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1 import java.util.Scanner;
2
3 /**
4  * This class holds the user interaction functionality of the card game and
5  * contains the main method to start the game. It extends Board class
6  * in order to access BOARD listArray and protected methods.
7  */
8
9 public class ElevensGame extends Board
10 {
11     private int selectCard() // Allows user to select card slot with appropriate validation in place
12     {
13         Scanner scan = new Scanner(System.in);
14         ArrayList<Integer> SELECTION = checkPossibleMoves(BOARD);
15         int selection = 0;
16
17         System.out.print("Please Enter a Slot Number for any Card (or any letter key for a hint): ");
18         boolean isNum=false;
19         while(!isNum) { // while loop validation only accepting when isNum is set to true
20             if(scan.hasNextInt()) {
21                 selection = scan.nextInt();
22                 if(selection >= 1 && selection <= getBoardLength())
23                     isNum=true;
24             } else {
25                 System.out.println("Invalid Entry. Not within range of slots in Board.");
26                 System.out.print("\nPlease Enter a slot number for any card (or any letter key for
a hint): ");
27             }
28         }
29         else {
30             if(SELECTION.getLength() < 3) {
31                 System.out.println("Hint: " + getBoardEntry(SELECTION.getEntry(1)) + " & " +
getBoardEntry(SELECTION.getEntry(2)));
32             }
33             else {
34                 System.out.println("Hint: " + getBoardEntry(SELECTION.getEntry(1)) + " & " +
getBoardEntry(SELECTION.getEntry(2)) + " & " +
getBoardEntry(SELECTION.getEntry(3)));
35             }
36             System.out.print("\nPlease Enter a slot number for any card: ");
37             scan.next();
38         }
39     }
40     isNum = false; //resetting isNum to false for next use
41
42     return switch (selection) {
43         case 2 -> 2;
44         case 3 -> 3;
45         case 4 -> 4;
46         case 5 -> 5;
47         case 6 -> 6;
48         case 7 -> 7;
49         case 8 -> 8;
50         case 9 -> 9;
51         default -> 1;
52     };
53 }
54
55 private void demonstrationMode() // allows user to increment through a simulated game of Elevens
step by step
56 {
57     Scanner scan = new Scanner(System.in);
58     while(getBoardLength() > 0) {
59         String enterkey = "\nPress 'Enter' key to increment through Demonstration Mode.";
60         System.out.print(enterkey);
61         enterkey = scan.nextLine();
62         System.out.print(enterkey);
63         if(enterkey.equals("")) {
64             displayBoard(BOARD);
65             ArrayList<Integer> SELECTION = checkPossibleMoves(BOARD);
66             if (checkPossibleMoves(BOARD).isEmpty()) {
67                 System.out.println("----STALEMATE----\n");
68                 menu();
69             } else if (checkPossibleMoves(BOARD).getLength() < 3) {
70                 if (getBoardEntry(SELECTION.getEntry(1)).equalEleven(getBoardEntry(SELECTION.
getEntry(2))) == 1) {
71                     System.out.println("----Removed: "+getBoardEntry(SELECTION.getEntry(1))+& "

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74         +getBoardEntry(SELECTION.getEntry(2))+ "---");
75         replaceCards(SELECTION.getEntry(1), SELECTION.getEntry(2));
76     }
77     } else {
78         if (getBoardEntry(SELECTION.getEntry(1)).equalJQK(getBoardEntry(SELECTION.
79 getEntry(2)),
80         getBoardEntry(SELECTION.getEntry(3))) == 1) {
81             System.out.println("----Removed: " + getBoardEntry(SELECTION.getEntry(1)) +
82 " & "
83         + getBoardEntry(SELECTION.getEntry(2))
84         + " & " + getBoardEntry(SELECTION.getEntry(3)) + "---");
85         replaceCards(SELECTION.getEntry(1), SELECTION.getEntry(2), SELECTION.getEntry
86 (3));
87     }
88     }
89 }
90 private void menu() // Elevens menu functionality
91 {
92     Scanner scan = new Scanner(System.in);
93     System.out.print("Enter 'r' to replay your moves, 'p' to play again or any other key to exit
94 : ");
95     String selection = scan.next();
96     if(selection.equals("r") || selection.equals("R")) {
97         replaySteps();
98         menu();
99     }
100     else if(selection.equals("p") || selection.equals("P")) {
101         newBoard();
102         game();
103     }
104     else {
105         System.exit(0);
106     }
107 }
108 public void game() // Elevens main game functionality
109 {
110     Scanner scan = new Scanner(System.in);
111     System.out.println("\n-----Welcome to Elevens
112 -----");
113     System.out.println("Rules");
114     System.out.println("Select two cards that add to eleven or a Jack, Queen, King combination."
115 );
116     System.out.println("If you can remove all the cards from the board and the deck you Win!\n");
117     System.out.print("Enter 'p' to play or 'd' for demonstration mode: ");
118     String selection = scan.next();
119     if(selection.equals("d") || selection.equals("D")) {
120         demonstrationMode();
121     }
122     int first, second, third;
123     while(getBoardLength() > 0) {
124         displayBoard(BOARD);
125         if(checkPossibleMoves(BOARD).isEmpty()) {
126             System.out.println("----STALEMATE----\n");
127             menu();
128         }
129         if (getBoardEntry(first = selectCard()).getRankValue() <= 10) {
130             System.out.println("\nPlease select a second card to add to Eleven");
131             if (getBoardEntry(first).equalEleven(getBoardEntry(second = selectCard()))) == 1) {
132                 System.out.println("\n----Removed: "+getBoardEntry(first) + " & " + getBoardEntry
133 (second) + "---");
134                 replaceCards(first, second);
135             } else {
136                 System.out.println("\n" + getBoardEntry(first) + " & " + getBoardEntry(second) +
137 " selected.");
138                 System.out.println("----They don't add to Eleven. Please try again----");
139             }
140         } else if (getBoardEntry(first).getRankValue() >= 11) {
141             System.out.println("\nPlease select two more different picture cards.");
142             if (getBoardEntry(first).equalJQK(getBoardEntry(second = selectCard()), getBoardEntry
143 (third = selectCard()))) == 1) {
144                 System.out.println("\n----Removed: "+getBoardEntry(first) + ", " + getBoardEntry(

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140 second) +
141         ", " + getBoardEntry(third) + "----");
142         replaceCards(first, second, third);
143     } else {
144         System.out.println("\n" + getBoardEntry(first) + ", " + getBoardEntry(second) +
145         ", " +
146         getBoardEntry(third) + " selected.");
147         System.out.println("----Not a Jack, Queen and King. Please try again----");
148     }
149 }
150 System.out.println("\n----Congratulations! You've Won!----\n");
151 menu();
152 }
153
154 public static void main(String[] args) // main to instantiate a new game of Elevens
155 {
156     ElevensGame elevens = new ElevensGame();
157     elevens.game();
158 }
159 }
160
```