Uno Project

Due 12/9 at 12:05pm

***This is not something you can “cram”. It will require thought.***

You will be creating an AI for the game Uno. Your AI will be competing against other classmates. Your grade is principally off how it performs against an AI Dr. Mood has created and minorly how well it does against other classmates. You may ask me to play your AI against my AI every 4 days, but expect it may take up to 3 business days for me to get to it (I can give you the play by play output if desired).

Specific uno rules for this game: at the end of each round, each player’s points are added to their own count. Your goal is to get the lowest score of all the players. You can assume there will always be 5 players. No stacking bad cards. Can always play a wild. Can only play a draw4 if you do not have the color on top of the deck.

You will download the AI project and inherit from the AI class. TestAI.h/cpp is an example AI that randomly picks a valid card to play Note: the only file I will use from you is the code from the new AI you turn in – in fact, any other changes you make will be ignored. I would suggest looking at the TestAI code, as to how you can use some of the functions.

The function getPlayableCardsInHand returns a vector of the cards you can play this turn. Your ai will then return a number indicating the card index (from the cardsInHand) that you want to play. -1 draws. An invalid play draws.

Your goal is not to understand all the code in the project, only the AI create and how to read the program output.

Be sure to give your AI a unique name in your getName() function.

In the main.cpp file, you can make the output more verbose or less verbose by having verbose as 0 or 1 (starts as 1 [true]) [line 10]. The verbose output shows output from every card play. You can also have it run more than 1 game by modifying the for loop [line 399]. I will be testing your AIs on 1,000+ games.

In Player.h, you can add your AI in the case statement & modify where the players are created in main.cpp [line 391] to get your AI playing,

There is a bug bounty of 1 point for the first person to find an error in the code.

Suggestions:

* Try your AI at more than just 1 spot. Be sure to try them as player 0 and 4 as these spots can often error.
* Your goal is to minimize points; if your AI does not consider points of the cards you will not do well.
* The game forces you to draw if you attempt to make an illegal move. Be sure to not make illegal moves.
* The worst strategy is to draw every round. I suggest you don’t do that one.
* The current (sample) AI, plays randomly. If you turn in something worse than randomness, your grade will not go well.