BBD VAC WEEK 2021

Team 4 - SPLAT!
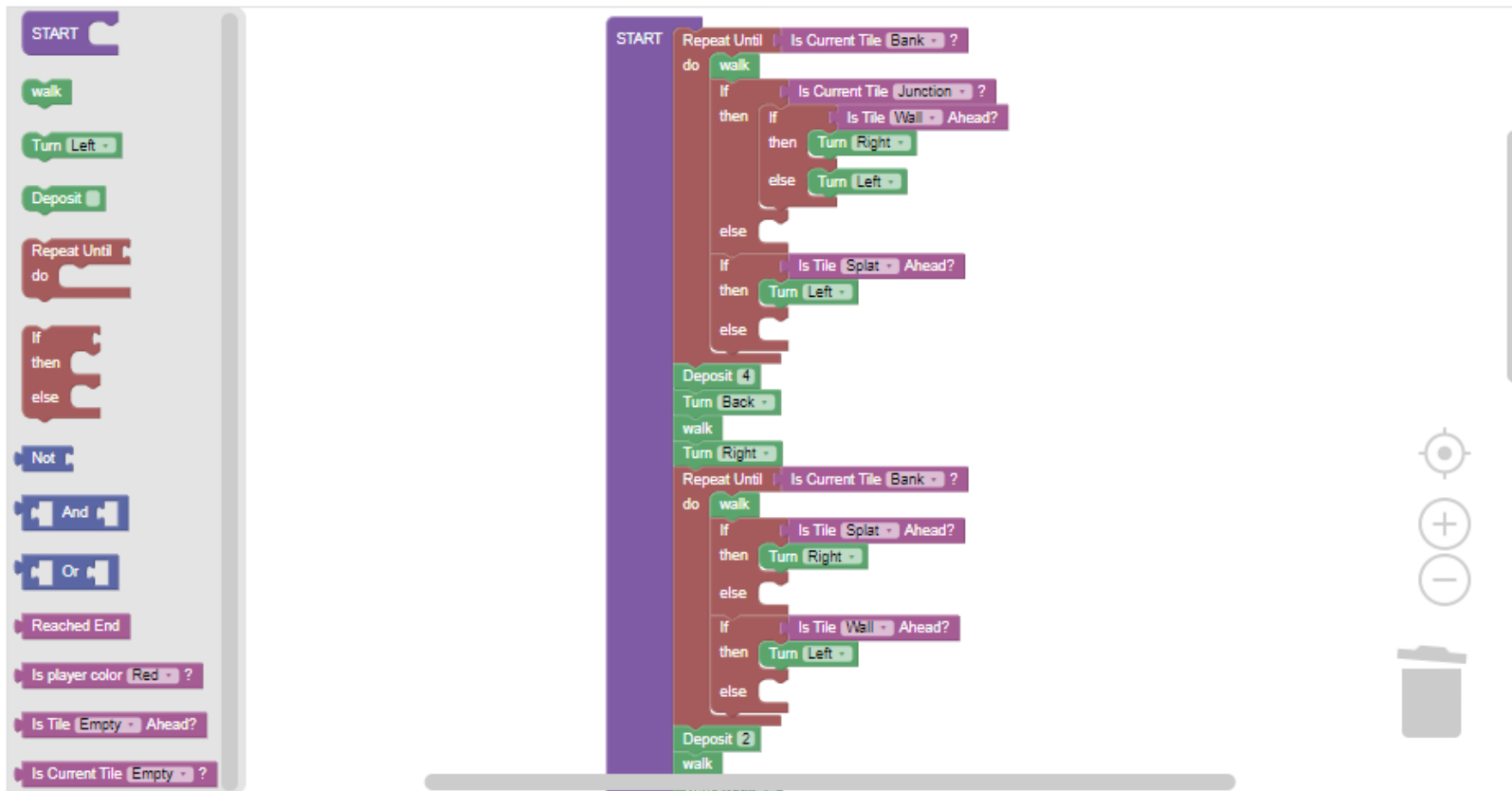
Basic Problem Outline:

◦ New Bursary program applicant test

◦ Must be fair to all levels of student applying for the bursary.

◦ Grading should be automatic rather than requiring human grading.

◦ The test should test logical thought processes and attention to detail.

Our Solution: SPLAT

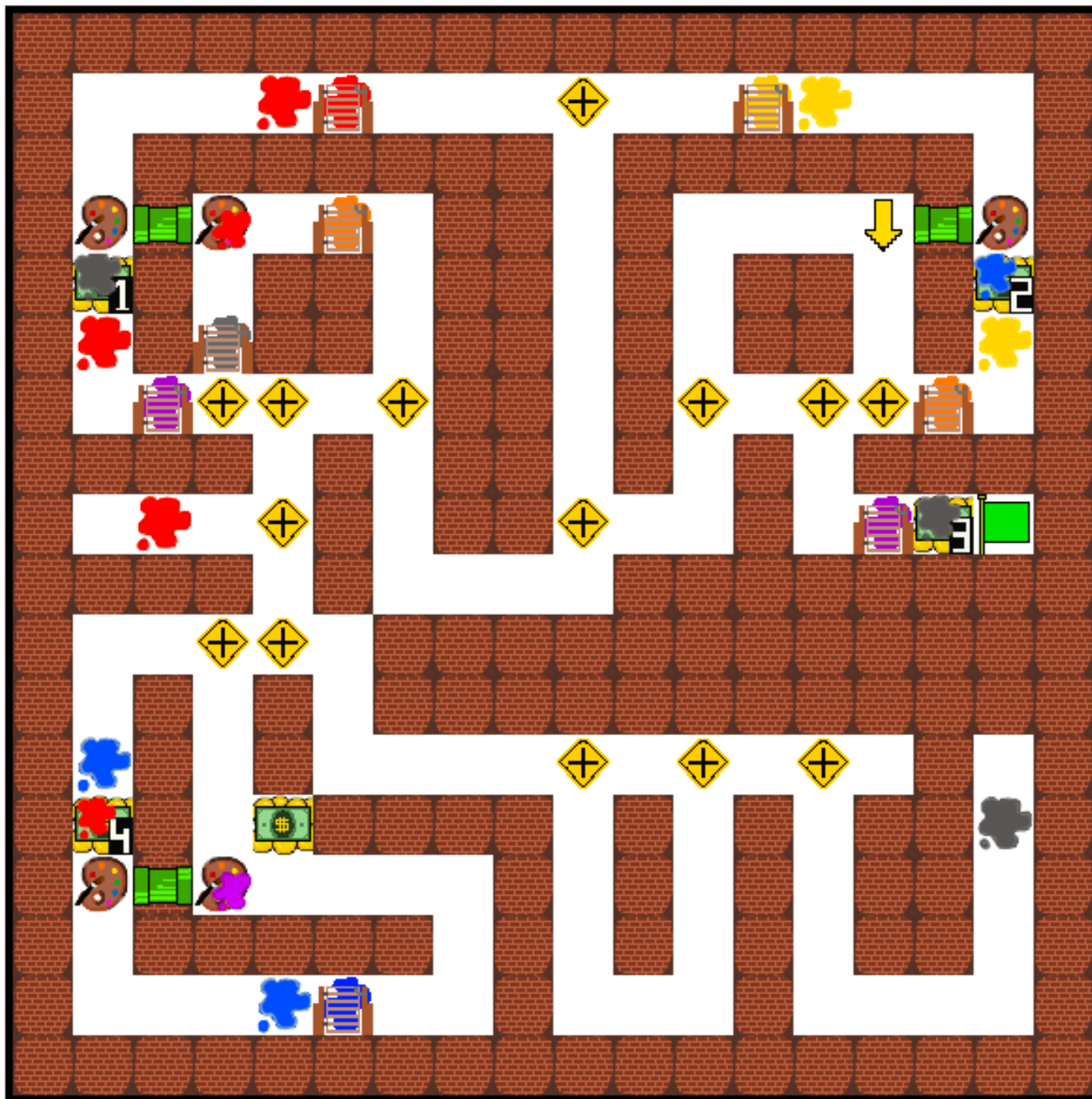Splat is a combination of a colour based puzzle game and pseudo-code blocks.

The Pseudo-Code

Implemented using code blocks from Blockly.

Converts code blocks into an array of command objects.

Command objects are interpreted by engine.

The Puzzle

Comprised of many assets which are only rendered when changed.

Engine translates commands into map state changes which are then rendered.

Bank Stores your color at using deposit(1-4)

Mixer Automatically mixes your color with 's color
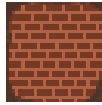
Gate Can only pass through this when color matches, i.e.

Junction A special tile to indicate a crossroads. Aids in navigation

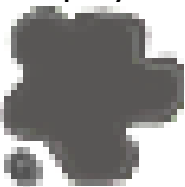**Wall** You can't walk through them, just like the ones at home.
See also:

Goal Walk onto this to win. You have to be the same color though.

Empty It's literally an empty tile you can move on

Splat The titular tile, which changes your color. It's really integral to every solution, so I made it big.

Also splats ->

How to play

Drag code blocks into the white code staging area within a start code block.

The start button will run your code.

Preview will show the demo solution.
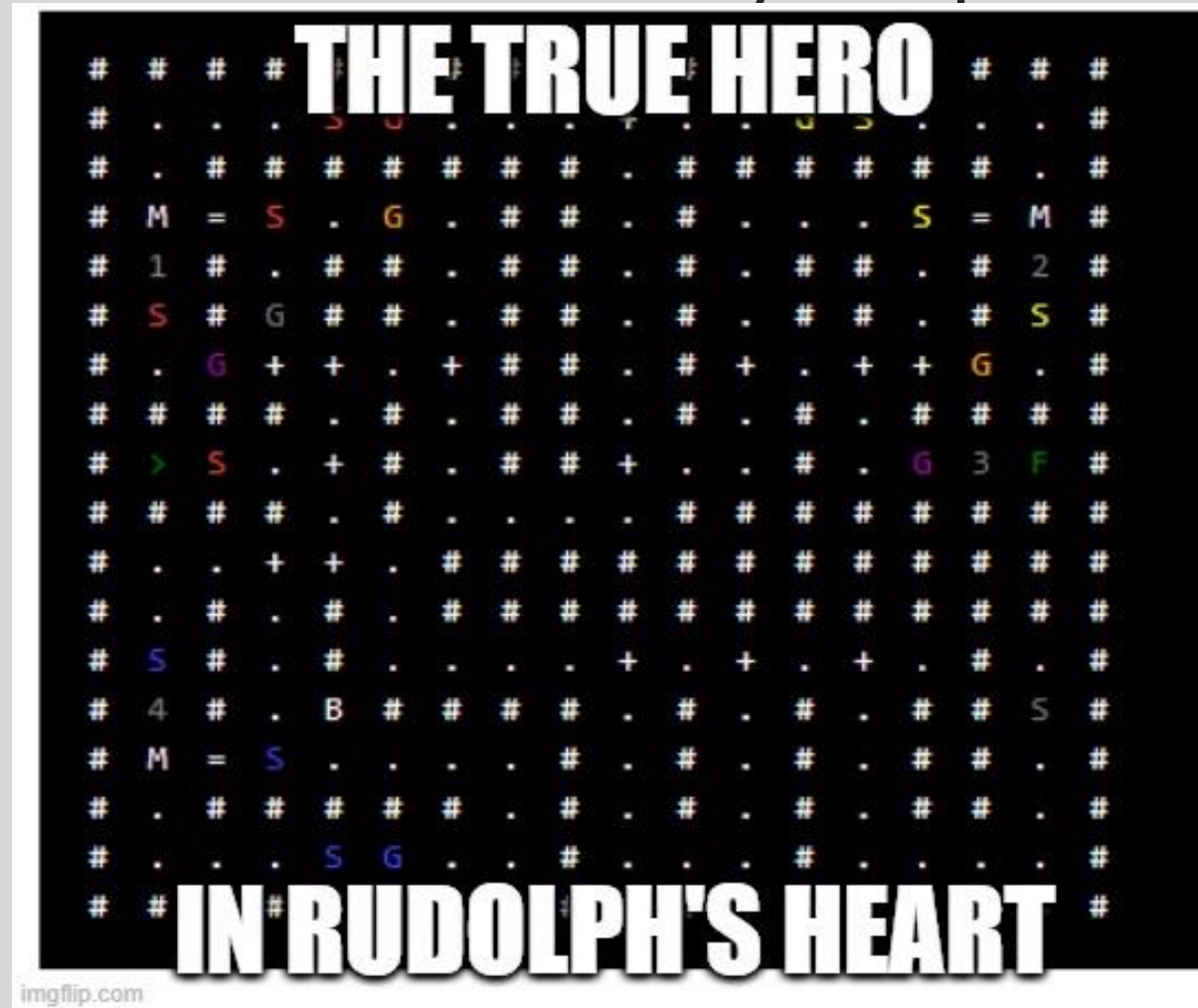
Scoring and Fairness:
The True Challenge

◦ Points are given per level cleared

◦ Metrics such as number of commands used and time taken for a level are used to scale difficulty according to a predicted level of proficiency.

◦ Predicted proficiency level is made available with the score.

◦ If an Honours student has a predicted proficiency of Grade 9 scratch leaner, you should probably consider ignoring their application.

◦ (Disclaimer)We don't have a scaling algorithm due to critical lack of test data and data scientists.
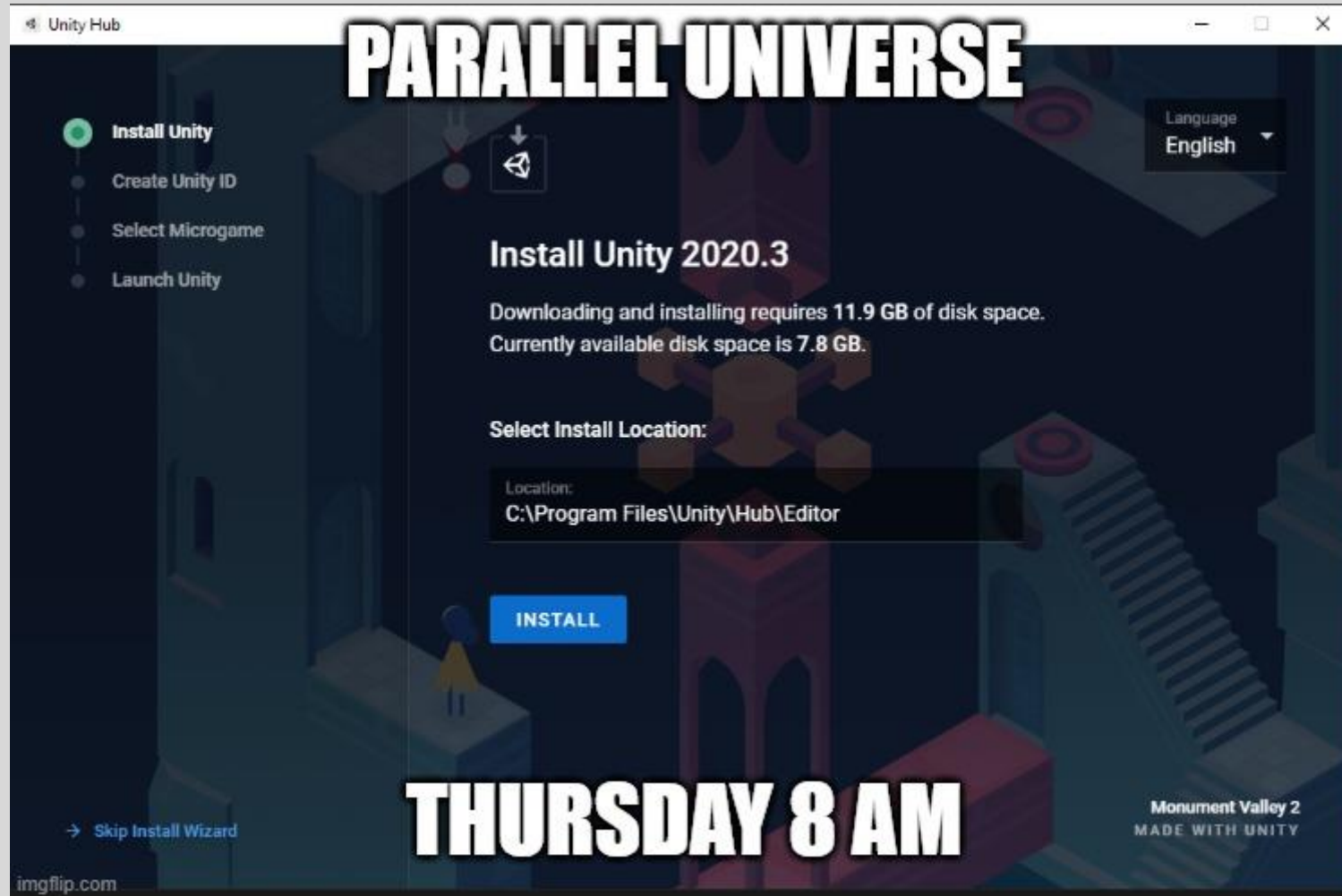
Demo Time!

Further Development

- Implement the metric collection
- Implement difficulty scaling based on metrics
- Limit the number of times a code block can be used per level
- Level editor
- Conversion from JS command objects to Code blocks on the webpage
- Pretty interfaces
- Optimise rendering
- Implement storage and access to scores

Now for the actually important stuff

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