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1  /*
2  * Projecto de Programação
3  * Implementação em C do jogo de casino Blackjack
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7  */
8
9  #include <stdlib.h>
10 #include <stdio.h>
11 #include <string.h>
12 #include <stdbool.h>
13 #include <SDL2/SDL.h>
14 #include <SDL2/SDL_ttf.h>
15 #include <SDL2/SDL_image.h>
16 #include <time.h>
17 #include "main.h"
18 #include "logic.h"
19 #include "file.h"
20 #include "sdl.h"
21 #include "ea.h"
22 #include "error.h"
23
24 int main(int argc, char *argv[])
25 {
26     SDL_Window *window = NULL;
27     SDL_Renderer *renderer = NULL;
28     TTF_Font *serif = NULL;
29     SDL_Surface *cards[MAX_DECK_SIZE+1] = {0};
30     SDL_Surface *imgs[2] = {0};
31     SDL_Event event;
32     int delay = 300;
33     int ea_delay = 1500;
34     bool quit = false;
35     bool add_player_key = false;
36     AddPlayerError add_player_error = OK;
37
38     if (argc != 3) {
39         fprintf(stderr, "Erro: número inválido de argumentos.\n");
40         puts("Utilização:");
41         printf("%s <ficheiro de config. do jogo> <ficheiro de config. das EAs>\n", argv[0]);
42         exit(EXIT_FAILURE);
43     }
44
45     // Ler ficheiro de configuração dos jogadores
46     Config *config = read_config(argv[1]);
47
48     // Ler ficheiro de estratégia das EAs
49     Strategy *strategy = read_strategy(argv[2]);
50
51     // Declarar a lista de jogadores
52     List *players = (List *) ecalloc((size_t) 1, sizeof(List));
53     // enchê-la com dados do ficheiro de configuração
54     const int num_decks = init_game(config, players);
55
56     // Declarar a lista de jogadores velhos
57     List *old_players = (List *) ecalloc((size_t) 1, sizeof(List));
58
59     // Inicializar o megabaralho
60     // é uma struct que contém a lista das cartas em si
61     int cards_left = 0;
62     List *deck = (List *) ecalloc((size_t) 1, sizeof(List));
63     Megadeck megadeck_real = {cards_left, num_decks, deck, 0};
64     Megadeck *megadeck = &megadeck_real;
65     megadeck->cards_left = create_megadeck(megadeck);
66
67     // Inicializar a casa
68     Player *house = (Player *) ecalloc((size_t) 1, sizeof(Player));
69     // Inicializar um novo jogo
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70     srand(time(NULL));
71     new_game(players, house, megadeck);
72
73     // loads the cards images
74     LoadCards(cards);
75
76     // initialize graphics
77     InitEverything(WIDTH_WINDOW, HEIGHT_WINDOW, &serif, imgs, &window, &render
er);
78
79     List *aux = find_active_player(players);
80     bool ea = false;
81     while (!quit) {
82         // while there's events to handle
83         while (SDL_PollEvent(&event)) {
84             if (event.type == SDL_QUIT) {
85                 // user killed the window
86                 quit = true;
87             }
88             else if (event.type == SDL_KEYDOWN) {
89                 switch (event.key.keysym.sym) {
90                     case SDLK_q:
91                         if (find_active_player(players) == NULL ||
92                             find_ingame_player(players) == NULL)
93                             quit = true;
94                         break;
95
96                     case SDLK_n:
97                         new_game(players, house, megadeck);
98                         break;
99
100                    case SDLK_r:
101                        if (find_active_human_player(players) != NULL)
102                            surrender(players, house, megadeck);
103                        break;
104
105                    case SDLK_d:
106                        if (find_active_human_player(players) != NULL)
107                            double_bet(players, house, megadeck);
108                        break;
109
110                    case SDLK_b:
111                        bet(players);
112                        break;
113
114                    case SDLK_a:
115                        if (find_active_player(players) == NULL)
116                            // sinalizar para mostrar as popups
117                            add_player_key = true;
118                        break;
119
120                    case SDLK_s:
121                        if (find_active_human_player(players) != NULL)
122                            stand(players, house, megadeck);
123                        break;
124
125                    case SDLK_h:
126                        if (find_active_human_player(players) != NULL)
127                            player_hit(players, house, megadeck);
128                        break;
129
130                    case SDLK_UP:
131                        ea_delay+=100;
132                        break;
133
134                    case SDLK_DOWN:
135                        if (ea_delay > 100)
136                            ea_delay-=100;
137                        break;
138
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139             default:
140                 break;
141         }
142     }
143 }
144
145 if (add_player_key)
146     show_add_player_message(window);
147 // render game table
148 RenderTable(players, serif, imgs, renderer);
149 // render house cards
150 RenderHouseCards(house, cards, serif, renderer);
151 // render player cards
152 RenderPlayerCards(players, cards, renderer);
153 // render colorful status rects above player
154 render_status(players, serif, renderer);
155 // render in the screen all changes above
156 SDL_RenderPresent(renderer);
157 // add a delay
158 SDL_Delay(delay);
159
160 aux = find_active_player(players);
161 ea = false;
162 if (aux != NULL)
163     if (((Player *) aux->payload)->type == EA)
164         ea = true;
165 // Se for a vez dum EA, decidir a sua jogada, com delay
166 if (ea) {
167     ea_make_decision(players, house, megadeck, strategy);
168     SDL_Delay(ea_delay);
169 }
170
171 else if (add_player_key) {
172     add_player_error = add_player(players, old_players, megadeck, wind
ow);
173
174     if (add_player_error != OK)
175         // mostrar popup de erro se este existir
176         show_add_player_error_message(window, add_player_error);
177     add_player_key = false;
178 }
179
180 write_stats(players, house, old_players);
181
182 destroy_players_list(players);
183 destroy_players_list(old_players);
184 destroy_stack(&house->cards);
185 free(house);
186 destroy_list(megadeck->deck);
187 destroy_matrix(strategy->hard, HARD_LINES);
188 destroy_matrix(strategy->soft, SOFT_LINES);
189 free(strategy);
190
191 UnLoadCards(cards);
192 TTF_CloseFont(serif);
193 SDL_FreeSurface(imgs[0]);
194 SDL_FreeSurface(imgs[1]);
195 SDL_DestroyRenderer(renderer);
196 SDL_DestroyWindow(window);
197 SDL_Quit();
198
199 return EXIT_SUCCESS;
200 }

```