AI Challenge

Instructions :

Rules :

1. All the rules stay same as stated before in the announcement.
2. Two teams will play this game. Each team will control **1 pacman** and **1 ghost**.
3. Pacmans can collect coins, each coin will carry **1 point**. However ghosts can **not** collect coins.
4. A ghost can eat a pacman. If a ghost eats the opposite team's pacman then the ghost's team will obtain **10 points**. However a pacman that is eaten can again be eaten after **5 steps**.
5. There are some powerups in the grid. Collecting a powerup gives **1 point** like collecting coins. However, if a pacman collects a powerup it can eat a ghost. However the effect of this powerup will remain for **10 steps**. If a pacman eats the opponent team's ghost, the pacman's team will obtain **10 points**. Also a ghost that is eaten can again be eaten after **5 steps**.
6. Also in some blank spaces randomly a coin may appear.
7. The game will continue for a limited amount of time (for now **500 steps** but this may change in the finals). However if the game is a tie, it'll continue until one team obtains more points than the others.
8. Please contact us if you have any questions regarding the rules. The organizers may change rules if necessary and contestants will be notified.

Implementation :

1. We have provided a framework written in Python. So the contestants must code in **python**. It is recommended to use **python 3** .
2. We have presented the contestants with a gui to help them visualize their actions. However to run this gui you would need the **pygame** (https://www.pygame.org/news) module of library installed in your system.
3. We have provided you the following files and folders.
    a. The root folder contains the **gameDriver.py** file. This contains all the physics of the game system. This code controls the flow of the game and also displays the game in a gui window. The contestants should not alter anything of this file, as this may result in a faulty game system, which may follow rules different from the actual game rules. Also there is a text file named **pacmanGrid.txt**. This contains the grid layout of the game. We have given a easy sample grid here, but in the final test there will be more challenging grids. So your model should be a general one.
    b. A folder named **img** has some images necessary for the gui.
    c. A folder named **Adversary** should contain the AI for opponent team. The contestants don't need to do anything with this folder.
    d. And a folder named **Player** . This is the only folder contestants will have to work on.
        i. The contestants will only have to submit this **Player** folder, however they **must change the name of the folder to their team name.**
        ii. There is a text file teamName.txt. The contestants will save their team name in this file.

            Now it contains a line - "Team Name Here"

            You must change this text to your team name.

        iii. There is a python code named **teamCode.py** . You must do all codings in this file. It is recommended not to use any extra files, all your codes should be in this file. However you may as many modules or libraries you wish. You'll need to notify the organizers directly if you use a uncommon module in your code.

- You must complete the two functions :
    - pacmanMove
    - ghostMove
- Make sure that each function returns the output within **0.2 sec**.

    Thus you’ll have 0.2 sec to decide pacman move and 0.2 sec to decide ghost move.

    The game takes place parallely not sequentially, i.e. at the same time both the pacman and the ghost of both the teams will move.

Instead of writing all the implementation details here and making this document messy, we’ve included all the details in the **teamCode.py** file. Please kindly check them and feel free to ask any questions.