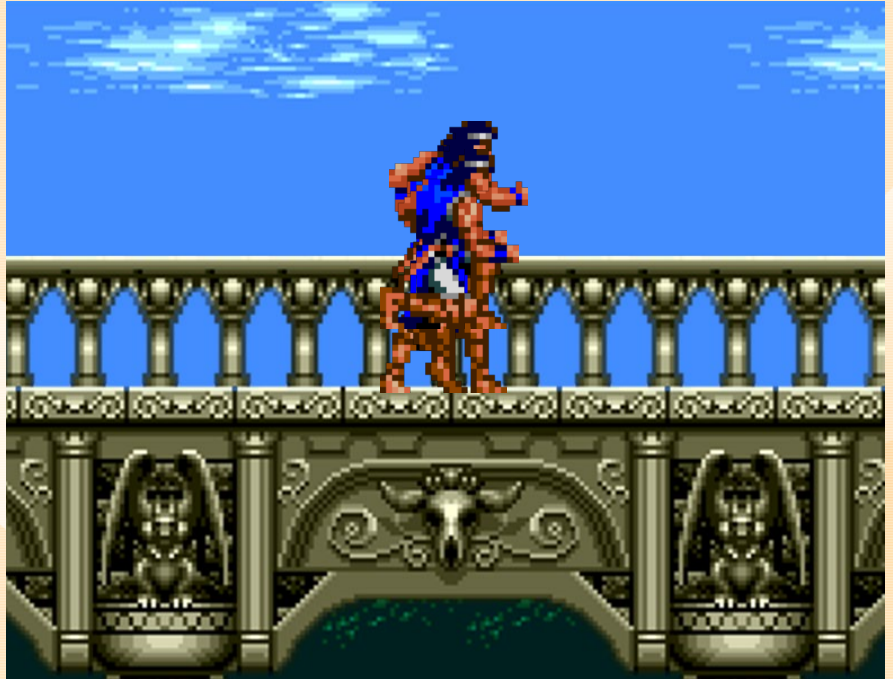
A bug's life

---

# Example: What was seen

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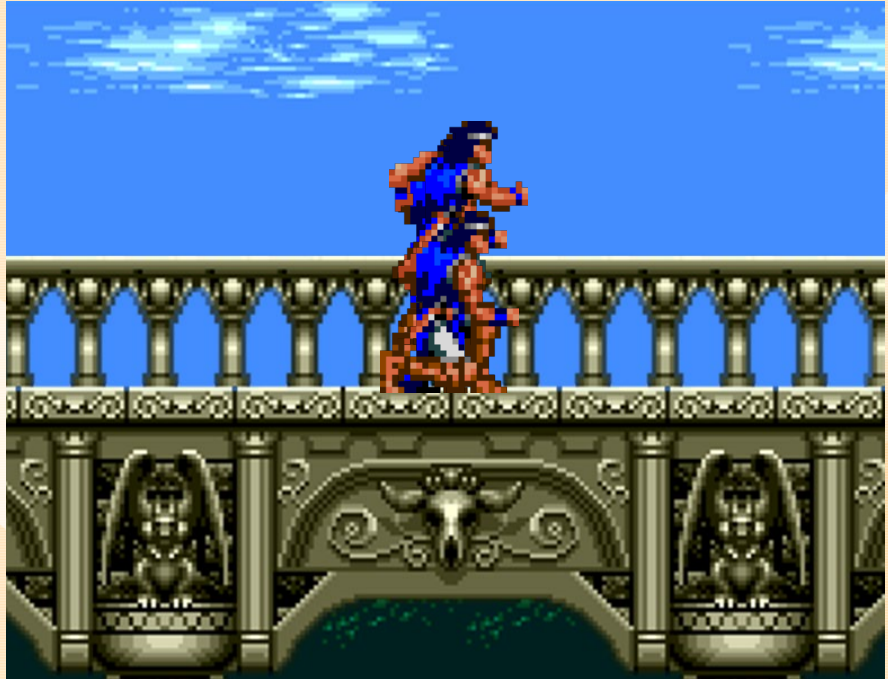
- What was seen



# Example: What was expected

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- What was expected (player)



# Example: Bug reported

Collision issues jumping on the bridge on level two

in list [Open](#)

Recurring

Add #tags

S/E & More

LABELS

C - Minor

+

Description

Edit

From the main menu select new game.

- Complete level one and continue to level two
- Proceed halfway though level two where there is a large ornamental bridge
- 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.

Custom Fields

T FOUND BY

Tester

BUILD FOUND

Round 1

Attachments




image.png

Added just now - [Comment](#) - [Delete](#) - [Edit](#)

[Make Cover](#)

X

SUGGESTED

Join

Feedback

ADD TO CARD

Members

Labels

Checklist

Due Date

Attachment

Cover

POWER-UPS

Custom Fields

Get More Power-Ups

Get unlimited Power-Ups, plus much more.

Upgrade Team

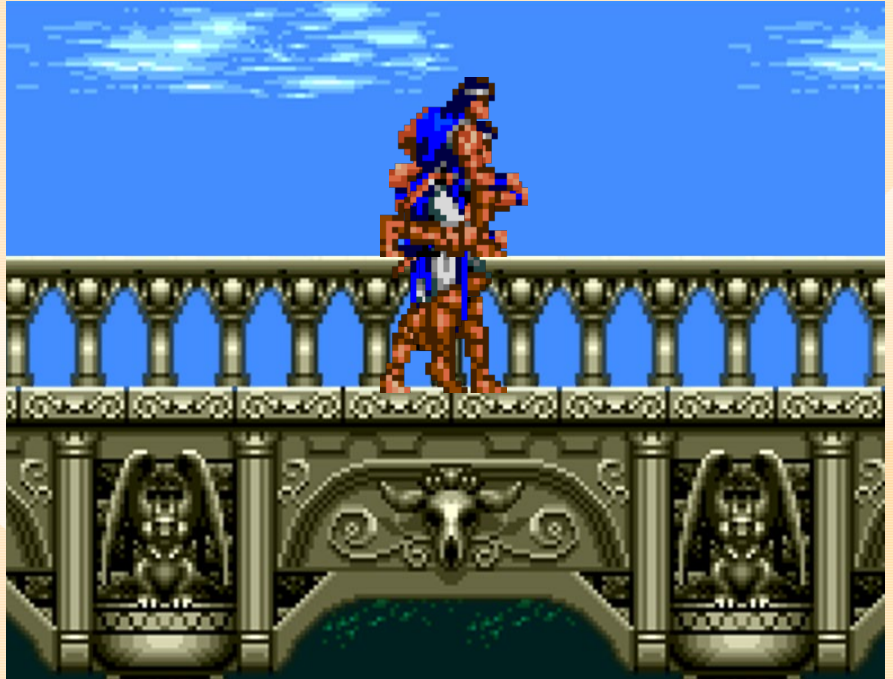
ACTIONS

00:00:00s

# Example: Dev Intent

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- What was expected (Dev)



# Example: Dev response

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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

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Fix the real problem

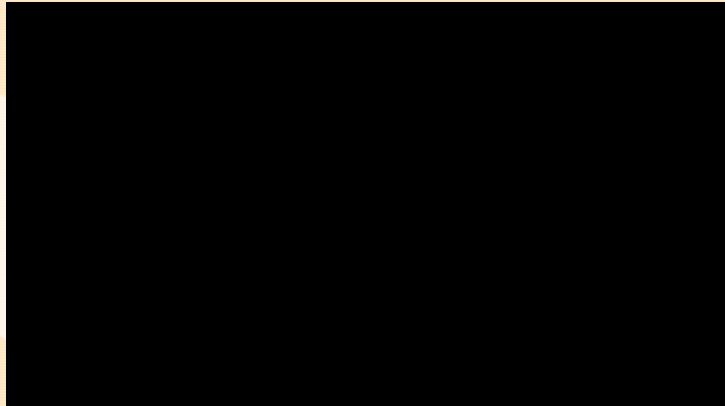
- Frequently the fix is not the expected results
- Many times the fix is informing the player of the intent
- Sometimes the fix is avoiding the issue

# <Activity> Bug Examples

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## Bug examples

- How would we go about resolving issues that get reported to us.
  - <https://youtu.be/CGhme22zvvl>



# Don't let it get Personal

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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

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# Promotional Materials

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# Promotional Materials

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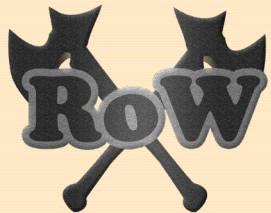
- Promotional materials need to be created
  - Team Logo
  - Screenshot
  - Demo Video
- Why
  - We need them for archiving
  - They will be used at the expo
  - You should want them to promote yourself

# Promotional Materials: Logo

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Create a simple team logo

- Printable
  - No solid background
- Readable at a distance



# Promotional Materials: Screen Shot

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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



- Don't expect to get a perfect screen shot on the first try. generally it takes a lot of attempts and possibly a custom edited game scene to get the screenshot that really hits all the points above.

# Promotional Materials: Video

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## 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](http://loilo.tv/us/product/game_recorder)
  - Not studio or Loiloscope, that adds a watermark

### Editing

- DaVinci Resolve

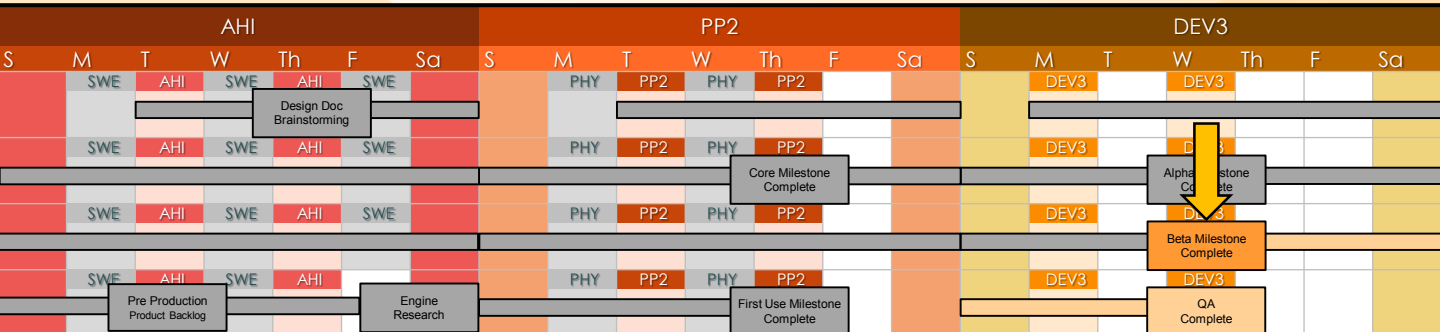




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# Assignments

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# QA Schedule

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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

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## 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

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## 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

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## 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](http://www.gamasutra.com/view/news/104290/Opinion_Quality_Assurance_For_Dummies.php)



# QA Schedule

---

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