HOMEWORK 4

Q : Explain what the below are and why are they are necessary in a 2D game

1. Continuous Time Pathfinding :
Ans :
In Games, Continuous time path Finding is very important since the game world is not always constant. For example, if a ghost is using the pathfinding algorithms, the weights of the paths might change dynamically based on the human moves and hence the graph keeps changing while the game is in play and hence we need to use continuous time pathfinding to account for the dynamically changing graphs

2. Movement planning :
Ans:
Movement planning is required in games where to achieve a particular large-scale maneuver, the particular sequence of animations may be significant. In this case movement planning is required: planning a sequence of allowed maneuvers that lead to an overall state. For example, if an exact position and orientation are given as a goal, then there may be no sequence of animations that exactly reach it, and the
planning algorithm will fail. Rather, the goal needs to make sure the character is "near enough"; a range of states is allowable.

3. Cost functions :
Ans:
Cost functions play a big role in games because the cost functions allow us to add a lot of other features to the game apart from the distance. Distance can be a very basic cost function but the games can include lots of other things. For example, a path might be shorter but steep and hence climbing that will reduce the player character's energy. So that will be a part of the cost function. Thus the cost functions allows the character and game to have many more features and hence make it more interesting