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PHP Developer Test

Scenario

There is a Coin Toss competition being organised.

There are a total of 51 players in the competition. They can be identified as player1, player2, player3 etc

Each player needs to be assigned to one of the 8 teams (Red, Yellow, Green, Blue, Orange, Pink, Black and White).

In the competition there will be 6 rounds of matches in each round there needs to be as many matches scheduled as possible.

Each match is contested by 2 players, in a match each player is assigned heads or tails (either side of a coin) and a coin is tossed to determine the winner.

The restrictions on a match are

- Each player can only play one match per round
- No matched pair can be from the same team
- No matched pair can be a repeat of the previous round's fixture
- The process for creating matches should be as random as possible
- It should be possible for any two players in different teams to have the possibility of being paired

Objectives

To develop a PHP script which will schedule the maximum amount of matches for all rounds in accordance with the match restrictions. It should present the fixtures for all rounds on screen.

It should also simulate the outcome of the matches and summarising the results for each round.

The solution should contain the initial allocation of players to teams (this should not be hard coded). This allocation should be random and not require the split of players to be even.

Any solution should not rely on `nice` numbers and should allow for the number of players, teams and rounds to be configured.

The code will need to execute without any errors and be able to be deployed without the need for external libraries or data sources. (It is not required to use a relational database). Code should be well commented.

We would also like to see some notes on the problems you faced and the logic implemented to solve the problem.

Clues

We are interested in the thought process and the logic used to tackle the problem not the presentation of the results.

The key is to have a solution that works with different number combinations and still allows for as many fixtures as possible and a random matching of fixtures.