

MARKET RESEARCH

I have researched a game named SpaceChem. SpaceChem is an indie puzzle game from Zachtronics Industries, loosely based on the principles of chemistry and chemical bonding. Players build machines using mechanics similar to visual programming that assemble and transform chemical compounds. Player later connect those machines together to form complex pipelines, and ultimately construct special pipelines to fight back against space monsters that threaten humanity.

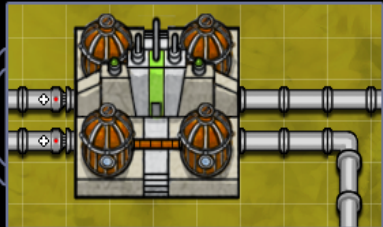
In SpaceChem, players must construct molecules which are made out of atoms that bonded together. Most atom and molecules based off of those from real life. For example, one puzzle requires players to build a machine that combines H_2 and O molecules to create H_2O molecules. Many molecules have short blurbs of chemistry trivia associated with them.

The core programming model consist of two threads that operate simultaneously, requiring players to explore and master concepts like in-order execution, loops, branching, synchronization primitives and subroutines in an organic and comprehensible environment.

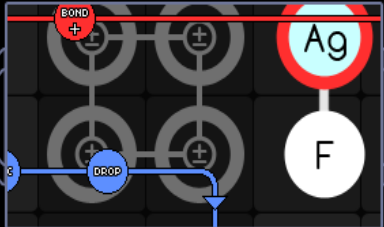
The most definitive part of the game is that it is possible to get a grasp of programming and computer engineering concepts without even realizing it.

Back Story Training Performance Continue

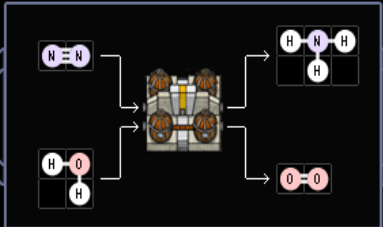
Reactors and Reactions



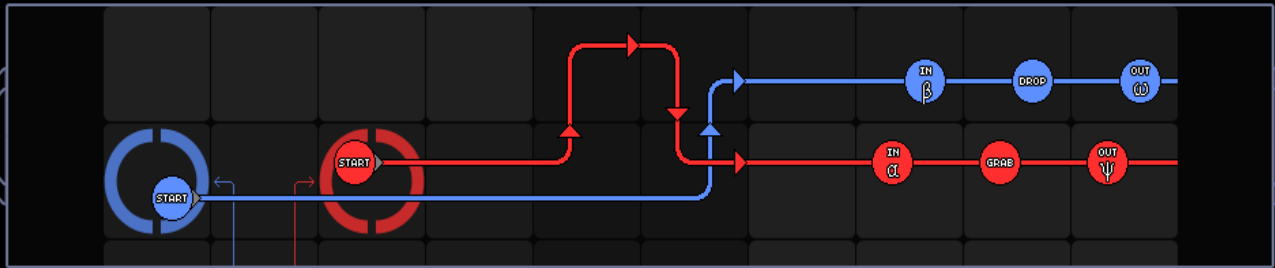
REACTORS are programmed with REACTIONS to transform one set of chemical substances into another.



Reactors may move atoms, rotate molecules, and modify bonds.



In RESEARCH ASSIGNMENTS, a reactor is programmed to perform a single reaction.



These are WALDOS. They grab, move, rotate, and drop atoms. Atoms bonded together into molecules move together.

Waldos move constantly and can be redirected with ARROW INSTRUCTIONS.

Waldos execute ARROW and REACTOR INSTRUCTIONS of the matching color when passing over them.

As you can see in the training picture above there is a lot of similarity to designing a software. Game developers introduced visual tools rather than forcing players to program all interactions between objects with hand. This feature enables them to reach a wider range of audience, thus, making the game available for people without a background in programming or computer science.