

EECS 494 W15 – Assignment 1 – Classic Game Project

Final Due Date: Tuesday, February 3, 2015 at 11:59p

Goals / Spec:

Working in pairs, you will faithfully recreate a commercial game from the 8-bit home console era using C# inside the Unity game development engine. You will be responsible for recreating a single “classic level”¹ of the original game in exacting detail as well as implementing a new “custom level” of your own design. Prior to the start of the assignment, you will be provided with a list of approved games via Piazza. If you wish to do a game not on this list, you need to respond to this Piazza post and ask the faculty whether the game you wish to make is acceptable.

There are several goals to this assignment:

1. You will learn C# and the Unity game engine (while not having to simultaneously design a new game from scratch).
2. You will get a chance to examine and recreate the esoteric design details of a gaming classic. There are dozens of tiny details in these games that made them rise above all of the other games of the era, and many of them are not immediately obvious.
3. You will develop your own collision response system, implemented within Unity. You can use Unity’s collision detection to detect collisions, but you must set *Is Trigger* to true on every collider in your project.
4. You will gain experience with the Agile development methodology—including burndown charts and scrums—that will be used throughout the class.
5. You will take part in the iterative process of design that is the cornerstone to good game design.
6. You will get a chance to see how the game mechanics and technologies that you develop for the recreation of the classic level can be repurposed for your custom level.
7. Remaking or reusing the original graphics is **not** a goal for this project. In fact you will be scored on how well your game emulates the feel of the original game but not on how good the graphics look.

Your game will be delivered as a Unity web build in a web page, and you are responsible for the hosting. For information about the web space provided for you by U-M, look here:

<http://www.umich.edu/~umweb/how-to/homepage.html>

Mindset:

Read the Gamasutra article "How to Prototype a Game in 7 Days" by the Experimental Gameplay Project team from Carnegie Mellon (http://www.gamasutra.com/view/feature/130848/how_to_prototype_a_game_in_under_7_.php?print=1). Then check out their website to see the

¹ A single level of a game would be something like World 1-1 in Super Mario Bros. or a single dungeon in The Legend of Zelda. If you have any question about what would be equivalent to a "level" in your game, please speak with Jeremy or your GSI as soon as possible.

kind of fantastically creative games that can be made by a single person in just one week if approached with the right mindset and abilities: <http://experimentalgameplay.com/> . Remember that in this project, it's much more important to have something that plays properly than something that is coded "properly". The key is capturing the feel of the game and the game mechanics, not fancy coding.

Grading:

You will be graded based on the following criteria (totaling to 100%):

- 5% – Initial Game & Team Turn-in** – Just make sure that you've selected your game and your teammate on time.
- 10% – Prototype Turn-in** – Did you turn in your Alpha on time? Does it appear to be complete? Is the classic level implemented properly?
- 15% – Beta Turn-in** – Did you turn in your Beta on time? Does it appear to be complete? Is your original level working?
- 20% – Mechanical elements** – How faithfully did you recreate the mechanics of the original? Does the game feel complete and internally consistent in the same way as the original? Did you capture the "special sauce" that made the game a classic?
- 15% – Technical elements** – Does the game work? If a game isn't playable, it's not a game. Memory leaks, glitches, and other bugs will count against you for this requirement.
- 5% – Aesthetic elements** – Does the game move and feel like the original? Sprites and actual game art will not count at all for this aspect of the grading, however the "feel" of the game will (see the book *Game Feel* by Steve Swink). Don't forget about music.
- 15% – Original Level** – Does your original level take advantage of the various mechanics in the game? Does it find a new way to remix the classic elements of the game while at the same time feeling like it belongs with the other game levels? Is it at an appropriate level of difficulty? You should try to make a beginner to medium level of difficulty. This should be something like the second or third dungeon in The Legend of Zelda (definitely NOT the last dungeon). Does it have good progression and guide the player well?
- 15% – Process: Agile Methodology** – This will be the first project for which we will be requiring you to follow the Agile development methodology. You will be creating burndown charts that must be updated before each class scrum, and you will be required to take part in at least one scrum.

Tools

To do this assignment you will need to use Unity 3D, MonoDevelop (or Microsoft Visual Studio) and C#. There is no reliable version of Unity available on the CAEN computers, however, Unity is free and is available for both Windows and Mac operating systems (at <http://unity3d.com>). There are also music and audio programs (like Audacity and Garage Band) and paint programs (such as Adobe Photoshop, Macromedia Fireworks, & the Windows Paint program) available on CAEN machines. Additionally, there are lots of game development resources available on PixelProspector (<http://www.pixelprospector.com/indie-resources/>). Also, as a student, you can

get all of Adobe Creative Cloud for <\$20/month (<http://www.adobe.com/products/creativecloud/students.edu.html>) and all of AutoDesk's tools (3DSMax, Maya, Mudbox, etc.) for free (<http://www.autodesk.com/education/student-software>).

Progress Turnins

January 14, 2015: Teams and Game Titles – I need to know what game you will be making and who your partner will be. Submit this to CTools before class on 1/14.

January 20, 2015: Burndown Chart – As described in the video "Intro to Agile Scrum in Under 10 Minutes" (<http://www.youtube.com/watch?v=XU0iIRItyFM>), a burndown chart is a fantastic tool for tracking progress on a project. Look for the instructions on how to use our class's Google Doc-based burndown chart here:

<http://bit.ly/494BurndownInstructions>

Any class day during the project: Scrum – This will always happen on Wednesdays, but I could call some people out on Mondays as well. Be prepared!

As a slight modification on what was shown in the video, participants in a our scrum meetings will answer four basic questions:

1. What are the name and logline of your game?
2. What did you do since the last scrum?
3. What will you do before the next scrum?
4. What is blocking you?

Our in-class version of scrum will be very similar. On scrum days, if you are randomly chosen to present, we will bring up your burndown chart on the projector screen, and you will tell us the name and logline of your game, what you've done since the last scrum, and what you plan to do before the next one. Also let us know if something is blocking you, and we'll find someone to assist you with that (which could be an instructor or a peer).

If you miss a scrum where you are chosen, you must present at another scrum, but you will lose 10% of your Agile Methodology process grade.

January 20, 2015: Prototype – At this point, your game should be playable with the core mechanics in and some of the classic level.

January 27, 2014: Classic Level Beta & Custom Level Alpha – The classic level should be fully implemented. You should also have a rough version of your custom level. Make sure that your new mechanics in custom level are already implemented at this point. This will leave you one week to polish and test your original level. The only real changes that you should make between this beta and the final turn-in should be bug fixes and design changes to your custom level.

Playtests – You are required to show your game on every Playtest day. We will also assign you to play various games made by your peers as homework. When you are not showing, you should try to give meaningful feedback to as many people as possible. You need to have playtests

logged on the online system for your game every playtest day (additional playtest logs will also be beneficial). <http://feedback.prototools.net/>

Final Deliverable

Tuesday, February 3, 2015 at 11:59pm: Final Playable Game – You must submit a zip file to CTools containing the entire Unity project folder for your game **and** a folder containing your compiled web build. Double check to ensure that you can unzip this file and play the game.

Projects that are unplayable because of a bad submission (due to corruption, incomplete submission, or any other reason) will be counted late until they are playable.

Naming Convention: EECS494-W15-P1-LastnameFirstname_LastnameFirstname (e.g. EECS494-W15-P1-GibsonJeremy_BlochMitchell). Be certain to **name your folder before zipping!**

Setting-Up Your Burndown Chart

1. Log in to Google. These burndown charts require a Google account.
2. Go to the template at: <http://bit.ly/494BurndownTemplate>
3. Choose File > Make a Copy...
4. Name the new file W14-A1BD-LastnameFirstname_LastnameFirstname (e.g. W14-A1BD-GibsonJeremy_BlochMitchell) and click Ok. This will create a new copy of the template in your Google drive.
5. Share the new document with the GSI and me:
 1. Click [Share] in the top, right corner.
 2. Add <ayarger@umich.edu>, <bazald@umich.edu>, <gameprof@umich.edu> in the Invite People text area.
 3. Choose "Can Edit" from the popup to the right of that text area.
 4. Click [Share & save].
6. Follow these instructions: <http://bit.ly/494BurndownInstructions>

Late Policy as Stated in the Syllabus

Late assignments will be assessed a penalty of 1% for each 6 hours it is late (4% per day). We will not grant extensions except for extended sicknesses.

Questions

The class forum is available through the CTools Piazza and is by far the best place to ask questions.