

Instructions

Assignment overview

Congratulations on accepting your new position as lead developer and database admin for the 2211 World Cup. As the resident C expert, you have been assigned the task of designing and implementing a database of all teams (nations) which will be used throughout the World Cup.

Purpose

This assignment will ask you to apply the following concepts from class:

- Basic programming concepts
- Strings
- Structures
- Variable scope

Design

To accomplish this task, each team will be stored as a structure with the following attributes:

- Team code (eg. 0, 1, 2, 3, 4, etc.)
 - Each team code must be unique. Only integers 0-31 are acceptable
- Team name (eg. "Australia", "Cameroon", "Canada", "Argentina", "Belgium", etc.)
 - Only team names up to 25 characters in length are acceptable (including the null character - So think of this as 24+1). Each team name must be unique
- Group seeding (eg. "A1", "B3", "F2", etc.)
 - Only groups A-H and seeds 1-4 are acceptable. (So only A1, A2, A3, A4, B1, B2, ..., H3, H4). Each group seeding must be unique
- Primary kit (uniform) colours (eg. "Red", "Orange", "Yellow", "Green", "Blue", "Indigo", and "Violet")
 - Only the values 'R', 'O', 'Y', 'G', 'B', 'I', 'V' are acceptable.

Implementation

Your program should continuously prompt the user for one of five possible commands:

1. Insert a new team (using command **i**)
 - Prompt the user for the team code
 - Assume the user will enter one integer
 - This must be unique in your database and cannot conflict with an existing team code. If the number is less than 0 or greater than 31, or if there is a conflict with an existing code, or if the database is full, tell the user the error. The user can try again or you can return the user to the main prompt
 - Prompt the user for the name of the team
 - Assume the user will enter a string of characters of any length
 - If the team name is longer than the acceptable length, you should accept as many characters as you can and ignore any additional characters. If there is any other issue, tell the user the error. The user can try again or you can return the user to the main prompt
 - Prompt the user for the group seeding of the team
 - Assume the user will enter two characters: a letter representing the group, and a number representing the seeding
 - If the letter is not A-H or if the number is not 1-4, tell the user the error. The user can try again or you can return the user to the main prompt
 - Prompt the user for the area of the primary kit (uniform) colour
 - Assume the user will enter one character value
 - If the character is not in the list 'R', 'O', 'Y', 'G', 'B', 'I', 'V', tell the user the error. The user can try again or you can return the user to the main prompt
2. Search for an team in the database and print it out (using command **s**)
 - Prompt the user for the team code
 - If the team code is found, print out all the values for this team only (see the print command below for more details)
 - If the team code is not found, tell the user the error. The user can try again or you can return the user to the main prompt
3. Update a team in the database (using command **u**)
 - Prompt the user for the team code
 - If the team code is found, prompt the user to update all the values for the team (see the insert command above for details)
 - If the team code is not found, tell the user the error. The user can try again or you can return the user to the main prompt
4. Print the entire list of teams (using command **p**)
 - Print out a table listing all the teams in your database with all the attributes:
 - Team Code
 - Team Name
 - Group Seeding
 - Primary Kit Colour
5. Quit the program (using command **q**)
 - Yes, all data is lost when quitting your program. You do not need to maintain the data across multiple runs.

Other implementation notes

- You are welcome to create any number of helper functions you wish.
- You are welcome to use any C libraries you wish but you should be able to get by with `stdio.h`
- Note that there is no delete function. This is not an easy task when using an array
- You are welcome to use whatever wording you would like for your prompts. It does not have to precisely match the example below.

Sample output

```
$ ./worldCupDB
*****
* 2211 World Cup *
*****

Enter operation code: p
Team Code   Team Name           Group Seeding           Primary Kit Colour

Enter operation code: i
    Enter team code: 0
    Enter team name: Canada
    Enter group seeding: F2
    Enter the kit colour: R

Enter operation code: p
Team Code   Team Name           Group Seeding           Primary Kit Colour
0           Canada           F2                     Red

Enter operation code: i
    Enter team code: 1
    Enter team name: Australia
    Enter group seeding: D2
    Enter the kit colour: Y

Enter operation code: i
    Enter team code: 3
    Enter team name: Cameroon
    Enter group seeding: G4
    Enter the kit colour: G

Enter operation code: i
    Enter team code: 3
Team already exists.

Enter operation code: p
Team Code   Team Name           Group Seeding           Primary Kit Colour
0           Canada           F2                     Red
1           Australia       D2                     Yellow
3           Cameroon       G4                     Green

Enter operation code: s
    Enter team code: 1
Team Code   Team Name           Group Seeding           Primary Kit Colour
1           Australia       D2                     Yellow

Enter operation code: u
    Enter team code: 1
    Enter team name: Australia
    Enter group seeding: D2
    Enter the kit colour: B

Enter operation code: p
Team Code   Team Name           Group Seeding           Primary Kit Colour
0           Canada           F2                     Red
1           Australia       D2                     Blue
3           Cameroon       G4                     Green

Enter operation code: q
$
```