Game Playing: Introduction, Basic Concepts and Features

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Abstract: *To solve many complex problems of artificial intelligence game playing is used .Game playing is useful for many complex and difficult problems like chess playing, four queen problem, eight queen problem .All of such type of problems can be solved easily with the help of the concept of game playing. Game includes players, strategy to play game , players to play game and goal to achieve . But ,without the existence of proper strategy ,it is not possible to make the game successful. Game playing is very important search problem of the artificial intelligence. This field is very broad and vast .Field of game playing increased with the development and inventions o new technology and techniques of artificial intelligence. This research paper focuses on various important and basic concepts of the game playing including the need of game playing, introduction, application and working of game playing.*

Key Words: *Queen , Artificial ,Strategy , Intelligence, Existence*

1. INTRODUCTION:

Game playing is a important field of the artificial intelligence.[1] Game playing is a search problem that is solve many complex problems. Games are problems that need intelligence to play and proper strategy to interpret.[2] These are well defined problems that are solved using various strategies. In every game, these things exist which are: a number of players ,initial state ,goal to achieve, strategy to play game.[3] Game playing is used in the movie scenes for making them realistic in easy way where it is difficult to make such scenes real without game playing.[4] In various medical conditions like patients suffering from the paralysis, simulation devices are used to re-gain the movement

2. NEED:

Various problems like eight queen problem, four queen problem, chess problems can be solved with the help of game playing which is an important application of game playing. In these problems, it is not possible to know the moves of opponent in advance. So, game playing helps to solve such kind of the problems by predicting the possible moves in such kind of complex problems.

3. WORKING: Generally game is represented by the initial state. Working of game playing is given below :
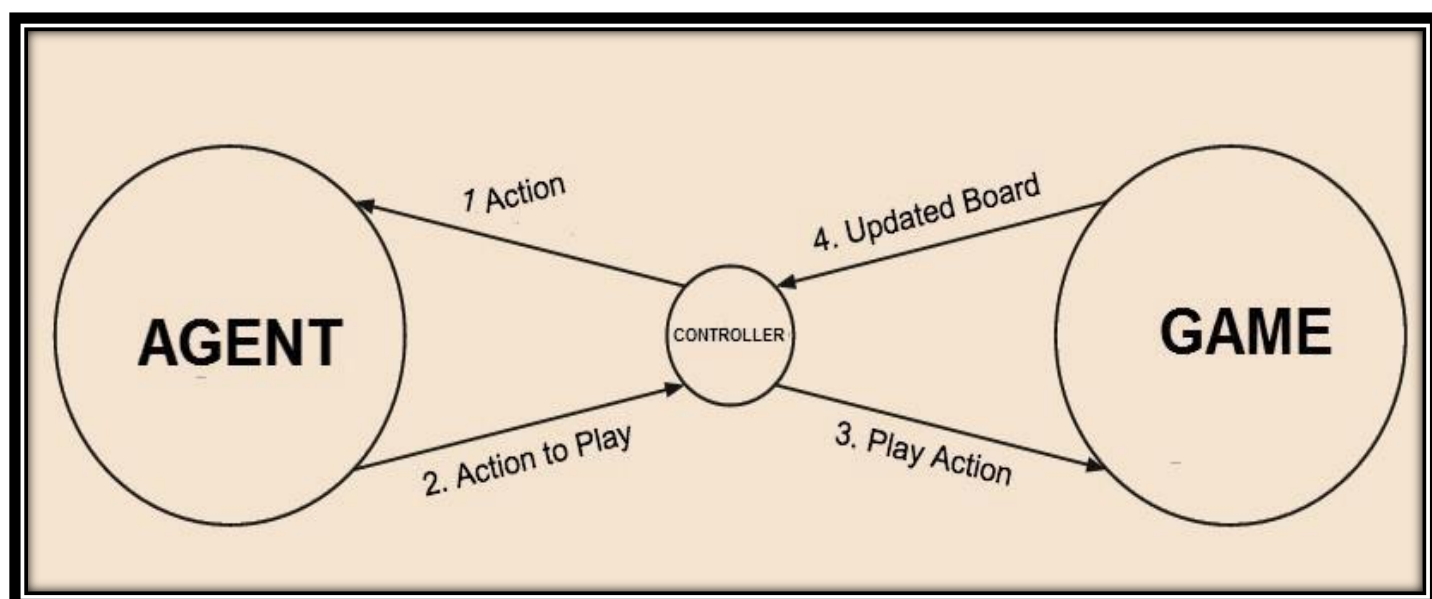

Fig.1-An Example of Game's Working

- **Agent:** Agent is a user of the game who will play the game. Game should be understandable so that user of the game can easily play the game. All the actions performed by the agent or user of the game who play the game.

- **Controller:** To play any game a controller is needed. Without any controller, it is impossible to perform any move in the game. Agent uses the controller for performing the various actions like left, right, up, down, jump etc.

- **Game:** Game is a problem which defined with particular goal to achieve and on the same time demands some intelligence to achieve such a goal and represented by initial state.

- **Action:** For every move made by the agent or user or the person who is playing game , there possible result and reaction for it. Such possible reaction comes after any move made by the game player. This is known as game action.

- **Controller:** For playing any game, move is made by the user or agent of the game. Without the help of any controller it is not possible to perform any move while playing the game. Controller may be some joystick, gaming remote or virtual controller.

- **Gaming Strategy:** Games are made for entertainment purpose and require some intelligence of player or user who is playing the game. For making any game project successful, there should be some strategy to play the game. Without proper logic and strategy game will be boring and not interesting.

4. CHARACTERISTICS:
Any game may have many characteristics, but There should certain characteristics that a game should have. Some of them are given below-:

- There should some rules to follow in game. Without the presence of any rule in the game, the game become very boring and not interesting.
- The gaming characters should aware about how to act in the gaming environment means to say that game should be user friendly .
- There should be some algorithm to find the path from initial state of the game to reach the goal state. In this way game works properly.
- In game playing, there should exist some mechanism to decide the best feasible and optimal path from the available path that exist.
- Game playing need a proper planning and strategy to play the game. Without any proper strategy or planning game is meaningless.

5. APPLICATIONS:
Games are used in both the real world and virtual world. There are many applications of the game playing. Some of them are given below-:

- Game playing is used in the real life for human to test their intelligence by various types of available options and type of games including puzzle and strategic games.
- Various software and machines use artificial intelligence. Such type of intelligence that is artificial not of human, can be tested easily with the help of game playing.
- Game playing is also used in various problems for solving them. Most of these problems are related with artificial intelligence and real life based problems.
- In complex problems like chess playing where it is difficult to predict the possible move of the player, game playing is used to generate all the possible combinations.
- Various simulators and emulator tools are used for getting the realistic experience for learning many things like games related with driving car or motorcycle and so on.
- Lots of options available in market for playing games like single play, multi player, strategic, adventure , puzzle, racing games for the entertainment purpose.
- Concept of game playing is also used in various action based movies for making the action scenes of the movies realistic and powerful.

6. CONCLUSION:

The Games are used for the purpose of entertainment and helps to test the brain intelligence with the help of various strategic games like chess, puzzle games and so on. Game playing is a concept that is a very important application that is not only limited to gaming but also related with the real life problems and goals. Game playing helps to achieve such goals and solve the complex problems that are related with the field of artificial intelligence and real world also. Simulators and emulators use the concept of game playing. Many patients suffering from stroke or paralysis use such type of devices to learn the moves like leg up , leg down and so on. The scope of game playing and its use will increase more in the future

7. ACKNOWLEDMENT:

While making this research paper, I have put all of my best and possible efforts for making this research paper. I hope this research paper will be useful and helpful for the authors who want to do further research Related to game and working of game playing.

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