

# CS307 Sprint 2 Planning Document

Team 2 - Anant Goel, Don Phan, Jason Rahman, Jon Egeland, Josh Selbo, Levi Linville

## Prologue

### Organizational Details

The previous scrum master, Jason Rahman, has resigned from his post, and Josh Selbo will assume the position of scrum master effective October 20th, 2014.

### Meeting Schedules and Team Policy

We will continue our previous schedule of holding standup meetings each Tuesday, Thursday, and Sunday. The Sunday meeting may also be extended to include planning, preparation, and other important group tasks. Developers are encouraged to meet one-on-one or in small groups when discussing and working on related or interconnected user stories.

Team policy dictates that all members are required to attend all meetings. If a team member cannot attend a meeting, he or she shall communicate to the group progress, concerns, and feedback through the GroupMe group or via email. Each team member is expected to make a fair contribution and be proactive about communicating perceived obstacles.

### Systemic Risks

There are few apparent risks for this upcoming sprint. The greatest challenges will include solidifying gameplay mechanics, defining client-server interactions, and designing the actual game levels.

## High Level Goals

Our high level goals for Sprint 2 are threefold. First of all, we will complete and polish the user management experience we initially developed in Sprint 1. Secondly, we will develop a visually appealing game client using Phaser and modern web development technologies. As part of the game client development, key gameplay elements will be concretely defined. Thirdly, using the infrastructure developed in Sprint 1, we will complete the grading server, containerized execution environment, and submission feedback system, and then integrate all three components into a functional game.

We are reserving the final sprint for additional tasks in response to changing requirements, as a buffer against missed tasks, and additional time for polishing functionality prior to the project deadline.

## Sprint 2 Stories

Story	Tasks	Owner	Time Estimate (Hours)
As a student, I want game logic to run inside a contained environment	<ul style="list-style-type: none"> <li>• Build container image</li> <li>• Initialize container API</li> <li>• Create container API</li> <li>• Delete container API</li> </ul>	Jason Rahman	5
As a student, I want feedback about my submissions	<ul style="list-style-type: none"> <li>• Create user friendly error reports with hints</li> <li>• Send parsable errors to the front-end</li> </ul>	Levi Linville	10
As a student, I want to be able to send submissions to the server	<ul style="list-style-type: none"> <li>• Add code-editing form to level view</li> <li>• Add submission button</li> <li>• Route submissions to the grading server</li> <li>• Add token authentication endpoint in Rails</li> </ul>	Jon Egeland	5
As a student, I want levels to be run within a session	<ul style="list-style-type: none"> <li>• Implement session API in client</li> <li>• Integrate with server and test</li> </ul>	Jason Rahman	3
As an instructor, I want to drop students' from my classes	<ul style="list-style-type: none"> <li>• Add enrolled Student list to Instructor view of class</li> <li>• Add drop button for each Student</li> <li>• Limit withdrawal abilities</li> </ul>	Jon Egeland	1
As an instructor, I want to approve students' enrollments in my classes	<ul style="list-style-type: none"> <li>• Create pending enrollments view</li> <li>• Limit viewing abilities</li> <li>• Implement approval action</li> <li>• Re-route requests through approvals</li> <li>• Allow bypass for "Open Enrollment" courses</li> </ul>	Jon Egeland	3
As an administrator, I want to reset a user's password	<ul style="list-style-type: none"> <li>• Fix the view redirect to the correct pages depending on user.</li> </ul>	Don Phan	1

As a developer, I want the game logic encapsulated into a C++ library for portability	<ul style="list-style-type: none"> <li>• Define API</li> <li>• Create level parser</li> <li>• Implement scripting</li> <li>• Implement output</li> </ul>	Jason Rahman/ Josh Selbo	15/ 5
As a developer, I want to have the core game engine implemented in C++	<ul style="list-style-type: none"> <li>• Create game loop</li> <li>• Define Level class</li> <li>• Define base Actor interface</li> <li>• Create GameState object</li> <li>• Create mutable State stack.</li> </ul>	Jason Rahman/ Josh Selbo	10/ 5
As a developer, I want a Python wrapper around the gameplay library	<ul style="list-style-type: none"> <li>• Write function API</li> <li>• Write object API</li> </ul>	Jon Egeland	5
As a developer, I want game assets to be stored in a database for consistent access	<ul style="list-style-type: none"> <li>• Create server to server resources</li> <li>• Create database to store resources</li> <li>• Create simple tools to add/view/remove resources</li> </ul>	Jon Egeland	5
As a developer, I want a clearly defined format for game resources	<ul style="list-style-type: none"> <li>• Define visual tilemap format</li> <li>• Define logical tilemap format</li> <li>• Integrate formats with grading and resource servers</li> </ul>	Josh Selbo	3-4
As a developer, I want students' code to communicate with the game library	<ul style="list-style-type: none"> <li>• Create restricted Python sandbox</li> <li>• Write server to receive requests</li> <li>• Return completed result</li> </ul>	Levi Linville	10
As a student, I want to play a level in the client	<ul style="list-style-type: none"> <li>• Implement animation on tilemap based on results</li> <li>• Display feedback and results from the server</li> <li>• Implement sending submissions</li> </ul>	Josh Selbo	10
As a student I want to read tutorials to help me with the gameplay	<ul style="list-style-type: none"> <li>• Creating routes to go to specific pages for tutorials</li> <li>• Create tutorial pages</li> </ul>	Anant Goel	10
As a student I want to have hints available for tough	<ul style="list-style-type: none"> <li>• Implement pop-ups for hints</li> <li>• Implement hint button</li> </ul>	Anant Goel	5

problems	<ul style="list-style-type: none"> <li>• Create subject matter for hints</li> </ul>		
As a student, I want the game to have a well designed curriculum	<ul style="list-style-type: none"> <li>• Create outline of curriculum</li> <li>• Design three distinct levels</li> <li>• Create challenges</li> <li>• Test if problems are appropriate</li> </ul>	Don Phan/ Josh Selbo	15/ 5
As a developer, I want to create NPCs so students can interact with them.	<ul style="list-style-type: none"> <li>• Create interactions ranging from giving advice, presenting challenges, and sharing secrets.</li> <li>• Ensure integration with grading server</li> </ul>	Don Phan/ Josh Selbo	5/ 3
As a student, I want well designed maps for the levels	<ul style="list-style-type: none"> <li>• Create maps for the different levels we intend on including</li> </ul>	Don Phan	5
As a student, I want to view my progress	<ul style="list-style-type: none"> <li>• Create comparison for distinct level_id submissions</li> <li>• Define the criteria for class progress</li> <li>• Have a bar to show how much of the course is done, in %'s</li> </ul>	Anant Goel	10
As a student, I want to see a prompt for the level I am currently playing	<ul style="list-style-type: none"> <li>• Add prompt definitions to the Level database table.</li> <li>• Define content structure for prompts.</li> <li>• Edit level view to include a prompt section.</li> </ul>	Jon Egeland	3
As an instructor, I want to see all of my students' submissions.	<ul style="list-style-type: none"> <li>• Normalize the Submissions table into an Attempts table.</li> <li>• Create the Submission view, including the list of attempts.</li> <li>• Create the Attempt view to display each attempt.</li> </ul>	Jon Egeland	3
As an instructor, I want to compare two Attempts.	<ul style="list-style-type: none"> <li>• Create Attempt comparison view.</li> <li>• Incorporate the "diffy" gem to automatically diff attempts.</li> <li>• Stylize the diff to improve</li> </ul>	Jon Egeland	3

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## Backlog

The intent is for the sprint backlog to be essentially empty following Sprint 2. Sprint 3 is mainly reserved for additional requirements that emerge from Sprint 2, and stories that are not successfully completed. The following lower-priority user stories will additionally be placed in the backlog.

- As an administrator, I want the entire system to be easily deployed to common hosting providers.
- As a student, I want to be able to play levels of the game in another programming language in addition to Python.