

prompt I need a scenario of changing lane. The ego is driving at speed of 60 miles per hour. Write me Opensceanrio xosc document.

before finetuning

Sure, here's an OpenSceneGraph scenario for a changing lane ma-neuver at a speed of 60 miles per hour: # Changing Lane Scenario.

Description:

In this scenario, the ego vehicle is driving at a speed of 60 miles per hour and needs to change lanes to avoid a collision with another vehicle. The ego vehicle is represented by a blue cube, and the other vehicle is represented by a red cube. The road layout is a simple two-lane highway with a solid white line separating the two lanes.

Keyframes:

0.000s: The ego vehicle is driving in the left lane at a speed of 60 miles per hour.

0.050s: The ego vehicle sees the other vehicle in its blind spot and realizes it needs to change lanes to avoid a collision.

0.100s: The ego vehicle starts to steer towards the right lane, applying gentle pressure to the steering wheel.

0.150s: The ego vehicle is now in the right lane, safely passing the other vehicle.

0.200s: The ego vehicle slows down to a stop to check its mirrors and blind spots before continuing to drive.

Animation:

*The ego vehicle's speed and steering angle are animated using a smooth and realistic motion. * The other vehicle is animated using a simple linear motion to represent its movement. * The road layout is animated using a simple texture map to represent the road surface and the white line separating the two lanes.*

Audio:

*The scenario includes a sound effect for the ego vehicle's engine and tires as it accelerates and brakes. * The scenario also includes a sound effect for the other vehicle's horn as it passes the ego vehicle.*

User Interface:

*The user interface includes a speedometer and a steering wheel to provide feedback on the ego vehicle's speed and steering angle. * The user interface also includes a display showing the ego vehicle's position on the road and the location of the other vehicle.*

Physics:

*The scenario uses a simple physics engine to simulate the motion of the ego vehicle and the other vehicle. * The physics engine takes into account factors such as the vehicle's mass, friction, and aerodynamics to provide a realistic simulation of the changing lane maneuver.*

Rendering:

*The scenario uses OpenSceneGraph to render the 3D environment and the ego vehicle in real-time. * The rendering includes detailed textures and lighting to provide a realistic representation of the road and the vehicles.*

Input:

*The user can control the ego vehicle's speed and steering angle using the keyboard or a gamepad. * The user can also use the mouse to look around and check the ego vehicle's surroundings.*

Output:

*The scenario provides a realistic simulation of a changing lane maneuver at a speed of 60 miles per hour. * The scenario also provides feedback on the ego vehicle's speed and steering angle to help the user improve their driving skills.*

I hope this scenario helps you in creating a realistic and engaging driving simulation! Let me know if you have any questions or need further assistance.

After finetuning

```

<Scene>
  <Name>ChangingLaneExample</Name>
  <File>ChangingLaneExample.xso</File>
  <Description>An example of changing lanes at high speed.</Description>
  <Settings>
    <NumberOfCars>2</NumberOfCars>
    <CarConfiguration>
      <Cars>
        <Car>
          <Name>Honda</Name>
          <Configuration>
            <MaxSpeed>60</MaxSpeed>
            <Acceleration>200</Acceleration>
            <Braking>200</Braking>
            <Mass>300</Mass>
            <Width>1.6</Width>
            <Length>4.2</Length>
            <Height>1.5</Height>
            <GroundEffect>None</GroundEffect>
            <Headlights>True</Headlights>
            <Rearlights>True</Rearlights>
          </Configuration>
        </Car>
        <Car>
          <Name>Toyota</Name>
          <Configuration>
            <MaxSpeed>60</MaxSpeed>
            <Acceleration>200</Acceleration>
            <Braking>200</Braking>
            <Mass>300</Mass>
            <Width>1.6</Width>
            <Length>4.2</Length>
            <Height>1.5</Height>
            <GroundEffect>None</GroundEffect>
            <Headlights>True</Headlights>
            <Rearlights>True</Rearlights>
          </Configuration>
        </Car>
      </Cars>
      <Traffic>
        <NumberOfCarsInEach
          Lane="main">2</NumberOfCarsInEach> <CarInEachLane>
          <RandomConfiguration>
            <MaxSpeed>60</MaxSpeed>
            <Acceleration>200</Acceleration>
            <Braking>200</Braking>

```

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        <Mass>300</Mass>
        <Width>1.6</Width>
        <Length>4.2</Length>
        <Height>1.5</Height>
        <GroundEffect>None</GroundEffect>
        <Headlights>True</Headlights>
        <Rearlights>True</Rearlights>
    </RandomConfiguration>
</NumberOfCarsInEach>
</Traffic>
</NumberOfCars>
</Settings>
<Catalog>
    <File>Catalog.xso</File>
    <Description>A catalog of vehicles and settings for this scenario.</Description </Catalog>
</Scene>

<!-- Story -->
<Story>
    <Name>ChangingLanesExample</Name>
    <Description>Two cars are driving at high speed on a straight road. The car in the
    (
        <Start>0</Start>
        <Duration>100</Duration>
        <Condition> $:conditions/Condition1</Condition>
    )
    <!-- Pause -->
    (
        <Duration>0</Duration>
        <Condition> $:conditions/Condition2</Condition>
    )
    <!-- Abort -->
    (
        <Condition> $:conditions/Condition3</Condition>
    )
    <!-- Finish -->
    (
        <Condition> $:conditions/Condition4</Condition>
    )
/>
<!-- Triggers -->
(
    <Trigger>
        <StartTrigger> $:events/StartTrigger1</StartTrigger>

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        <Condition> $:conditions/Condition5</Condition>
    </Trigger>
    <Trigger>
        <StartTrigger> $:events/StartTrigger2</StartTrigger>
        <Condition> $:conditions/Condition6</Condition>
    </Trigger>
)
</Story>

<!-- Conditions -->
<Catalog>
    <File>Catalog.xso</File>
    <Description>A catalog of conditions for this scenario.</Description> </Catalog>

</Scene>

<!-- Condition -->
<Condition>
    <Name>Condition1</Name>
    <Description>The right lane is empty.</Description>
    (
        <ConditionParameter>
            <ParameterName>$Parameter1</ParameterName>
            <Value>true</Value>
        </ParameterParameter>
        <ConditionParameter>
            <ParameterName>$Parameter2</ParameterName>
            <Value>60</Value>
        </ParameterParameter>
    )
    <!-- Condition parameter -->
    (
        <ParameterParameter>
            <ParameterName>$Parameter3</ParameterName>
            <Value>48</Value>
        </ParameterParameter>
    )
</Condition>

<!-- Condition -->
<Condition>
    <Name>Condition2</Name>
    <Description>Another empty lane appears ahead.</Description>
    (

```

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    <ConditionParameter>
      <ParameterName>$Parameter1</ParameterName>
      <Value>>true</Value>
    </ParameterParameter>
    <ConditionParameter>
      <ParameterName>$Parameter2</ParameterName>
      <Value>60</Value>
    </ParameterParameter>
  )
<!-- Condition parameter -->
(
  <ParameterParameter>
    <ParameterName>$Parameter3</ParameterName>
    <Value>50</Value>
  </ParameterParameter>
)
</Condition>

<!-- Condition -->
<Condition>
  <Name>Condition3</Name>
  <Description>The previous condition is aborted.</Description>
  (
    <ConditionParameter>
      <ParameterName>$Parameter1</ParameterName>
      <Value>>false</Value>
    </ParameterParameter>
    <ConditionParameter>
      <ParameterName>$Parameter2</ParameterName>
      <Value>50</Value>
    </ParameterParameter>
  )
  <!-- Condition parameter -->
  (
    <ParameterParameter>
      <ParameterName>$Parameter3</ParameterName>
      <Value>48</Value>
    </ParameterParameter>
  )
</Condition>

<!-- Condition -->
<Condition>
  <Name>Condition4</Name>
  <Description>The scenario finishes.</Description>

```

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(
  <ConditionParameter>
    <ParameterName>$Parameter1</ParameterName>
    <Value>>true</Value>
  </ParameterParameter>
  <ConditionParameter>
    <ParameterName>$Parameter2</ParameterName>
    <Value>60</Value>
  </ParameterParameter>
)
<!-- Condition parameter -->
(
  <ParameterParameter>
    <ParameterName>$Parameter3</ParameterName>
    <Value>50</Value>
  </ParameterParameter>
)
</Condition>
)

<!-- Catalog entry -->
<CatalogEntry>
  <Name>DefaultCatalogEntry</Name>
  <Description>A default entry for vehicles and settings.</Description>
  (
    <Vehicle>
      <Name>Honda</Name>
      <Configuration>
        <MaxSpeed>60</MaxSpeed>
        <Acceleration>200</Acceleration>
        <Braking>200</Braking>
        <Mass>300</Mass>
        <Width>1.6</Width>
        <Length>4.2</Length>
        <Height>1.5</Height>
        <GroundEffect>None</GroundEffect>
        <Headlights>True</Headlights>
        <Rearlights>True</Rearlights>
      </Configuration>
    </Vehicle>
    <Vehicle>
      <Name>Toyota</Name>
      <Configuration>
        <MaxSpeed>60</MaxSpeed>
        <Acceleration>200</Acceler

```

