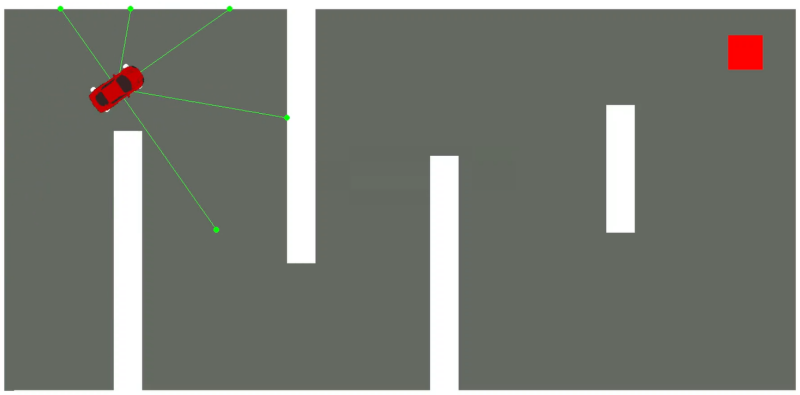
Open AI Gym Custom Environment

Aim

The car should reach its target destination despite the barriers in the path.

Approach

We will train the agent(car) using Reinforcement Learning by giving appropriate rewards and penalties for every action it takes.



Dependencies

```
pip install stable-baselines3
pip install pygame
pip install gym
```

Environment

- ***Action Space***: Accelerate, Steer Right, Steer Left
- ***Observation Space***: 5 radars in the direction of directions of -90°,-45°,0°,45°,90° and the cars position.
- ***Reward***: Reward depends on the distance between the car and the target destination. If the car reaches the goal a greater amount of reward is given.
- **Reset**: Restarts the game, where the car's initial position is (100,150) and initial angle is 90°
- The red box denotes the target destination.
- The car crashes upon leaving the track: car crashes upon touching the white pixel.

Execution

```
python main.py
```

- We train the car using Reinforcement Learning Algorithm from Stable-Baselines3 library.

- Needs many number of timesteps to train (around 300000 timesteps is suggested for better results)