Welcome to Dropblox!

In the next few hours, you'll be writing an AI to play a Tetris variant called Dropblox! We'll provide you with tools to test your AI and visualize its performance. After you've had time to develop and test your AI, we'll host a competition to see which AI can perform the best on the same sequence of pieces. We think this contest poses a number of interesting programming challenges, both conceptual and practical.

Getting Started

Download our getting started materials to get the code you'll need to connect to our game server and test out your AI. Inside the getting started folder, you'll find the following files:

1. `bootstrap.sh`: Run this immediately. It will download the python dependencies needed to run the game client on your own computer.
2. `client.py`: The program that communicates with our centralized game server. It will spawn your AI process and forward moves that you generate to our remote server.
3. `config.py`: Specifies the team name and password to use when authing with the game server.
4. `history.py`: A debug server you can run locally to help inspect your games to see how your AI is behaving.
5. `ntris_ai`: The executable program you will be writing to make ntris moves. We've provided a small sample written in Python.

You shouldn't need to modify `client.py` or `history.py` at all! If you find yourself wanting to modify them, please come talk to a Dropboxer first!

Create an Account

The first thing you want to do is go to the main Dropblox site and register a new team with a team name and password. Then fill out `config.py` with your credentials so we can identify you when you connect to the game server.

Connect to the Game Server

Next, run `./bootstrap.sh`, if you haven't already. This will install some Python modules you'll need if you don't already have them. Run `python history.py` to start up a local debug server that will help you visualize your games. Then, run `python client.py test`. This will attempt to

authenticate you with our game server, create a new game for your AI to play, then start invoking your AI to ask it for moves. Since we've provided a stub AI for you, you should be able to point your browser to bit.ly/dropblox#submission_history and see the game being played!

The Rules of Dropblox

Dropblox plays much like Tetris. You are in control of one piece at a time and you may translate and rotate it to place it on the board. After you finish positioning the piece, it will fall as far as possible before locking it place. Any full rows formed by this placement will be cleared from the board.

The main twist of Dropblox is in the pieces generated by the game. Rather than generating pieces with only four squares, Dropblox will generate pieces up to any size. The longer you survive, the bigger the pieces will get!

In addition, we've made a few simplications to the rules of Tetris to make it easier to develop your AI.

1. Pieces do not fall over time. Instead you have `10` seconds to make your move. At the end of `10` seconds, no matter where the piece is, it will fall and lock into place.
2. You can move the active piece in any direction (including upwards)!
3. Dropblox is not forgiving about rotations. Every piece has a center point. If the piece cannot rotate 90 degrees clockwise about that center point without collision, it will not rotate.

To make these statements more precise,

Building Your AI

ntris_ai Program Specification

Tools to Help You