Server Requirements (RBE - Requirements Back End)

* + **RBE010000:** Platform Requirements
    - **RBE010100:** Must run on standard windows computer
    - **RBE010200:** Must allow easy communication with clients
    - **RBE010300:** Must allow for saving of data locally
  + **RBE020000:** Human Player Requirements
    - **RBE020100:** Must be able to store a list of human players.
    - **RBE020200:** Must be able to create a human player
    - **RBE020300:** Must be able to delete a human player
    - **RBE020400:** Must be able to select a particular player from the list
    - **RBE020500:** Must include facility to prevent double-use of the same player
    - **RBE020600:** Must be able to track player information
      * **RBE020601:** Name
      * **RBE020602:** Current money
      * **RBE020603:** Total debt
      * **RBE020604:** Number of Wins
      * **RBE020605:** Number of Losses
    - **RBE020700:** Human players must be able to borrow money when broke
    - **RBE020800:** Human players must not be allowed to borrow money while at a table
    - **RBE020900:** Human players must not be able to bet more than they have
  + **RBE030000:** Computer Player Requirements
    - **RBE030100:** Must be able to track computer player information
      * **RBE030101:** Name
      * **RBE030102:** Skill level
      * **RBE030103:** Number of Wins
      * **RBE030104:** Number of Losses
      * **RBE030105:** Current money
      * **RBE030106:** Total debt
    - **RBE030200:** Computer players must be able to borrow money when broke
    - **RBE030300:** Computer players must not be allowed to borrow money while at a table
    - **RBE030400:** Computer players must not be allowed to bet more than they have
  + **RBE040000:** Game Object Requirements
    - **RBE040100:** Must track Deck information
      * **RBE040101:** Correct 52 Cards
    - **RBE040200:** Must allow Deck to be shuffled
      * **RBE040201:** Must allow pseudorandom Shuffle
      * **RBE040103:** Must allow non-random shuffle (Sort)
    - **RBE040300:** Must track Card information
      * **RBE040301:** Suit
      * **RBE040302:** Rank
    - **RBE040400:** Must track Table information
      * **RBE040401:** Ante (can be zero or monetary amount)
      * **RBE040402:** Low stake limit (positive amount, non-zero, smaller than high stake limit)
      * **RBE040403:** High stake limit (positive amount, larger than low stake limit)
      * **RBE040404:** Number of players (2 - 7)
      * **RBE040405:** Position of players at table
      * **RBE040406:** Position of dealer at table
    - **RBE040500:** Must track dealer information
      * **RBE040501**: Must track game play state
      * **RBE040502:** Must track deck state of current game
      * **RBE040503:** Dealer must know own location at table
    - **RBE040600:** Player hand
      * **RBE040601:** Each of up to seven cards
      * **RBE040602:** Face up/down state
  + **RBE050000:** Game State Requirements
    - **RBE050100:** Uniquely track games
    - **RBE050200:** Log game history
    - **RBE050300:** Keep track of players for each game
      * **RBE050301:** Allow human players to replace computer players between hands
      * **RBE050302:** Require approval from existing human players
    - **RBE050400:** Keep track of game objects for each game
  + **RBE060000:** Game Operation Requirements
    - **RBE060100:** Shuffle deck before dealing
    - **RBE060200:** Ante payment (for nonzero ante)
    - **RBE060300:** Burn first card of hand
    - **RBE060400:** Deal face down
      * **RBE060401:** Card 1 (Round 1 Deal)
      * **RBE060402:** Card 2 (Round 1 Deal)
      * **RBE060403:** Card 7 (Round 5 Deal)
    - **RBE060500:** Deal face up
      * **RBE060501:** Card 3 (Round 1 Deal)
      * **RBE060502:** Card 4 (Round 2 Deal)
      * **RBE060503:** Card 5 (Round 3 Deal)
      * **RBE060504:** Card 6 (Round 4 Deal)
    - **RBE060600:** Determine first player to take action in a Round
      * **RBE060601:** Round 1 - Lowest up card
      * **RBE060602:** Round 2 - Highest exposed hand (up cards)
      * **RBE060603:** Round 3 - Highest exposed hand (up cards)
      * **RBE060604:** Round 4 - Highest exposed hand (up cards)
      * **RBE060605:** Round 5 - Highest exposed hand (up cards)
      * **RBE060606:** Showdown with no bets in Round 5: high showing hand
      * **RBE060607:** Showdown with bets in Round 5: Last to establish bet or raise
      * **RBE060608:** Ties settled by closest to dealer in deal order
    - **RBE060700:** Process player choices per player in Round 1
      * **RBE060701:** Forced minimum bet: low limit stake
      * **RBE060702:** Raise can be any amount
      * **RBE060703:** Player can call by matching current bet amount
      * **RBE060704:** Player can fold, removing themselves from the hand
    - **RBE060800:** Process player choices per player in Round 2
      * **RBE060801:** Bet is set at low limit stake
      * **RBE060802:** Raise is not allowed unless a player has a face up pair
      * **RBE060803:** If raise is allowed, it must be in multiples of low or high stake
      * **RBE060804:** If raises are used and a player has used a multiple of the high stake, remaining raises must be multiples of high stake as well.
      * **RBE060805:** Player can call by matching current bet amount
      * **RBE060806:** Player can fold, removing themselves from the hand
    - **RBE060900:** Process player choices per player in Round 3
      * **RBE060901:** Bet is set at high limit stake
      * **RBE060902:** Raise is not allowed
      * **RBE060903:** Player can call by matching current bet amount
      * **RBE060904:** Player can fold, removing themselves from the hand
    - **RBE061000:** Process player choices per player in Round 4
      * **RBE061001:** Raise can be any amount
      * **RBE061002:** Player can call by matching current bet amount
      * **RBE061003:** Player can fold, removing themselves from the hand
    - **RBE061100:** Process player choices per player in Round 5
      * **RBE061101:** Raise can be any amount
      * **RBE061102:** Player can call by matching current bet amount
      * **RBE061103:** Player can fold, removing themselves from the hand
    - **RBE061200:** Process player choices per player in "Showdown"
      * **RBE061201:** Show cards
      * **RBE061202:** Muck (toss cards into center pile)
    - **RBE061300:** Find best hand from 1-7 cards
      * **RBE061301:** Royal flush
        + Same suit Ace, King, Queen, Jack, and 10 (high 5 ranks)
        + Requires 5 cards
      * **RBE061302:** Straight flush
        + 5 same suit consecutive ranked cards
        + Requires 5 cards
      * **RBE061303:** 4 of a kind
        + 4 cards of matching rank
        + Sorted by matched card rank, then solo card rank
        + Requires 4 cards
      * **RBE061304:** Full house
        + 3 cards of matching rank and 2 cards of another matching rank
        + Sorted by large matched rank, then low matched rank
        + Requires 5 cards
      * **RBE061305:** Flush
        + 5 cards of same suit, not in sequence
        + Sorted by high card rank
        + Requires 5 cards
      * **RBE061306:** Straight
        + 5 consecutive ranked cards (not suit matched)
        + Sorted by high rank
        + Requires 5 cards
      * **RBE061307:** 3 of a kind
        + 3 cards of matching rank
        + Sorted by matched card rank, solo cards high rank
        + Requires 4 cards
      * **RBE061308:** 2 Pair
        + 2 cards of matching rank and 2 cards of another matching rank
        + Sorted by high matched rank, low matched rank, solo card rank
        + Requires 4 cards
      * **RBE061309:** 1 Pair
        + 2 cards of matching rank
        + Sorted by high matched rank, high solo card rank
        + Requires 2 cards
      * **RBE061310:** High card
        + Sorted by high solo rank
        + Requires 1 card
    - **RBE061400:** Compare player scores to find winner
      * **RBE061401:** Winning ties are resolved by splitting the pot
    - **RBE061500:** Process the pot
      * **RBE061501:** Add to correct player/s accounts