

Ultimate Cod Fishing: An Interactive Game for Learning Computer Science

Adrian Abundez-Arce and Chris Johnson
UW-Eau Claire

Abstract

Ultimate Cod Fishing is a game for an introduction to data-type matching. The game commences with the player on the boat on the left side of the screen. There will a small dialog prompting the user to learn the controls of navigating throughout the game via the player or boat. It will guide the player to selecting the fishing rod, and casting it into the lake. After casting the fishing rod, the camera will zoom to the fishing lure and prompt the player to choose the correct fish with the data-type on the lure. The player will know what fish is the correct option by looking at the name on the fish swimming inside the lake. When the player touches a fish with the lure, the fish automatically hooks on the lure, and the camera goes back to the player while the fishing rod automatically reels in the fish. If the fish is the correct value, the player has successfully caught a fish and can catch more fish by recasting the rod. The rod will also randomly change to different data-types to help the player learn other data-types. Otherwise, the fish will unhook once it reaches on the top, and a dialog saying “<Name on the fish> does not match with <data-type on the lure>. Try Again!” will appear to notify the player of the mismatch.

The game runs on Unity, and both the source code and the game are freely available for others to try out. The goal for the game is to aid beginner Computer Science students with an interactive way to learn data-types and its correct values. Having games being interactive will help students with remembering data-types and the correct value as research has shown games creating positive results with retention over time. Even though the game isn't that complicated or sophisticated in terms of graphics and sound, there has been research done where a game increases the motivation and the interest of students learning a certain concept over a traditional classroom. In the future, this game can be modified to encapsulate more Computer Science concepts like inserting correct parameters for a certain function, or trying to match objects with some fish values to teach students object-orientated concepts like polymorphism or inheritance.