## 

## V1 – natural scenarios generations with GPT for racing car, without telling the intrinsics of the projects

#### Observations:

* The rate of linking the clauses generated with the one in the code is less than 10%.

USER INPUT:

Based on the description that that follows for a racing game car, create 5 Gherkin test scenarios :

Sure! Here’s a detailed specification for a racing car in a game like Need for Speed, focusing on acceleration, handling, and braking performance:

Racing Car Specification

Acceleration

0-60 mph (0-100 km/h): 2.5 seconds

0-100 mph (0-160 km/h): 5.5 seconds

Top Speed: 220 mph (354 km/h)

Engine: Twin-turbo V8 with 900 horsepower

Transmission: 7-speed dual-clutch automatic

Handling

Steering: Responsive and precise, with variable steering ratio for better control at high speeds

Suspension: Adaptive suspension system that adjusts stiffness based on speed and road conditions

Turning Radius: 10.5 meters (34.4 feet)

Traction Control: Advanced traction control system to maintain grip during sharp turns and wet conditions

Downforce: Active aerodynamic elements to increase downforce at high speeds, enhancing stability and cornering

Turning Performance in Different Conditions

Dry Asphalt: Sharp and precise turns with minimal understeer; the car maintains high grip and stability.

Wet Roads: Slightly reduced grip, but the advanced traction control and adaptive suspension help maintain control; moderate understeer may occur.

Gravel/Dirt: Increased understeer and reduced grip; the car’s suspension adjusts to absorb bumps, but careful throttle control is needed to avoid sliding.

Snow/Ice: Significant reduction in grip; the car requires gentle steering inputs and careful acceleration to avoid losing control. Traction control helps, but driving at lower speeds is recommended.

Braking Performance

Braking System: Carbon-ceramic disc brakes with 6-piston calipers

0-60 mph (0-100 km/h) Braking Distance: 30 meters (98 feet)

0-100 mph (0-160 km/h) Braking Distance: 70 meters (230 feet)

Brake Fade: Minimal, thanks to high-performance materials and cooling systems

ABS (Anti-lock Braking System): Advanced ABS to prevent wheel lock-up and maintain steering control during hard braking

This specification aims to provide a balanced and high-performance racing car suitable for various conditions in a game like Need for Speed. The car’s acceleration, handling, and braking are designed to offer an exhilarating and responsive driving experience.

RESPONSE:

**Scenario 1: Acceleration Performance**

Feature: Acceleration Performance

Scenario: Verify 0-60 mph acceleration

Given the racing car is at a complete stop

When the player accelerates the car to 60 mph

Then the car should reach 60 mph within 2.5 seconds

**Scenario 2: Handling on Dry Asphalt**

Feature: Handling Performance

Scenario: Verify handling on dry asphalt

Given the racing car is driving on dry asphalt

When the player makes a sharp turn

Then the car should turn with minimal understeer

And the car should maintain high grip and stability

**Scenario 3: Braking Performance**

Feature: Braking Performance

Scenario: Verify braking distance from 60 mph

Given the racing car is traveling at 60 mph

When the player applies the brakes fully

Then the car should come to a complete stop within 30 meters

And the ABS should prevent wheel lock-up

**Scenario 4: Handling on Wet Roads**

Feature: Handling Performance

Scenario: Verify handling on wet roads

Given the racing car is driving on wet roads

When the player makes a moderate turn

Then the car should experience slightly reduced grip

And the traction control should help maintain control

And the car should exhibit moderate understeer

**Scenario 5: Top Speed Achievement**

Feature: Speed Performance

Scenario: Verify top speed

Given the racing car is on a straight road

When the player accelerates the car to its maximum speed

Then the car should reach a top speed of 220 mph

V2 –generations with GPT for same as above telling this time the intrinsics

#### Observations

* The model can link 85% of cases
* In total, 71% percent are correct, covering the combination of all steps in less than 5 \* number of steps attempts. This suggests that the model is efficient.
* Generation successfully understand regular patterns and match fundamental metric types and unit conversions (e.g., UK vs US metrics) proving that the LLM is capable of understanding the background.
* TODO: Show how fine-tuning improves this and how we handle it.

**INPUT:**

You are given a specification for a racing game car and set of available Gherkin available steps. Create 5 Gherkin test scenarios:

### Racing Car Specification

### Gherkin available steps:

### Scenario 1: Acceleration Performance

Feature: Acceleration Performance

Scenario: Verify 0-60 mph acceleration

Given the racing car is at a complete stop

When the player accelerates the car to 60 mph

Then the car should reach 60 mph within 2.5 seconds

### Scenario 2: Handling on Dry Asphalt

Feature: Handling Performance

Scenario: Verify handling on dry asphalt

Given the racing car is driving on dry asphalt

When the player makes a sharp turn

Then the car should turn with minimal understeer

And the car should maintain high grip and stability

**Scenario 3: Braking Performance**

Feature: Braking Performance

Scenario: Verify braking distance from 60 mph

Given the racing car is traveling at 60 mph

When the player applies the brakes fully

Then the car should come to a complete stop within 30 meters

And the ABS should prevent wheel lock-up

**Scenario 4: Handling on Wet Roads**

Feature: Handling Performance

Scenario: Verify handling on wet roads

Given the racing car is driving on wet roads

When the player makes a moderate turn

Then the car should experience slightly reduced grip

And the traction control should help maintain control

And the car should exhibit moderate understeer

**Scenario 5: Top Speed Achievement**

Feature: Speed Performance

Scenario: Verify top speed

Given the racing car is on a straight road

When the player accelerates the car to its maximum speed

Then the car should reach a top speed of 220 mph

## V3 – Same as above but conditioned by an input scenario description in natural language!

You are given a specification for a racing game car and an input scenario description. You must generate 5 full Gherkin syntax tests for this scenario. Create 5 Gherking test scenarios:

### Racing Car Specification

### Gherkin available steps:

### Input scenario:

The car should accelerate at roughly the right rate if we take the car's power, weight, and aerodynamic data, we should be able to simulate its acceleration somewhat accurately (let's say within 0.5 seconds).

**Scenario 1: Verify 0-60 mph Acceleration**

Feature: Acceleration Performance

Scenario: Verify 0-60 mph acceleration

Given the car has 671 kw, weighs 1500 kg, has a drag coefficient of 0.28

And the car is on dry road

When I accelerate to 100 km/h

Then the time should be within 0.5s of 2.5s

**Scenario 2: Verify 0-100 mph Acceleration**

Feature: Acceleration Performance

Scenario: Verify 0-100 mph acceleration

Given the car has 671 kw, weighs 1500 kg, has a drag coefficient of 0.28

And the car is on dry road

When I accelerate to 160 km/h

Then the time should be within 0.5s of 5.5s

**Scenario 3: Verify Top Speed**

Feature: Speed Performance

Scenario: Verify top speed

Given the car has 671 kw, weighs 1500 kg, has a drag coefficient of 0.28

And the car is on dry road

When I accelerate to 354 km/h

Then the car should reach a top speed of 220 mph

**Scenario 4: Verify Braking Distance from 60 mph**

Feature: Braking Performance

Scenario: Verify braking distance from 60 mph

Given the car has 671 kw, weighs 1500 kg, has a drag coefficient of 0.28

And the car is moving at 26.8 m/s

When I apply the brakes fully

Then I should have traveled less than 30 meters

**Scenario 5: Verify Handling on Dry Asphalt**

Feature: Handling Performance

Scenario: Verify handling on dry asphalt

Given the car has 671 kw, weighs 1500 kg, has a drag coefficient of 0.28

And the car is on dry road

When I turn left at a yaw rate of 30 deg/sec for 2 seconds

Then the car's heading should be 60 deg

These scenarios cover various aspects of the car’s performance, ensuring it meets the specified requirements in different conditions. Would you like to add or modify any of these scenarios?