Suppose you are a bunch of researches in that specific domain. I mean – what would be the first thing you’d want to have made available for use? Wouldn’t it be nice to be able to customize your robots a little, instead of having this boring plain robot that runs around like an idiot?

Well, congratulations! We have designed a way to add different capabilities to our little robots, capabilities that enhance the robots’ abilities, as well as improve the physical realism of the system. There it is: the decorator pattern. I’d like to assume I do not need to explain what this design pattern entails…

Hypothetically, making robots better is always fun, but as the bunch of researchers that you are, you want to have realistic results from your observations. Let’s say you want to simulate a failing robot, no need to worry! We have added a couple of “handicaps”, if we can put it that way, such as too big, too small, too fast, too slow, no gripper (basically too retarded to pick up blocks), etc…

Ok, we have spoken of robots and making them better (or worse). But that ain’t all! We wanted more than this boring map we see all the time. What if you were able to modify this map, and modify it entirely? There it is: the Environment Store.

Simple: select the dimensions of the map you want to make. You are directed to a grid full of corridors. You want to preview the map? Fine – click on preview. You can modify the layout of the map as much as you want. Add a blockade if you want obstacles, add charge zones if you want a place where robots equipped with a battery can recharge, and add rooms the way you want them! Don’t forget the start and drop zone, or you won’t be able to save the map!

If you are a lazy ass and you want everything made for you, the possibility to randomize rooms has been made available. This randomization is based on a boring algorithm I will only describe on a high-level: pick one of the already existing maps, reclassify some of the rooms as corridor, blockades, charge zones, whatever… And there you go! You have a randomly generated map!

And it wouldn’t be called Blocks World 4 Teams if there were no blocks! Adding blocks is simple, you have a color palette that appears when you click inside of a room. Clicking on a color, you can add blocks of that specific color. The color sequence to be picked works the same way. You can also choose to randomize it all (if you’re still a lazy ass).

Once your map has been made and you are happy with it, save it. A warning will be displayed if the map is unsolvable, meaning not all blocks to be picked up can be reached.

I believe that is it for the BotStore and EnvironmentStore, I will give the floor to Calvin who will give you a nice description of what more there is to this system.