

Type Tetris

Dan Trewin and Chris Johnson
UW-Eau Claire

Abstract

Type Tetris is a game designed to help beginning programmers master the basic principles behind types. Although the game was created with Unity and C#, it is specifically targeted at teaching players about Java types and syntax. Java is the introductory language most schools teach nowadays, but my game could be easily adapted to help students learn any computer language. My project uses a game format because it makes it easier for students to learn and hopefully they will enjoy the process!

Early levels are fairly simple and describe to players what they should be matching. Like in Tetris, blocky pieces will fall from above and players can move the falling piece around as he/she sees fit. However once a piece has landed, it becomes immovable and players can only control the next piece. If too many pieces end up in the wrong places, the player can lose the level. The first few levels ask players to match primitives like boolean, integer, or double to respective boolean, integer, or double values. From there, the difficulty ramps up rather rapidly! Players start seeing objects like strings and method calls to built-in Java objects that return a primitive value like `Math.floor()`. The game also tries to trip players up by occasionally giving you a piece with the word boolean or double wrapped in quotes, which of course changes it from a type to a string value.

With its level structure, Type Tetris slowly introduces new concepts. This keeps players interested and engaged! Too many educational games quickly become boring or tedious because it becomes so obvious that the game is simply trying to “trick” players into learning. Even if players only try out my game briefly, some of the concepts its teaching will stick with them, which is my ultimate goal.