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Project Proposal: BRISCA GAME

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Description:
        The Brisca project aims to design and develop a game of cards of Italian origin that is played with the Spanish deck called Brisca using artificial intelligence algorithms Depth First and Monte Carlo Tree Search, the first one is used to traverse and search data structures of trees or graphs by exploring as much as possible along each branch before regressing and the second is a heuristic search algorithm for some types of decision processes, especially those employed in the game. In our case, the game of Brisca, which seeks to simulate the real game without making use of any human strategy rule to achieve it, only making use of the rules of the game as such, applying the aforementioned algorithms to try that the program with artificial intelligence can win the game having as adversary to humans or not.

Objectives:
- To design and deliver an artificial intelligence program that can play the game of Brisca using only knowledge of the rules of the game.
- To win 80% or more of the games the artificial intelligent participates in.
- To utilize the depth first LIFO (Last In, First Out) search algorithm for the artificial intelligence process of choosing the next course of action.
- To combine the Monte Carlo method to determine the next action with the highest percentage of winning the game as a calculated heuristic utilizing simulations using the search algorithm proposed above.
- To place constraint on the length of rounds so that actions do not take a long period to be taken.

Scope:
        The scope of this project will be limited to creating an artificial intelligence program that will be able to play the Brisca card game. It is not intended for the program to have a well-defined graphical user interface or to utilize any hardware. The program will not utilize any human-made strategy and is not intended to show the game taking place, but instead demonstrate whether the program wins or loses.

Timeframe:

	Task	Start and End Dates
Phase One	Building Game Logic	April 10 to April 15
Phase Two	Implementing AI Logic	April 17 to April 23
Phase Three	Testing	April 23 to April 30
Phase Four	Revisions	May 01 to May 06

Methods and work breakdown:

- Agile software development.
- Pair Programming.

We use the agile development method to breakdown product development work into small increments that minimize the amount of up-front planning and design. Iterations will shorten time frames of one week. Each iteration involves working on all functions: planning, analysis, design, coding, and testing. An iteration might not add enough functionality, but the goal is to have an available release (with minimal bugs) at the end of each iteration.

Tools to be used:
- Language: Java
- IDE: IntelliJ
- Repository: Aima
- Github
- Git commands for version control