

Data Design: The game is broken into two main component types, the Player components and the Dealer, and then several smaller components that are used by both main components. All of the Player's methods are public and callable by the Dealer to handle the Player's actions during the phases of a turn and to enforce that those actions are legal moves. By contrast, the majority of the Dealer's methods are private and only the three methods of exchange are callable by the player so they can choose what type of exchange they'd like to make at the beginning of the turn, as indicated by the Dealer.

Int ranges, where indicated (ie: in TraitCard, SpeciesBoard), are inclusive.

The abbreviation "pop" is used for "population" in SpeciesBoard and the Dealer's reducePopSize() method.

Protocol: Ignoring Player discovery procedure (assuming for now that the Dealer is already aware of the Players at the start of the game), the game is initiated by the Dealer's main() method, which will call all the setup methods in both the Dealer and the Players. Dealer setup methods include passCards, chooseStartingPlayer, and the Players' setup actions, after receiving cards from passCards (getter and setter methods are not explicitly required, but encouraged), include wateringHoleDiscard, arrangeBoards, flipCards, and exchange. Dealer will then perform the requested exchange method (one of the public methods beginning with exchange), and initiate feedingTime.

feedingTime will call many private methods in Dealer, and also initiate following the game's rules calls to each Player's feedPlayer, and then pickSpeciesBoard or pickFoodToken, depending on the Traits of SpeciesBoard indicated by the Player in feedPlayer. The order of each Player's actions is indicated by the order chosen by Dealer's chooseStartingPlayer method earlier in the setup phase.

Before the next turn, in which the Dealer and Players will again go through the setup phase and the feeding phases as described, the Dealer will also check the status of the game through the checkEndTurn and checkEndGame methods, and at the end of turn (Dealer's endTurn method), will perform automatic actions like inducedFeedings, reducedPopSize, makeExtinct, and moveFoodTokens.

Ambiguities:

- The requirements analysis doesn't mention the minimum or the maximum number of Players needed to play the game
- In the description of the feeding stage it is unclear whether the Dealer flips only WateringHole TraitCards or all TraitCards in play (including those in the Players' possession). We took this to mean that the Dealer flips the trait cards initially placed face down on the WateringHole
- It is unclear if the SpeciesBoards are fed in linear order by placement or by the order chosen by the Player each turn.

