# Unity Optics
Sprint 1 Plan

Team Unity
Sprint Completition Date: 7/8/2019
Revision 3: 7/20/2019
University of California, Santa Cruz

July 20, 2019

## 1 high Level Goals

For the first sprint, our goal is to have a simple game demo showcasing the ability to detect objects in-game and store basic telemetry of player's interactions such as time watching and distance from advertisements. More specifically, our goals are:

- Detect in-game objects when they are on screen.
- Calculate basic data including time watching objects, distance from objects, and angle from center of screen to object in game.
- Send and store this data in a JSON format.
- Export the Unity game to a webpage.

## 2 Task Listing

Below are the tasks for each team member organized by user story.

## 2.1 User Story 1 [8]

As a game developer I want to know when an advertisement is within a player's view so I know playrers can see the ad.

- Task 1: Import Unity assets to create a simple playable demo. (2 hours) **[4]**
- Task 2: Write a .cs script to detect when an object in the game scene is rendered within the player's camera view plane. (1 hour) **[4]**

## 2.2 User Story 2 [4]

As a game developer I want to track how much time is spent watching an advertisement in-game so I know if players are engaged by the ad.

- Task 1: Add a script that, when the object is rendered within view plane, tracks how long it is within that view plan. (1 hour) **[2]**
- Task 2: Develop a simple Telemetry Class that facilitates adding more methods for tracking player's interactions with objects. (1 hour) **[2]**

## 2.3 User Story 3 [4]

As a game developer I want to track the distance to the advertisement and angle from center of the player's view to the ad so I can imitate eye tracking.

- Task 1: Add on to telemetry class a method that calculates the 3D vector distance from player object to game object. (1 hour) **[2]**
- Task 2: Add on to telemetry class a method that calcualtes the angle from center of player's screen to object's position on 2D screen plane. (1 hour) **[2]**

## 2.4 User Story 4 [4]

As a game developer I want to marshal this data into a file so I can retrieve it later.

- Task 1: Create a class that defines a method for formatting the time, distance, and angle data into JSON. (1 hour) **[1]**
- Task 2: Write JSON data to separate files for each game object tracked. (1 hour) **[1]**
- Task 3: Connect Google Firebase to the Unity project for storing and retrieving data in the future. (2 hours) **[2]**

### 2.5 User Story 5 [2]

As a game developer I want to visualize and display my data on the web.

- Task 1: Export a Unity Game ot the Web. (1 hour) **[1]**
- Task 2: Create a simple landing page for the exported Unity game (2 hours) **[1]**

## 3 Team Roles

- Matthew Rhea: Product Owner, Developer
- Shealtiel Mulder: Developer
- Minsu Jang: Developer
- Boaqing Xie: Scrum Master, Developer
- Ninghao He, Developer

## 4 Inital Task Assignments

- Minsu Jang: User Story 1, Write a .cs script to detect when an object is in the player's camera view plane.
- Shealtiel Mulder: User Story 5, Export Unity game to the web.
- Baoqing Xie: user Story 5, Create a simple HTML landing page for the exported Unity game.

- Ninghao he: User Story 3, Add distance and time telemetry.
- Matthew Rhea: User Story 4, Connect Firebase to the Unity Project for storing and retrieving data. Set up Continuous Integration and Unit Testing for Unity projects through Travis-CI.

# 5 Initial Burnup Chart

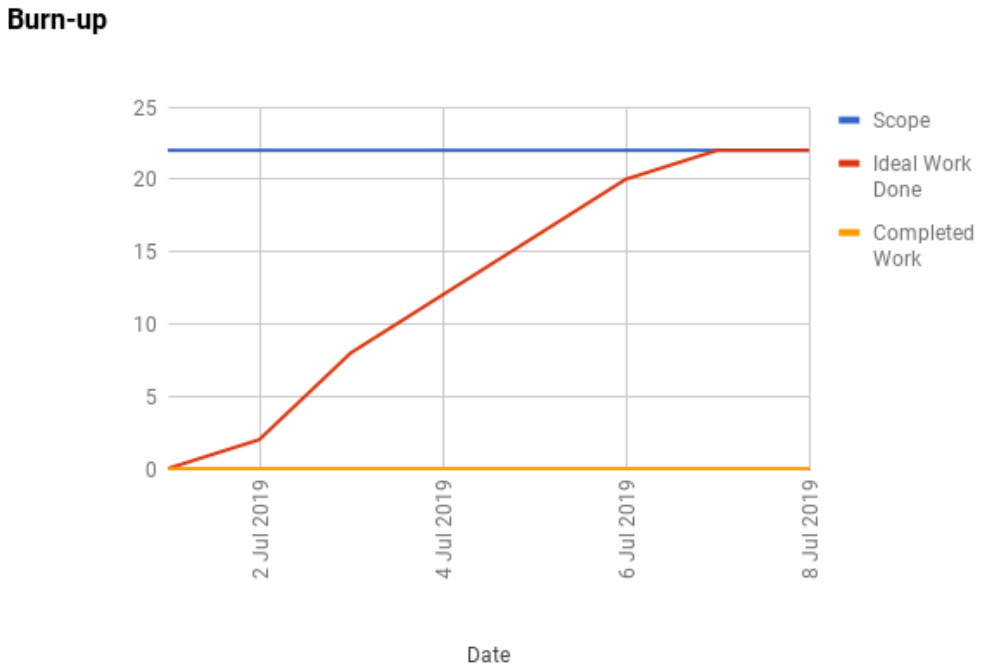


Figure 1: *Initial Burn-Up Chart*

# 6 Initial Scrum Board

[See this on Trello]

# 7 Scrum times

Our Scrum times throughout the week:

- Mondays at 1:30PM until 3:30PM.
- Tuesdays at 1:30 until 3:30PM.
- Wednesdays at 1:30PM until 3:30PM.
- Thursdays at 2:00pm until 4:00PM.

TA Meetings:

- Mondays at 3:30PM until 4:00PM.
- Thursdays at 3:15 until 3:45PM.