Project Based Learning @ROOT - IT

Understanding Game Rules and Guidelines

1. **Game Title**

2. **Maximum Number of Players: 1, 2 or more.**

3. **Minimum Number of Players Required: 1, 2 or more.**

4. **Can we play against AI: Yes/No**

5. **If yes for AI, how complex is it to code it: Simple Random Number, Based on Pre-defined Game Logic, Mini Max Algorithm, or Machine Learning Approach.**

6. **If yes for AI, is it possible to provide an option to choose the difficulty level? Can you code it using the same approach chosen above or does it require a more complex approach, in comparison to a single difficulty level?**

7. **Can we play it as both a single player against Simple AI and a multiplayer, against another human?**

8. **If Multiplayer, is it possible to play from a single system or does it mandate (Concurrent Input like RPS or Hiding ships in Battleship), that the players use different systems thereby requiring network or socket programming?**

9. **If Multiplayer, Who Starts First: Toss or Defined by Game (in chess white plays first and we need to define who plays as white) or Choice of Players.**

10. **If there is an unfair advantage in starting first (like in Tic Tac Toe), then there must be 3 or more rounds with alternating opportunity for playing first. Give mathematical proof stating or explaining the advantage?**

11. **If Multiplayer, does the player alternate after every move or what is the rule for player changeover?**

12. **Does the Game involve a Board? If yes add a picture of it and explain.**

13. **If yes for board, then give the Board Configuration (like 3 x 3 in Tic Tac Toe, or 9 x 9 in Sudoku) with pictures if required.**

14. **If no for board, then briefly describe the input/output mechanism of how the player provides inputs and how they receive feedback (with pictures if required).**

15. **Game Specific Rules with Pictures, if required for clear explanation.**

16. **Will there be Win/Lose scenario only, or is there an opportunity for Draw. Give mathematical proof for the same, if applicable?**

17. **If Yes for Draw, then there must be 3 or more rounds to determine winner? When to stop the game?**

18. **How to determine that the game is complete? Explain clearly, with pictures if required.**

19. **How to determine the Winner or Loser? Explain clearly, with pictures if required.**

20. **Is there a possibility to continue the game indefinitely or will it finish after a predefined number of rounds/turns? Give mathematical proof for the same, if applicable.**

21. **Is it possible to develop the game as a Console Application? If no, give reasons. If Yes, Explain your idea for Input Output and Gameplay Mechanics.**

22. **Do you think that it will be better, if it is designed as a GUI Application? If yes, give reasons.**