

AI Racing Challenge

During a race the PhysicsUpdate loop is run a fixed number of times per second. On every run, all code within the loop is executed. Make sure anything you don't want running constantly is conditional!

```
// The vehicle can be controlled by calling functions on the
// api object, e.g. api.SetThrottle()

// Global state can be initialised here

// This is called repeatedly as the game is running
var PhysicsUpdate = function(api) {
};
```

API

```
api.SetThrottle(70)    //Sets acceleration speed, -100 to 100
api.SetBrake(50)       //Applies a braking force, 0 to 100
api.Boost()            //Triggers a boost
api.GetTimeToNextBoost() //Returns the time until you can boost again

api.SteerToRight()     //Sets your car to follow right lane
api.SteerToMiddle()    //Sets your car to follow middle lane
api.SteerToLeft()      //Sets your car to follow left lane
api.ChangeLaneRight()  //Changes lane to the right
api.ChangeLaneLeft()   //Changes lane to the left

api.CarInFront()       //Returns true if a car is in front of you
api.CarOnRight()        //Returns true if a car is on your right
api.CarOnLeft()         //Returns true if a car is on your left
api.GetDistanceToNextCorner()
    //Returns the distance to the start of the next corner
    //Returns 0 if you are currently on a corner
api.GetNextCornerAmount()
    //Returns the sharpness of the next corner
    //A value between -1 and 1
    //Positive for a right turn
    //Negative for a left turn
```

Event API

```
When.EVENT.ACTION

EVENTS :
    CarOnRight()
    CarOnLeft()
    CarInFront()
    RaceStarts()
    SpeedLessThan()
    SpeedMoreThan()
    NextCornerLeft()
    NextCornerRight()
    NextCornerDistanceBetween()
    NextCornerDistanceLessThan()
    NextCornerDistanceMoreThan()

ACTIONS :
    SetBrake(50)
    SetThrottle(70)
    ChangeLaneRight()
    ChangeLaneLeft()
    SteerToMiddle()
    SteerToLeft()
    SteerToRight()
    Boost()
```

Example

```
var maxSpeed = 30;

When.RaceStarts().Boost();

var PhysicsUpdate = function(api) {

    //Max speed control
    if (api.GetDistanceToNextCorner() <= 30) {
        maxSpeed = 23;
    }
    else {
        maxSpeed = 30;
    }

    //Throttle control
    if (api.GetSpeed() < maxSpeed) {
        api.SetThrottle(100);
    }
    else {
        api.SetThrottle(0);
    }
};
```

This example script boosts at the start of the race, using an event.

If the car is close to a corner, the maximum speed is lowered to avoid flipping over.

It maintains a maximum speed using the throttle.

Script

You should use this space to make notes!

```
// Global state and event actions should be initialised here
```

```
// This is called repeatedly while the game is running  
var PhysicsUpdate = function(api) {
```

```
};
```