SF Web Development Workshop

2022

Assignment 2 — **JavaScript**

📅 Due date: June 10th, 11:59 PM 📅

Ludo Game Website

INTRODUCTION

We've all played Ludo with our friends and family at some point, whether it was the classic Ludo on board back in the good old days or jumping on the online Ludo bandwagon in the early lockdown phase.

In this assignment, we will try to build a functioning local Ludo game on our website. Some of the features and rules of the game would be simplified or removed for implementation purposes, but you can go on and work upon your website to build the original game with all rules, after completing with the assignment.

Now, if you belong to one of those extremely rare species who've never played Ludo and managed to brave the lockdown without being forced into a round of online Ludo, then you have our respects and also nothing to worry. The rules are elaborately specified to explain what all you have to implement.

INSTRUCTIONS FOR IMPLEMENTATION

Refer to the below linked pdf for detailed instructions of exactly what all to implement in your website:
LUDO Website Instructions

GUIDELINES:

1. Start with making the basic board layout.
2. Then proceed to add functionalities one by one, by first formulating a logic for them and then looking up on how to implement it using JavaScript.
3. Make sure you're covering all the cases while building upon the logic.
4. It is always advisable to keep your code modular, i.e., break a single functionality into different small functionalities. You should try to create small functions like changing some token's position by 1, checking the presence of opposing team's token at a particular position etc. (These aren't compulsorily required. Your functions may differ depending on your implementation) Then combine all these small functions to create a bigger function effectively performing a complex functionality using the simple functionalities.
5. After you've successfully incorporated all the functionalities in your website, add some CSS and animations to make your website and the functionalities more appealing.

ADDITIONAL FUNCTIONALITIES:

Some of the additional functionalities you can add to your game website are:

1. Adding more players and giving user the option to choose players from 2-4 before starting the game.
2. Adding a reset button to reset the game.
3. Allowing the user to decide the size of the board. You can give the user a range of numbers to choose from for the size and use that number as the number of squares in each side of the board. (You can try to give option of a rectangular board too if you wish).
4. Adding safe squares where the opposing team's tokens cannot be captured and both teams' tokens coexist.
5. Keeping a spiral path for tokens instead of circular. Refer to this. (End is where the end arrow points in the picture.)
6. The rule of three 6's- if a 6 appears at first throw, the same player gets another chance and rolls again. If a 6 appears again on second throw, the same player again gets another chance and rolls. However, if 6 appears for the third time, the player isn't allowed to move and the chance passes to the next player.

Try to implement at least 2 of the above-mentioned functionalities into your website.
After that, you may try adding all or some of your own choice.

Important Instructions:

- We cannot emphasize and advise enough against COPYING exact codes from any sources.
- For this assignment, you are free to use bootstrap, material-ui or any other templates to assist you with the styling. You may, however, do it use only CSS too. It's all up to you.
- Although we've tried our best to clearly define and elaborate on the problem statement and its implementation, it may be possible that it might not be very comprehensible to some. So, don't hesitate in asking doubts, even if it is in understanding the task or its implementation or any functionality.

Resources:

- Here's a wonderful resource to learn JavaScript from scratch. Please note, binge-watching a tutorial playlist is of no use. Code alongside (Split screen or secondary screen helps a lot) or after watching a part of the video.
- We would appreciate you trying to figure out the implementation in html, css n js on your own and coming up with your own solutions.

  But, if you're stuck or cannot figure out how to proceed, read the following tutorial to understand how board games are designed implemented for the web. How the components and classes are planned so that they can be easily controlled and the behavior of different components defined using JavaScript:

  - Creating a Checkers board game with JavaScript

  Try to use the approach in the above tutorial to create the Ludo game and its functionalities.
- If you feel you still haven't got the confidence of building the Ludo game by your own, go through the best advanced JavaScript course on the internet. You may code the first 5-10 videos and after you get the confidence, you may proceed with the assignment. If you want, you can complete the whole 30 Challenges in the entirety of your summer breaks, they are really fun!