Pseudocode for Double-7

A. **{SEQUENCE A - INPUT}** User determines number players for current game
   1. {IF-THEN} Code determines how many hands to deal (2, 3, 4, 5, or 6)
B. **{SEQUENCE B - Function to shuffle cards}** Cards are shuffled
C. **{SEQUENCE C - Function to deal cards}** Cards dealt one at a time to each player
   {IF-THEN}
   1. If 2 players, 9 cards per player are dealt.
   2. If 3 players, 12 cards per player are dealt
   3. If 4 players, 9 cards per player are dealt.
   4. If 5 players, 7 cards per player are dealt.
   5. If 6 players, 6 cards per player are dealt.
   6. **{SEQUENCE D - Let remaining deck equal Boneyard}** Additional cards (if any) are placed in the Boneyard
D. **{SEQUENCE E Function to compare sides of cards in each player's hand}** Code determines who has the highest double
   1. **{IF-THEN/REPEAT UNTIL - If no doubles, beginning with Player 1, select card from Boneyard until a double is chosen}** If there are no doubles in either player's hand, beginning with player 1, cards are selected from Boneyard alternately until a double is identified. Once a double is selected, this becomes the first play. *(Need method to show how additional cards are added in either player's hand)*
   2. **{IF-THEN - If Player 1 has highest double, Player 1 plays (that double) first; If Player 2 plays first, Player 3 plays next, and so on}** Which ever player follows the player who played the first double makes the next play
   3. **{SEQUENCE F - Function to find card (number) in next player's hand that matches number of first play}** The next card played MUST match the number of the first card played (Write code to ensure a valid match)
      a. **{REPEAT UNTIL}** Code filters player's hand to find a card that matches first card played
      b. **{IF-THEN-ELSE}** If a card exists that will cause the total of the edges to equal a multiple of 5, THIS card is played *(for computer; for players, optional cards are highlighted inside player's hand)*
   4. **{IF-THEN-ELSE}** Cards matched with doubles are placed sideways (to form a "T")
   5. **{IF-THEN-ELSE}** Doubles are ALWAYS placed sideways so both sides of the card can be counted
E. **{SEQUENCE G - Function to determine if outer edges of cards equal a multiple of 5; If YES, add total to player's score}** To score, code adds the total amounts of the numbers on the outer edges of the cards played
   1. **{IF-THEN}** For doubles, both numbers are counted (Card 7:7 = 14); (Ex. If the (7:1) card is matched with the (7:7) card, the edges have a total of 15 (14 + 1))
   2. **{IF-THEN-ELSE}** If a play results in a total that is a multiple of 5, that player has the total added to their score. If a play does not result in a total that is a multiple of 5, NO score is awarded. Play then switches to next player.
   3. **{IF-THEN-ELSE/REPEAT UNTIL}** If a play cannot be made, that player MUST choose a card from the Boneyard (if it exists). If no Boneyard exists, "PLAYER BLOCKED" is displayed on the screen, and play moves to the next player
   4. **{IF-THEN-ELSE - If a card matches the number of the FIRST double played, it can be placed on one the UNUSED sides of this double}** Plays can be made on all four sides of the FIRST double only. NO cards can be placed on the sides of other doubles that are played during the course of the hand

5. *For each player's turn, optional cards that can be played are highlighted inside player's hand, AND place where each card can be played is highlighted on the screen*
6. **{WHILE - If ALL players still have cards, play continues until one player has no cards}** Play continues in clockwise order (player, 1, player 2, etc) until one player plays their last card
7. **{IF-THEN}** Once last card is played, ALL remaining cards are awarded to player that played last card. Numbers on the cards are totaled, and points (nearest multiple of 5) is added to THAT player's score.

F. **{SEQUENCE H - Function to place all cards back in deck}** Game resumes
   1. **{SEQUENCE B}** Cards reshuffled
   2. **{SEQUENCE C}** New hands dealt to each player

G. **{IF-THEN - Function to display message: "Player __ plays first, and can play ANY card to begin"}** Player who played last, plays first to begin the next hand. *This player can play ANY card from his/her hand*
   1. **{IF-THEN-ELSE}** If the total from the numbers on the card played equals a multiple of 5, points are awarded.
   2. **{IF-THEN}** Next player can play ANY card that matches at least one number on the card from the previous play.
   3. **{WHILE - If ALL players still have cards, play continues until one player has no cards}** Play continues until one play plays their last card.

H. **{IF-THEN-ELSE}** Game ends when one player reaches 150 points.