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DESIGN DOCUMENT
COMPONENT: class Viewer

A user interface for managing registrations for a local youth soccer association. See program specification for details.

Public method:
void run()

Prompts the user to interact with the system and accepts user commands until the user decides to quit.

Private methods:
void display_main()

Displays the main view to the user, which includes options for adding players, searching for players, and other management tasks.

bool display_search()

Displays the search view to the user, allowing them to browse through players produced by a search, and edit player information.

void execute_command(char command, bool& done)

Takes a user command and executes actions such as adding players, searching for players, and displaying statistics based on the input. It also displays an error message if an error occurs during the execution of the command.

void execute_search_command(char command, bool& done)

Takes a user command in the search view and executes actions such as navigating between players and editing player information. It also displays an error message if an error occurs during the execution of the command.

void display_statistics()

Displays the total number of players, the number who have paid, and the number who haven't paid, in total and for each category.

void display_add()

Allows the user to add a player by providing the player's name, year of birth, and registration status. The category is automatically computed.

bool search()

Allows the user to search for players based on any combination of last name, first name, year of birth, registration status, and category.

void display_edit()

Allows the user to edit the player's information, such as name, year of birth, and registration status, and automatically updates the category if needed.

Implementation note: Uses a Buffer object to store player data and a PlayerMap object to manage player search results. Delegates the displaying of the data and the execution of the commands to the Buffer and PlayerMap objects.

Collaborators: Buffer, Player.

COMPONENT: class Buffer

A buffer for managing player data in the local youth soccer association. Stores player information and provides methods for adding, editing, and searching players. See program specification for details.

Public methods:

bool open()

Opens the main file, a specified as a string in the private part of Buffer ("player_data.txt"), and reads in first the season year and then each player. If the function is unable to open the file it will return false, which will in turn end the program.

void add(const string& first_name, const string& last_name, int year_of_birth, const char& registration_status)

Adds a new player to the player_map_. Initializing the key to the player's last name followed by their first name.

void edit(string& last_name, const string& first_name, int year_of_birth, const char& registration_status, int count)

Edits a player's information in search_map_.

bool search(const string& first_name, const string& last_name, int year_of_birth, const char registration_status, const string& category, const string keyword)
Searches for players in the player_map_ on the given search criteria. If no player is found the function returns false.

bool write(string file, PlayerMap pm)
Writes out to a file. If the output stream cannot be opened it returns false.

bool print_main(string file_name)
Prints the entirety of the player_map_ to a file. If the output stream cannot be opened it returns false.

void clear_maps()
Clears both the search_map_ and player_map_.

PlayerMap search_map()
PlayerMap player_map()
string season_year()
Returns the associated variable located in the private part of the Buffer class.

void set_season_year(const string& season_year)
Sets the season year to a value in the form of a string.

Implementation note: Stores each player's data as a Player object in a container such as a vector or a map.

Collaborators: Player.

COMPONENT: struct Player
Stores the players first name, last name, year of birth, category, and whether or not they paid.