COSC 370 – Artificial Intelligence
Project 3

Purpose: Use any or all of the AI techniques to program an AI for a classic videogame.

Task: For this project you will be coding an AI to run a virtual transportation company in the game OpenTTD. OpenTTD is based on the classic transportation simulator Transport Tycoon Deluxe and in the game you are tasked with creating a profitable transportation empire, basically starting from scratch. OpenTTD features a plug-and-play AI module feature, and that's where your development will be focused. AI's in OpenTTD are written in Squirrel, a scripting language used in a number of videogames, with a similar syntax to C++.

You and your team will be working to create an AI for OpenTTD that will bankrupt all other AIs (including one from the TA). You should feel free to use any AI techniques

Installation: Windows installation is painless - go to OpenTTD.org and click on Download OpenTTD. That installation will include everything that you need for the game. We will be using version 1.2.3.

For Mac and Linux, you will do the same as above (expand the compressed file somewhere easily accessible like your desktop), but you will need to get OpenGFX, OpenSFX, and OpenMSX to provide graphics, sound, and music for your game. Make sure you read through the readme on the OpenTTD download page for more information, but basically you will get the OpenGFX package, expand it, create a directory called "baseset" in your OpenTTD directory, then copy all the files from the OpenGFX directory to the baseset directory in OpenTTD. NOTE: you only really need to download and manually install the OpenGFX package to get the game running. You can get OpenSFX (you will need to enable this in the "Game Options" menu once downloaded) and OpenMSX through the game's "Check Online Content" option on the main menu.

Parameters: To test your AI, use the New Game option, leave all parameters as default except for the following parameters:

Date - 1st Jan 1960
Rivers - Few

For scoring, we will be running the AIs for 10 in-game years and then comparing scores with the highest score winning.

Competition Tournament: On Thursday, April 18th and Tuesday, April 23rd, we will be doing a round-robin tournament pairing teams in our version of the simulator (will be using the same parameters as above). The results of this tournament will factor in to your team's assessment, so I strongly suggest that you arrange for scrimmages to test out your

AIs early and often. You can also test them against some of the provided AIs that are available through the "Check Online Content" option on the main menu.

You are required to work in teams of 4 for this project. Team requests are due by 5pm, Friday, March 8th. You may send in a team of smaller than 4, you will just be assigned random team members to make up the rest of your team. Please designate one person as your "team leader," this is the point person that will be handling any communication with me, the TA, or other teams. They will also be the one responsible for setting up and providing your AI for the competition tournament as noted above. Please also provide a team name. Team names with point person information will be posted in order to facilitate scrimmages.

You will also be asked to provide a numeric grade for each of your teammates. If the numeric grade is less than 80, please provide rationale for your grade assessment. This joint assessment will be 25% of each student's grade and will be kept confidential.

Resources: Various links will be posted to the course page that will be useful to your AI development. Included in that will be the tutorials needed to get a very basic AI up and running, and the TA will also be running a tutorial the week before Spring Break.

Learning Targets: direct application of AI techniques.

DUE: April 14th, 11:59pm via Blackboard. Team evaluations due April 18th by noon via email.