unity

Unit 1 Lab

Project Design Document

Steps:

Step 1: Understand what a Personal Project is

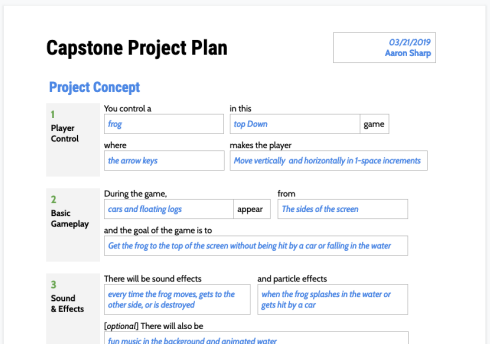
Step 2: Review Design Doc examples

Step 3: Complete your Project Concept V1

Step 4: Complete your Project Timeline

Step 5: Complete your MVP sketch

Example of progress by end of lab



Length: 60 minutes

Overview: In this first ever Lab session, you will begin the preliminary work required to successfully create a personal project in this course. First, you'll learn what a personal project is, what the goals for it are, and what the potential limitations are. Then you will take the time to come up with an idea and outline it in detail in your Design Document, including a timeline for when you hope to complete certain features. Finally, you will take some time to draw a sketch of your project to help you visualize it and share your idea with others.

Project Outcome: The Design Document will be filled out, including the concept, the timeline, and a preliminary sketch of the minimum viable product.

Learning Objectives: By the end of this lab, you will be able to:

- Come up with an idea for a project with a scope appropriate to your time and available resources
- Think through a project's concept in order to better understand its requirements
- Plan out a project's milestones with due dates to better understand the production cycle and to hold yourself more accountable
- Create a simple sketch / storyboard in order to better communicate your ideas

Step 1: Understand what a Personal Project is

Before we get started on our personal projects, we should make sure we understand our primary goals.

Explain

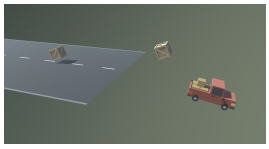
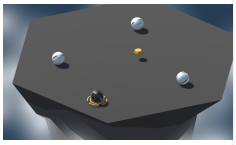
What **Personal Projects** (PP's) are:

- Projects they will be working on on their own with less direct instruction
- A chance to create a project they really care about with their own creative choices
- An opportunity to apply and solidify skills they learned in lessons and challenges

Demo

The **Core Functionality** and skills they will learn from each of the 5 Units by showcasing completed versions of each Prototype:

1. Driving Simulation: **player control** through user input
2. Feed the Animals: **basic gameplay** by spawning random objects on an interval and trying to collect them, avoid them, or fire projectiles at them
3. Run and Jump: **sound and effects,** and animation (of background or player)
4. Sumo Battle: **gameplay mechanics**, powerups and/or increasing difficulty
5. Quick Click: **user interface** with title screen, game over screen, and score display

Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
				

Explain

Goal / Evaluation of the PP's are based on:

- Completeness - how much of what you set out to complete did you actually finish
- Uniqueness / Application - how much did you add new design and dev features, extending and applying your skills in novel and creative ways

NOTE - These two priorities are at odds and it's up to you to find the balance

Explain

You just need a **Minimum Viable Product (an MVP)** - doesn't have to be polished

- Definition: a product with just enough features to satisfy early customers, and to provide feedback for future product development
- This will allow them to focus on the core of the project and not get distracted by flashy features and graphics that don't matter as much

Warning

There will be a **temptation to try and do too much** that is completely different from what anything in the course (e.g. "I want to make "Madden + Facebook + Google!")

- There's *lots* of time to try and do really ambitious crazy projects in the future, but for now on this first project, try to stick closely to the core functionality you're learning
- The *only* limitation is time - with enough time, they could make anything!

Discuss

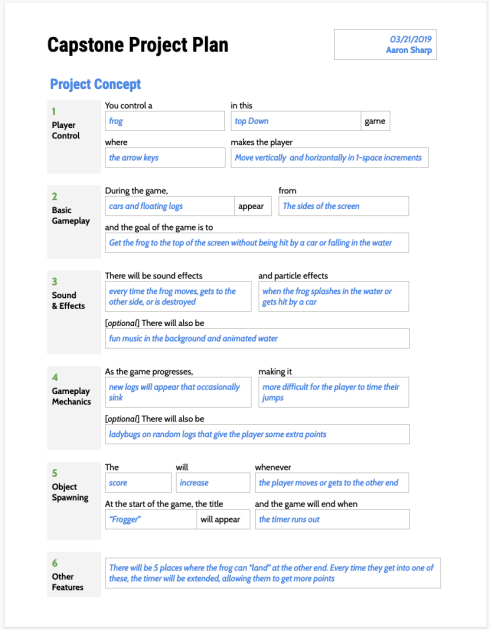
Make sure students understand what the Personal Project is, allowing them to ask questions

Step 2: Review Design Doc examples

Now that we have some idea of what a Personal Project is, let's look a couple examples

1. Click on the link to open a new Project Design Doc as either a Google Doc Copy, a Word Document or PDF
2. Think through how you would fill out a design doc for other games

- **Warning**: you will need to be signed into a Google account to be able to make a copy of the Google Doc version
- **Tip:** Search YouTube for "gameplay" of the classic game you want
- **Explanation:** Notice that sections correspond to what you'll be learning with each unit/prototype



Capstone Project Plan

03/21/2019
Aaron Sharp

Project Concept

1 Player Control
You control a: *frog* in this: *top Down* game
where: *the arrow keys* makes the player: *Move vertically and horizontally in 1-space increments*

2 Basic Gameplay
During the game, *cars and floating logs* appear from *The sides of the screen*
and the goal of the game is to: *Get the frog to the top of the screen without being hit by a car or falling in the water*

3 Sound & Effects
There will be sound effects: *every time the frog moves, gets to the other side, or is destroyed* and particle effects: *when the frog splashes in the water or gets hit by a car*
[optional] There will also be: *fun music in the background and animated water*

4 Gameplay Mechanics
As the game progresses, *new logs will appear that occasionally sink* making it *more difficult for the player to time their jumps*
[optional] There will also be: *ladybugs on random logs that give the player some extra points*

5 Object Spawning
The *score* will *increase* whenever *the player moves or gets to the other end*
At the start of the game, the title *"Frogger"* will appear and the game will end when *the timer runs out*

6 Other Features
There will be 5 places where the frog can "land" at the other end. Every time they get into one of these, the timer will be extended, allowing them to get more points

Step 3: Complete your Project Concept V1

Now that we've seen some examples, let's try to come up with our own project concept.

1. Add your **name** and **date** in the top-right corner
2. **Fill in the blanks** for your project concept
3. **Share** your project concept with someone else to make sure it makes sense to them

- **Explanation:** In the Course Library, you've got human characters, animals, vehicles, foods, sports balls, other random things, but you can always use "primitives" as placeholders in a MVP, then go to the Unity Asset store to get real graphics
- **Tip:** This is good opportunity to catch yourself if you're being too ambitious
- **Don't worry:** This is just a best guess right now, if you want to change your project completely next lab, you could

Step 4: Complete your Project Timeline

Now that we know the basic concept of our project, let's figure out how we're going to get it done.

1. Fill in **milestone descriptions** based on your schedule for the course, including self-imposed due dates
2. Add features that will *not* be included in your MVP to the "**Backlog**"

- **Warning:** This is a MVP, so don't be afraid to put objects on backlog that you'll get to in version 2
- **Explanation:** In Lab 2 you will be setting up your project, in Lab 3 you will do basic player movement, in Lab 4 you will add basic gameplay, and Lab 5 you will add graphics - that would be a good start in filling this out
- **Tip:** This will depend heavily on the schedule you're following for this course - you should leave a significant amount of time to work on it at the end when you've completed all 5 units
- **Don't worry:** It will be hard to do this accurately, since you don't know how long things take - this can change
- **Don't worry:** You don't need to use all milestones - can add more or leave blank rows you are not using
- **Tip:** These should be worded as "Completed functionality" - as in: "Frog can move side-to-side based on left/right arrow keys"

Project Timeline

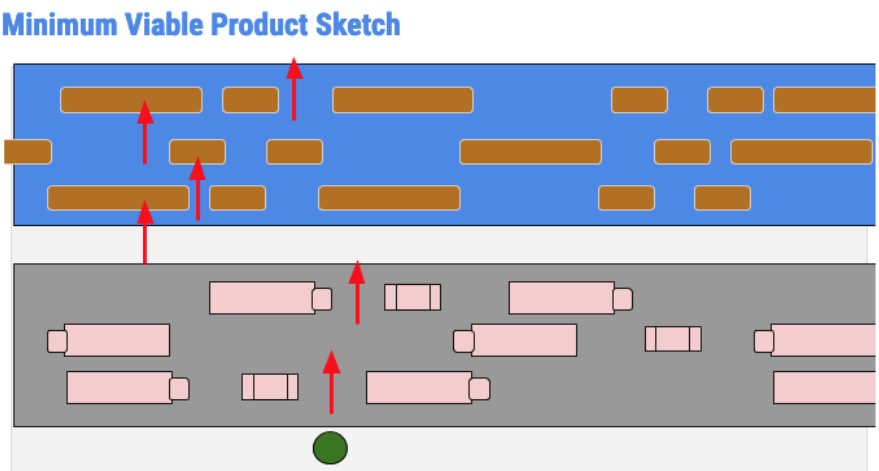
Milestone	Description	Due
#1	- Basic frog movement left to right and side to side	03/01
#2	- Random cars spawning from left and right sides, in 3 discrete lanes - When the player is hit by one of the cars, it will be repositioned at start	04/01
#3	- Logs generating from left/right sides of the screens - The player can ride on these logs and be moved along with them - When player falls in the water (not on log), the are repositioned at start	05/01
Backlog	- 5 discrete areas for the frog to land, each one extending the timer - Random things that pop up and block the 5 landing spots - Ladybug powerup that gives the player extra points and invincibility	09/01

Step 5: Complete your MVP sketch

To help visualize our minimum viable product, it's always helpful to have a sketch.

1. Look at sketch in the **example**
2. Using Google Docs, some other online simple drawing program, or pencil and paper, draw a sketch of your MVP and add it to your doc

- **Warning:** Do not spend forever on this - it's just a sketch - use circles, squares, and arrows
- **Explanation:** This should just be a sketch of your MVP - what you hope to accomplish by the end of the course - *not* the fully fledged product



Lesson Recap

New Progress	• Completed your project concept and production timeline
New Concepts and Skills	• Personal Projects • Design Documents • Project Timelines • Project Milestones and Backlogs • Minimum Viable Products