보상함수 가이드

```
import math

def reward_function(params):

    ############## [reward1] all_wheels_on_track #############
    all_wheels_on_track = params['all_wheels_on_track']

    if all_wheels_on_track :
        reward1 = ##set value
    else:
        reward1 = ##set value


    ############## [reward2] speed #############
    speed = params['speed']

    if speed > 3 :
        reward2 = ##set value
    elif speed > 2 :
        reward2 = ##set value
    elif speed > 1 :
        reward2 = ##set value
    else:
        reward2 = ##set value


    ############## [reward3] distance_from_center #############
    distance_from_center = params['distance_from_center']
    track_width = params['track_width']

    if distance_from_center < 0.1 * track_width :
        reward3 = ##set value
    elif distance_from_center < 0.5 * track_width :
        reward3 = ##set value
    else:
        reward3 = ##set value


    ############## [reward4] steering_angle #############
    abs_steering = abs(params['steering_angle'])

    if abs_steering < 5 :
        reward4 = ##set value
    elif abs_steering < 15 :
        reward4 = ##set value
    else :
        reward4 = ##set value
```

```
    ############## [reward5] direction_diff #############
    waypoints = params['waypoints']
    closest_waypoints = params['closest_waypoints']
    heading = params['heading']

    # 현재 에이전트와 가장 가까운 waypoint의 위치를 가져옵니다.
    next_point = waypoints[closest_waypoints[1]]
    prev_point = waypoints[closest_waypoints[0]]

    # track_direction 을 계산
    track_direction = math.atan2(next_point[1] - prev_point[1], next_point[0] - prev_point[0])
    track_direction = math.degrees(track_direction)

     # 각의 차이 (direction_diff) 계산
    direction_diff = abs(track_direction - heading)
    if direction_diff > 180:
        direction_diff = 360 - direction_diff

    # 보상 결정
    if direction_diff < 10 :
        reward5 = ##set value
    elif direction_diff < 30 :
        reward5 = ##set value
    else :
        reward5 = ##set value


    ############ [final reward] #############
    reward = reward1 + reward2 + reward3 + reward4 + reward5

    return float(reward)
```