

Statement of Work
18-500 Team B5: Melodee Li, Eric Maynard, Aarohi Palkar

Overview of Changes

Melodee and Eric plan to be in the same location for the rest of the semester, and Aarohi will be on the west coast. However, since Aarohi's tasks were mainly writing/modifying the interpreter (software), the bulk of our project will remain the same. Since Aarohi cannot contribute to assembly and testing of the tiles, she will be focusing more on adding features to the interpreter. The interpreter itself will now be written entirely in python and CodeBlox output will be visible on a computer, instead of a physical robot.

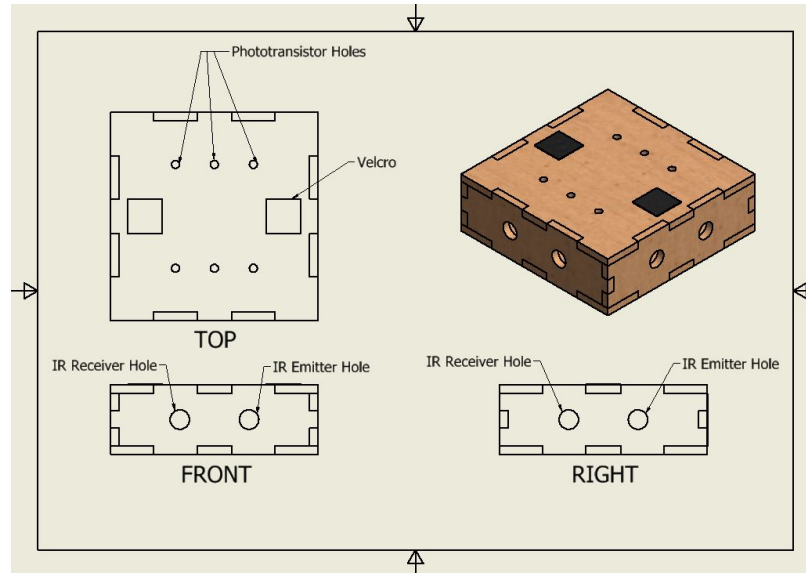
Change in Requirements

One of our original requirements was for the prototype to have 30 working tiles. To reduce the expectations of our implementation and focus more efforts on design, we will change this requirement to 5 working tiles. We are still intending to construct 30 tiles, but we are loosening this requirement to give us more leeway in case the tools we have are insufficient.

Since most of our project will be unchanged, none of our other requirements should be affected.

Changes to Subsystems/Individual Tasks

- PCB
 - All components will be through-hole, since we don't have the means to solder surface-mount components.
- Embedded Protocol
 - No change.
- Interpreter
 - Written in python instead of Arduino C.
 - Output is a laptop instead of a robot. Output tiles now contain `print` statements.
 - Deserialization of master tile stream output now done in python as well.
 - GUI to visualize CodeBlox execution and easy identification of errors.
- Tile Enclosures
 - Our original tile enclosure design had multiple puzzle-like pieces (top, bottom, and sides). We were planning to use TechSpark to laser cut wood and glue the pieces together. See below for CAD drawing of original design.



- Since we no longer have access to TechSpark, Melodee and Eric will redesign the tile enclosures and attempt to construct them using a CNC machine and drill at hand. We're not entirely sure what will have to change, but most likely we wouldn't be able to use the puzzle-piece design anymore and will instead create rectangles and glue them together.

Tentative Schedule

Our updated schedule can be found on our Gantt chart. To summarize, these are the changes we have made:

1. Tile Enclosures and PCBs will now be assembled by Melodee and Eric only.
2. Interpreter: Aarohi will first work on porting the interpreter to python, followed by error checking logic. Both of these will be done by the end of March. Then Aarohi's tasks involve adding a GUI to visualize codeblox programs and error recording. After the first week of April, Aarohi will then add functions. Some stretch goals after this include functions in more than one variable, recursively evaluating expressions.