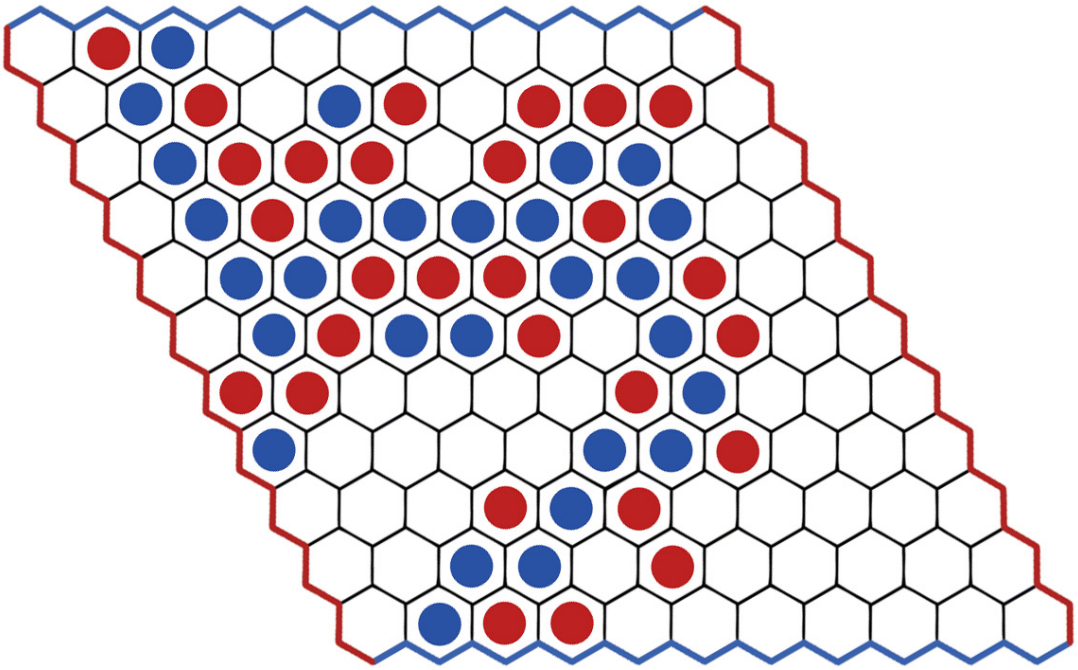
Troika 2017 – Bots

Theme – Hex Board Game

The objective is to code an AI heuristic to play the game of Hex.

Hex has the simplest rules of almost any game: connect your color edges with a path of tokens of your color. Hex is a strategy board game played on a hexagonal grid, theoretically of any size and several possible shapes, but traditionally as an 11×11 rhombus.

Rules



- Each player has an allocated color, conventionally Red and Blue. Players take turns placing a stone of their color on a single cell within the overall playing board.

- The goal for each player is to form a connected path of their own stones linking the opposing sides of the board marked by their colors, before their opponent connects his or her sides in a similar fashion.
- Since the first player to move in Hex has a distinct advantage, the pie rule is generally implemented for fairness. This rule allows the second player to choose whether to switch positions with the first player after the first player makes the first move.

Winning Situation

The first player to complete his or her connection wins the game. The four corner hexagons each belong to both adjacent sides.

Note: The game can never end in a tie, a fact proved by John Nash: the only way a player can prevent an opponent from forming a connecting path is to form their own path. In other words, Hex is a "determined" game.

General Instructions

- There can be a maximum of two members in one team.
- Solutions have to be coded in Python, C++, C and Java. No other language is allowed.
- Team members can be from same/different schools/colleges.
- All entries sent in will become the property of IEEE-DTU society.
- The IEEE-DTU society reserves the right to modify the contest rules without any prior notice.
- One person can be a member of at most one team. If we find the same person in more than one team, all the teams of which he/she is a member will be disqualified from the contest.
- Only one entry is allowed per team.

Constraints

Time Limit per move:

C++, C: 5 seconds
Java: 10 seconds
Python: 15 seconds

on a computer with core i5 2.5 GHz processor and 4GB RAM.

Grounds for Disqualification:

- Teams having identical source code will be disqualified.
- Attempt to hack or improper use of the coding arena will lead to disqualification.
- Teams submitting malicious code will be disqualified.
- Attempt to change the code from the other files than specified will lead to disqualification.
- Teams attempting to access data from other files other than the data allowed will lead to disqualification.

The IEEE, DTU Student Branch reserves the right to disqualify any contestant/team without citing any reason whatsoever. No further inquiries will be entertained on this matter.

Updates:

- Updates regarding the contest rules will be posted on the website/Facebook page.
- The rules are subject to change and no questions will be entertained for the same.
- Details regarding submission of entries will be posted on the site/Facebook page.

Should you have any queries, please feel free to mail us at **contact@ieeedtu.com**, or message us on our Facebook Page **www.facebook.com/ieeedtu**. #HappyTroika! ☺