# Course Title: Neural Network and Fuzzy Systems

Course Code: CSE-451

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**Project Name:** Finding path usingReinforcement learning

**Introduction:**

Reinforcement learning in formal terms is a method of machine learning where in the software agent learns to perform certain actions in an environment which lead it to maximum reward. It does so by exploration and exploitation of knowledge it learns by repeated trials of maximizing the reward.

The main goal of this project to find path from random starting point to specific end point

**Project Description :**

We are intended to use Q learning algorithm.

First of all it generate starting point randomly , from where it will start running ,and There will be a fix ending point .between starting point and end point there will be obstacle point coloring in black and path state coloring in white.

For every movement it will achieve reward such as movement to obstacle it will get -100 and movement to path state it will obtain -1 point if it find ending point reward will be 100

**Data format:**

Input: select a random starting point. Every state has specific reward value

Output: finding the path random point to end point which is specified

**Name of the Algorithm:**

For completing this project the proposed algorithm is **Q learning** algorithm.

* The task involve when designing a Q-learning system is that to define the environment. The environment consist of:

1) States

2) Actions

3) Reward

**Equation:**

