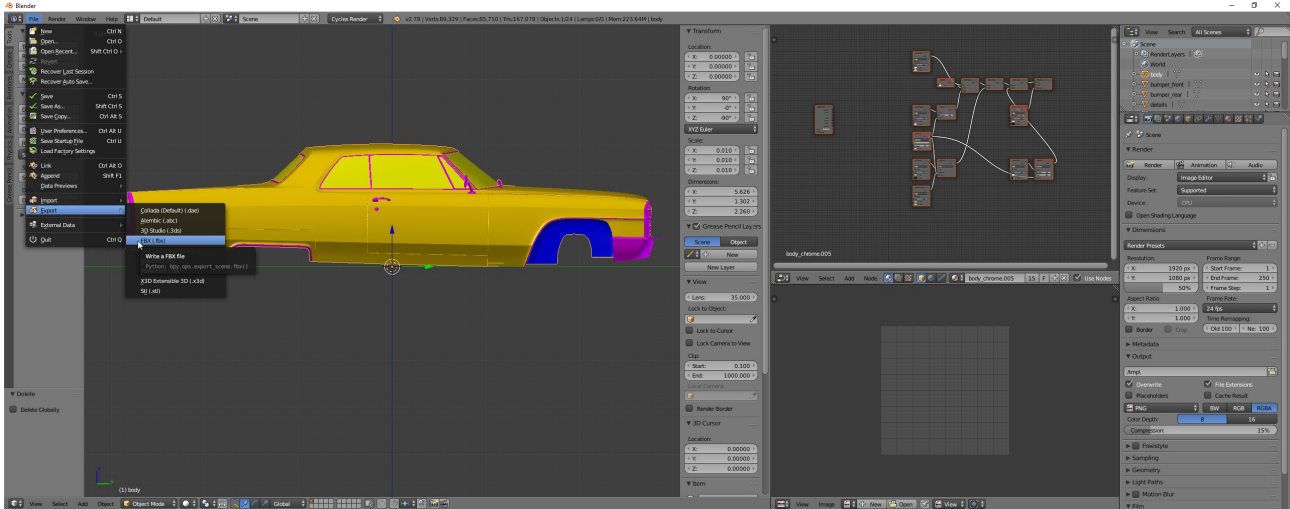


Car Mechanic Simulator 2018

CAR MODING Guide 0.7

MODELING OR EDITING EXISTING MODELS

You can modeling or editing your vehicles in most 3D modeling software which will allow you to export your model in .fbx (FBX) format. Keep in mind your model must have pivot in 0.0.0 (x,y,z) space.

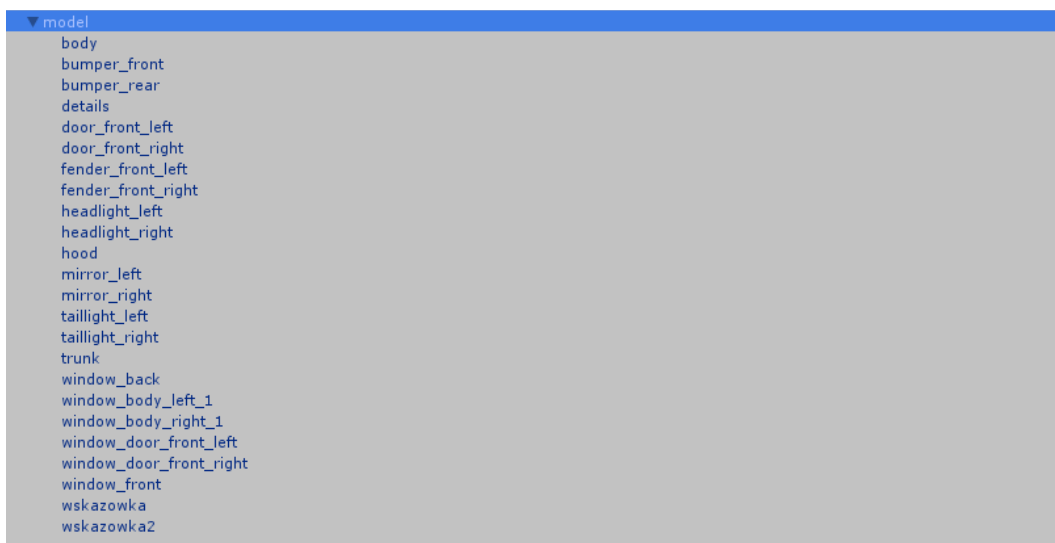


Most popular 3D Modeling Software

- Blender
- Cinema 4D
- Modo
- Lightwave
- Autodesk Maya
- Autodesk 3DS Max

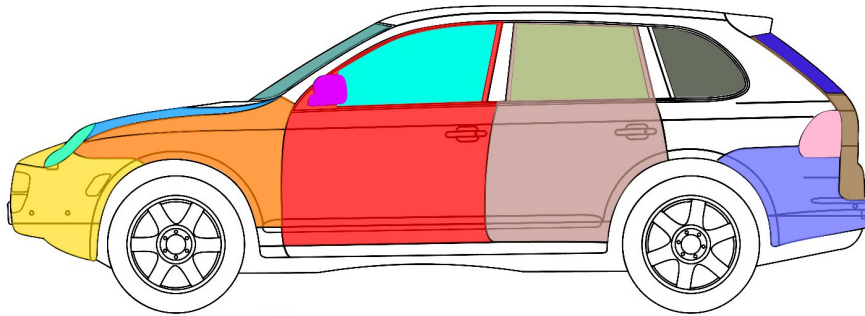
MODEL PREPARATION – BODY PARTS

Keep in mind all parts must be located in "model" object.



It is also important to use the appropriate part names otherwise you will not be able for example to open a door.

Example



bumper_front	door_front_left	door_rear_left	trunk
fender_front_left	mirror_left	window_door_rear_left	taillight_left
headlight_left	window_door_front_left	window_body_left_1	window_trunk
hood	window_front	bumper_rear	

When you name parts to car be aware some car have additional lights on back and window inside truck.



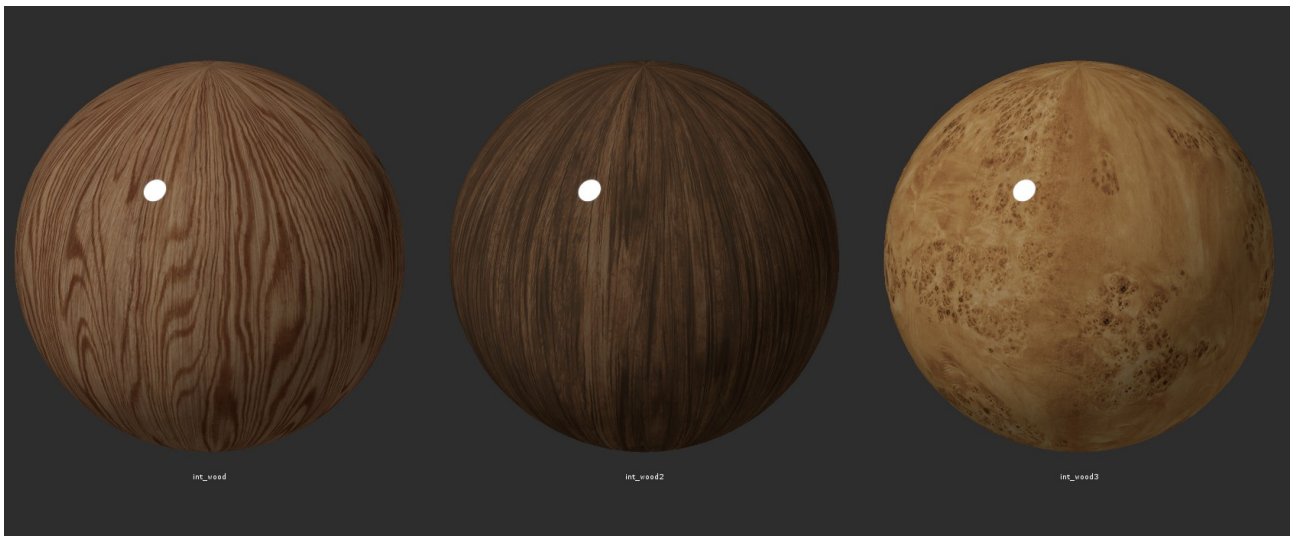
In situation when window open with whole trunk use window trunk in other case window back.

BODY PARTS - NAMING

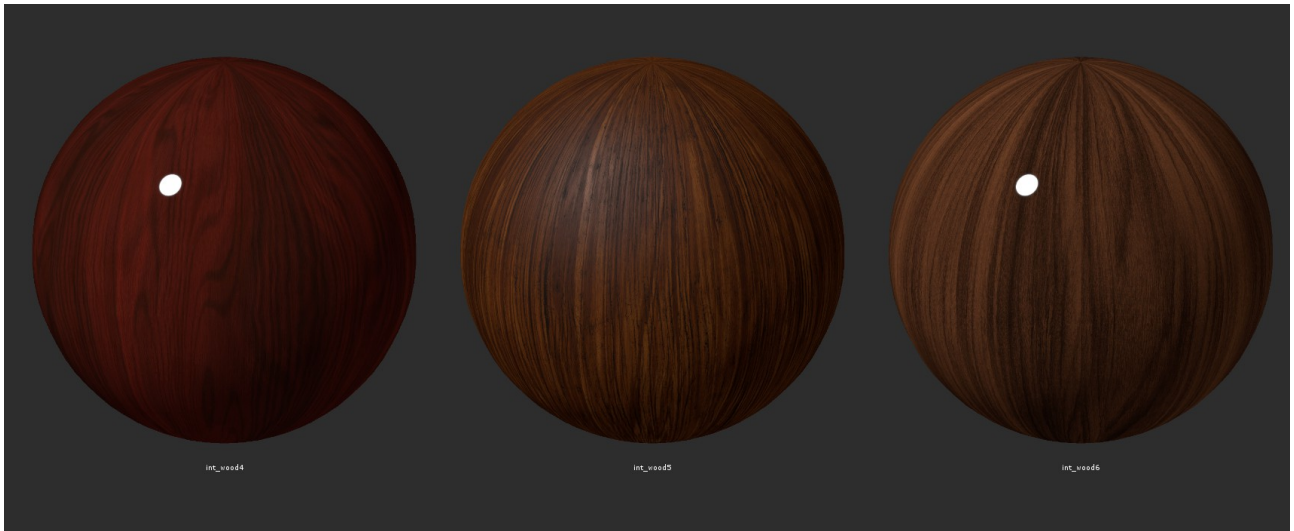
hood = Hood
door_front_left = Front Left Door
door_front_right = Front Right Door
door_rear_left = Rear Left Door
door_rear_right = Rear Right Door
trunk = Trunk
fender_front_left = Front Left Fender
fender_front_right = Front Right Fender
bumper_front = Front Bumper
bumper_rear = Rear Bumper
headlight_left = Left Headlight
headlight_right = Right Headlight
taillight_left = Left Taillight
taillight_right = Right Taillight
taillight_left_trunk = Left Trunk Taillight
taillight_right_trunk = Right Trunk Taillight
fender_rear_left = Rear Left Fender
fender_rear_right = Rear Right Fender
mirror_left = Left Side Mirror
mirror_right = Right Side Mirror
front_end = Front End
body = Body

details = Body
wskazowka - Tachometer
wskazowka2 - Speedometer
window_front = Front Window
window_back = Rear Window
window_back_left_1 = Rear Left Window A
window_back_right_1 = Rear Right Window A
window_back_left_2 = Rear Left Window B
window_door_front_right = Front Right Door Window
window_door_rear_left = Rear Left Door Window
window_door_rear_right = Rear Right Door Window
window_body_left_1 = Left Body Window A
window_body_right_1 = Right Body Window A
window_front_left = Front Left Window
window_front_right = Front Right Window
window_trunk = Trunk Window
window_body_left = Left Body Window
window_body_right = Right Body Window
window_rear_left = Rear Left Window A
window_rear_right = Rear Right Window A
window_back_right_2 = Rear Right Window B
window_door_front_left = Front Left Door Window

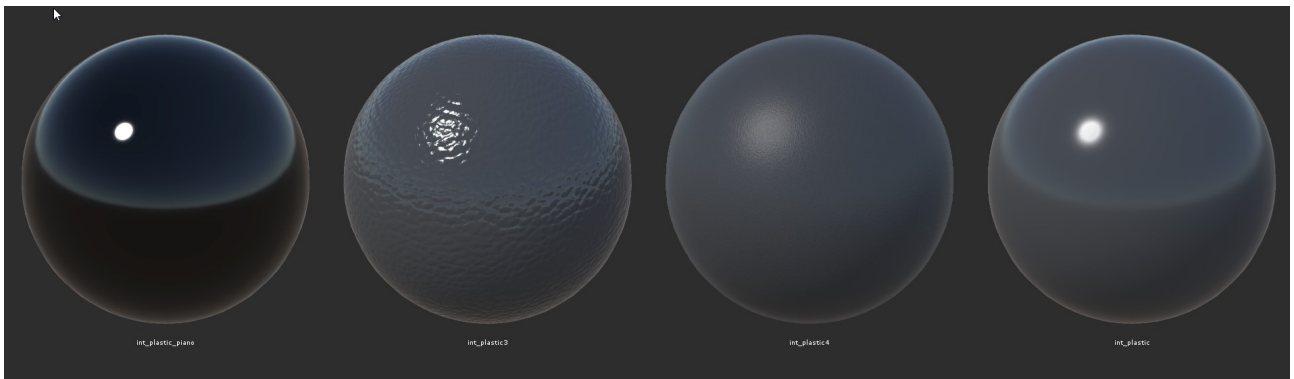
MATERIALS



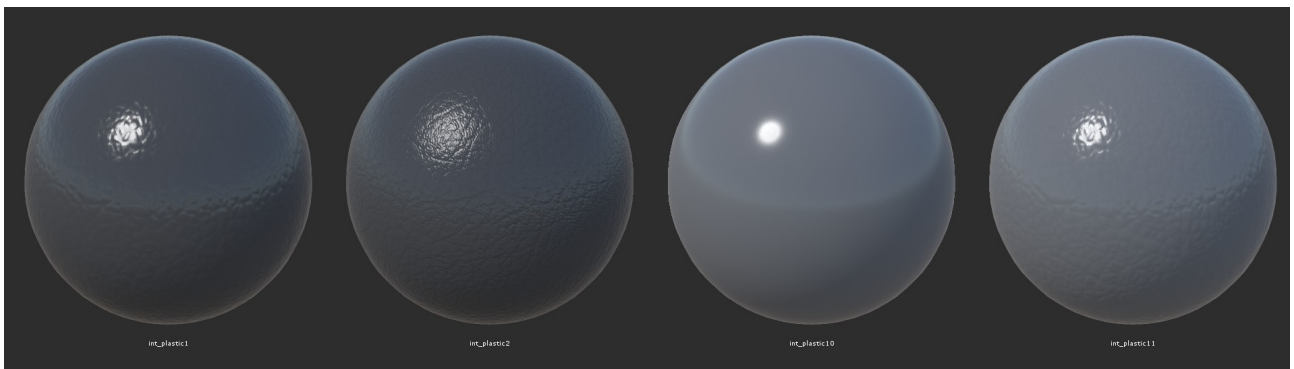
Wood materials – int_wood / int_wood2 / int_wood3



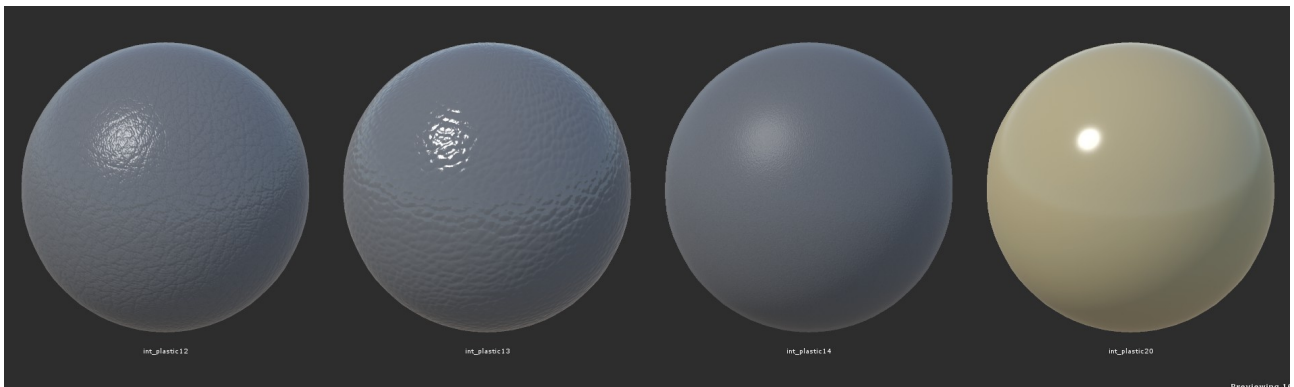
Wood materials – int_wood4 / int_wood5 / int_wood6



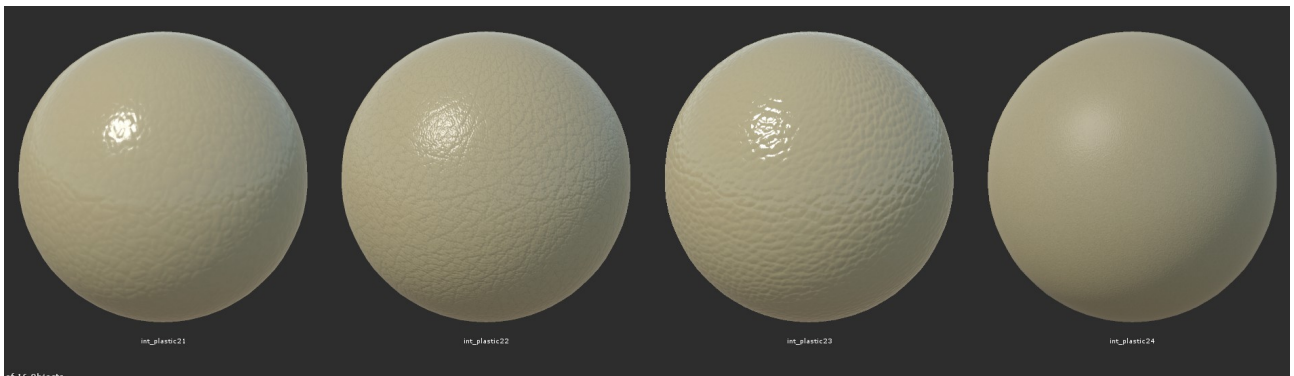
Plastic materials – int_plastic_piano / int_plastic3 / int_plastic4 / int_plastic



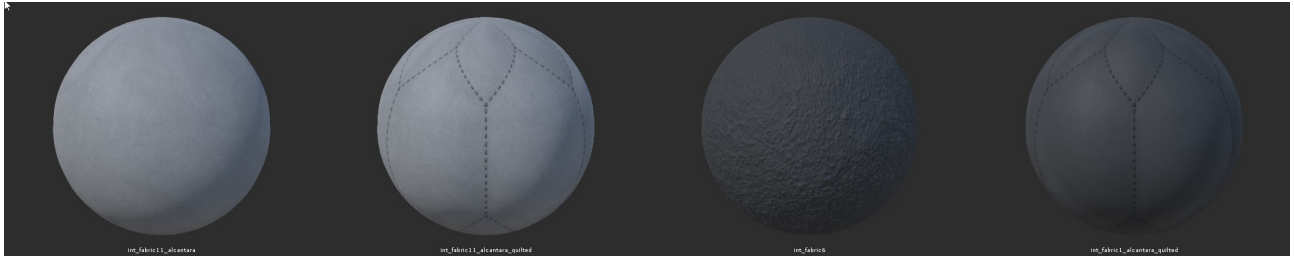
Plastic materials – int_plastic1 / int_plastic2 / int_plastic10 / int_plastic11



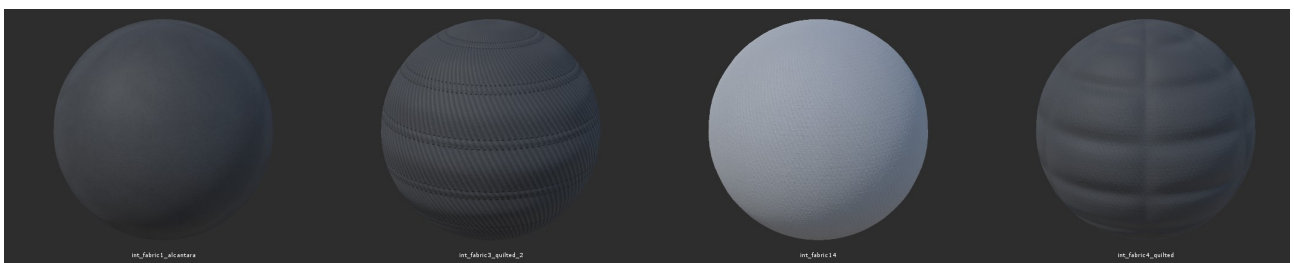
Plastic materials – int_plastic12 / int_plastic13 / int_plastic14 / int_plastic20



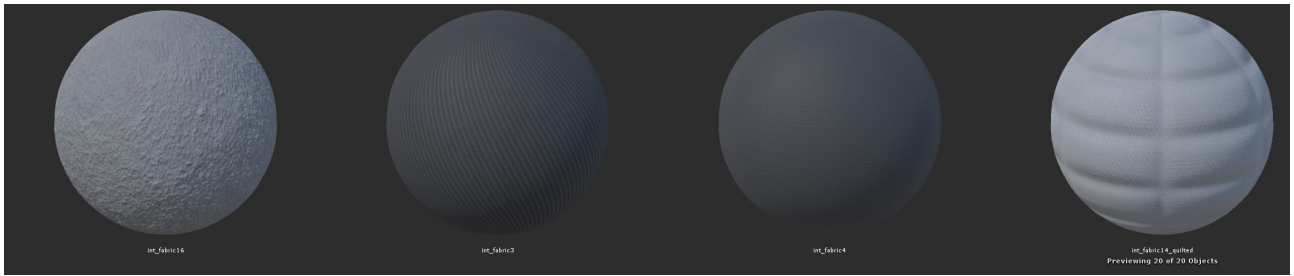
Plastic materials – int_plastic21 / int_plastic22 / int_plastic23 / int_plastic24



Fabric materials – int_fabric11_alcantara / int_fabric11_alcantara_quilted / int_fabric6 / int_fabric1_alcantara_quilted



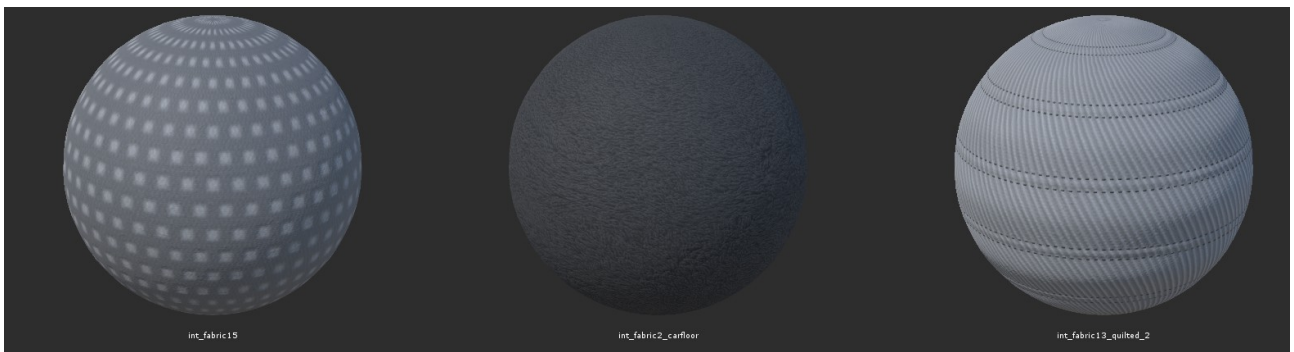
Fabric materials – int_fabric1_alcantara / int_fabric3_quilted_2 / int_fabric14 / int_fabric4_quilted



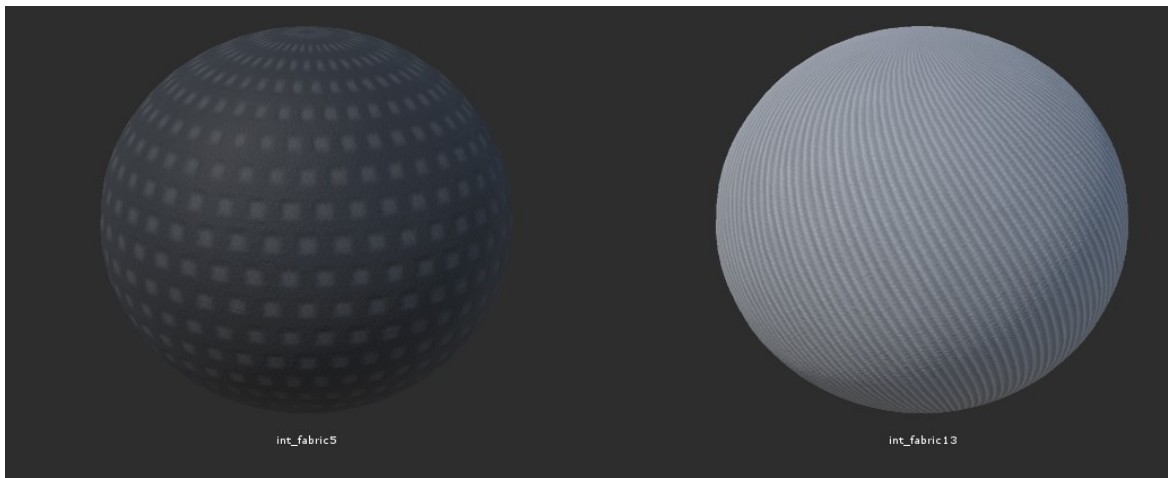
Fabric materials – int_fabric16 / int_fabric3 / int_fabric4 / int_fabric14_quilted



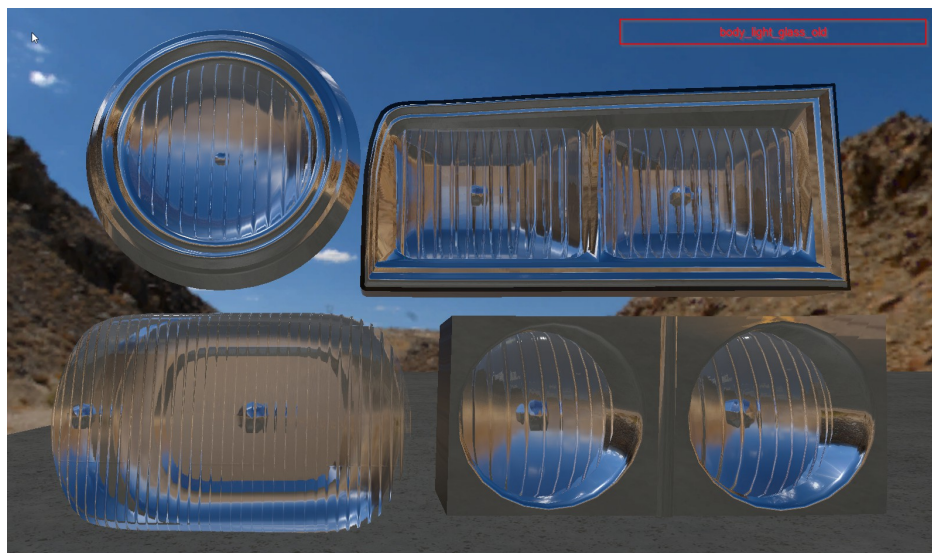
Fabric materials – int_fabric3_quilted_1 / int_fabric12_carfloor / int_fabric13_quilted_1



Fabric materials – int_fabric15 / int_fabric2_carfloor / int_fabric13_quilted_2



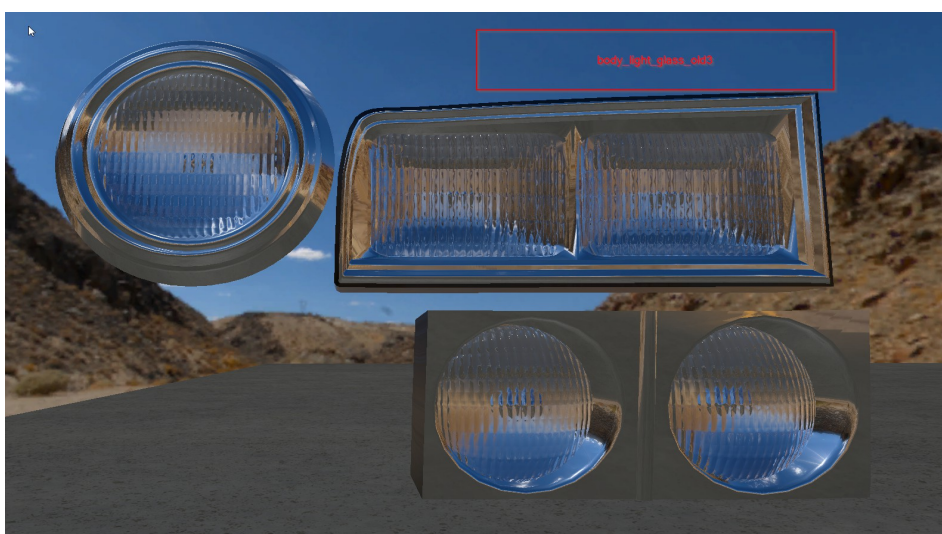
Fabric materials – int_fabric5 / int_fabric13



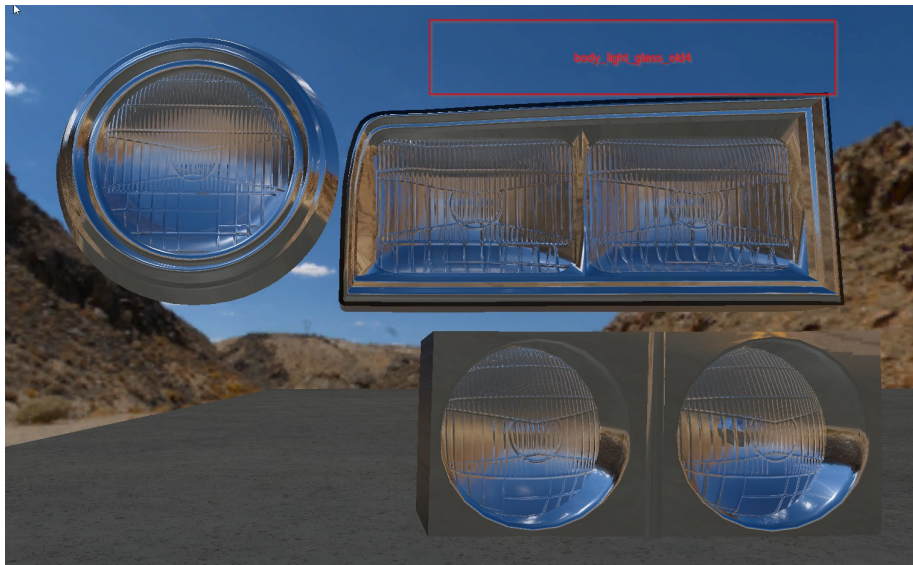
Headlights material – body_light_glass_old



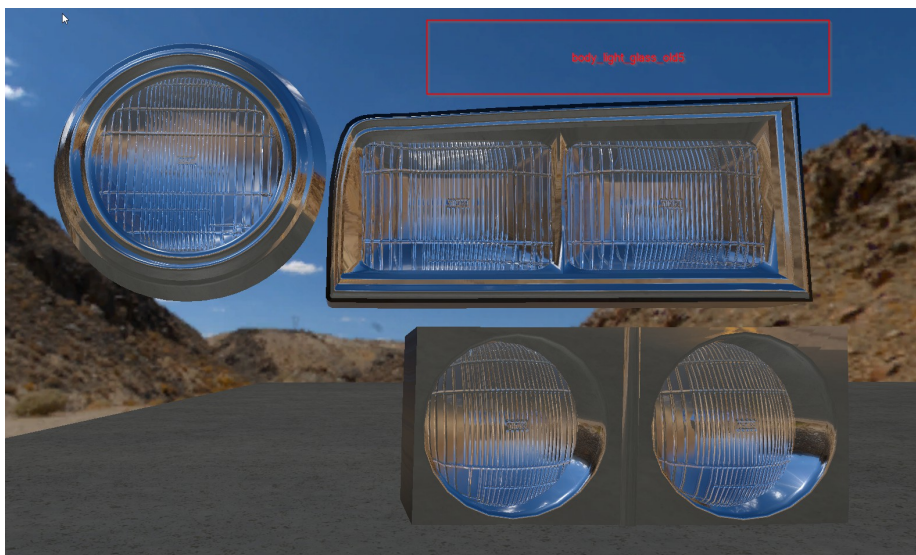
Headlights material – body_light_glass_old2



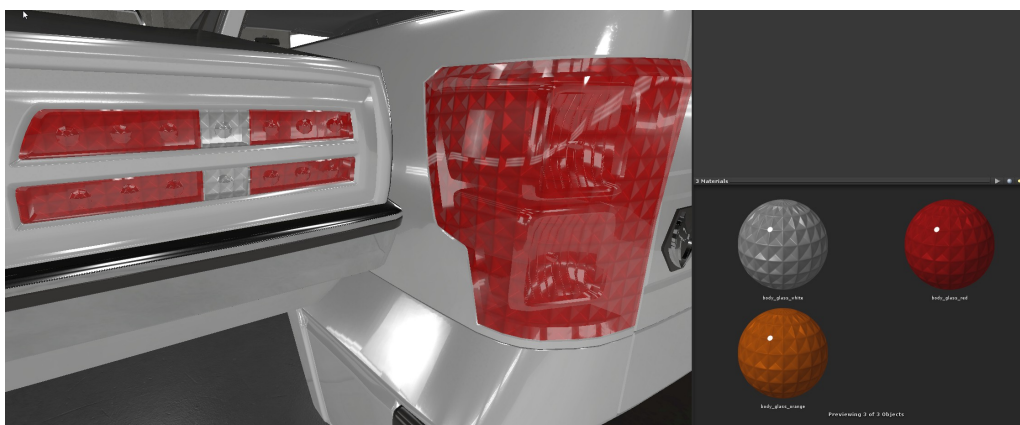
Headlights material – body_light_glass_old3



Headlights material – body_light_glass_old4



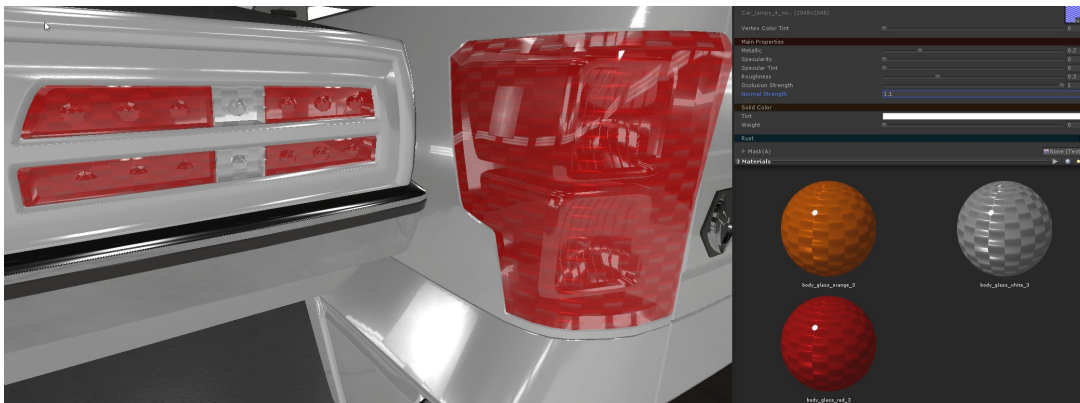
Headlights material – body_light_glass_old5



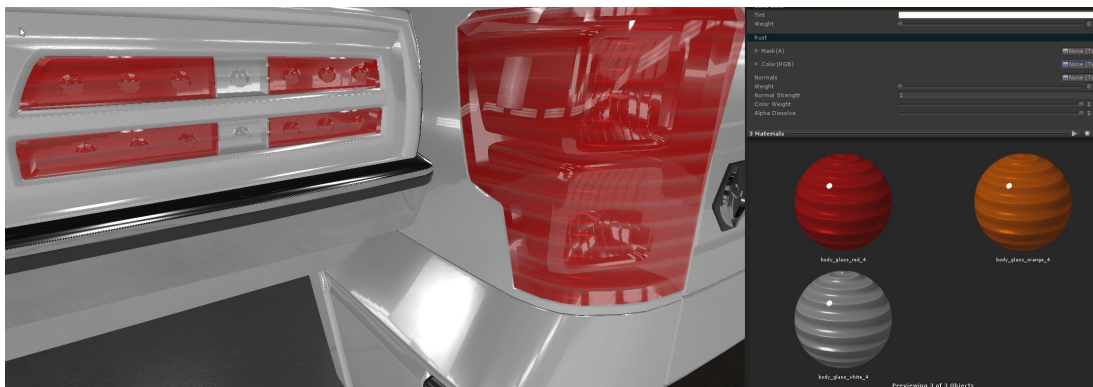
Taillights material – body_glass_white, body_glass_red, body_glass_orange



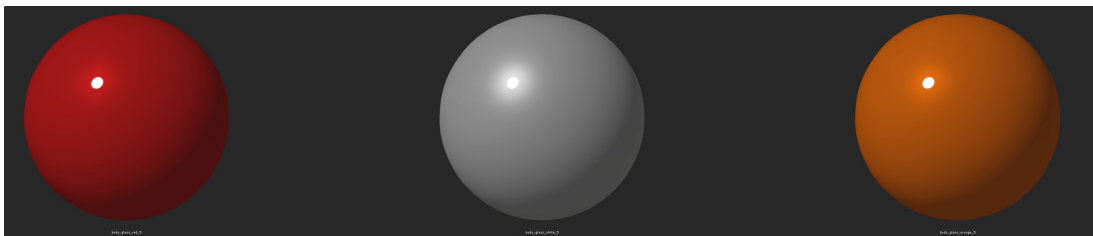
Taillights material – body_glass_white_2, body_glass_red_2, body_glass_orange_2



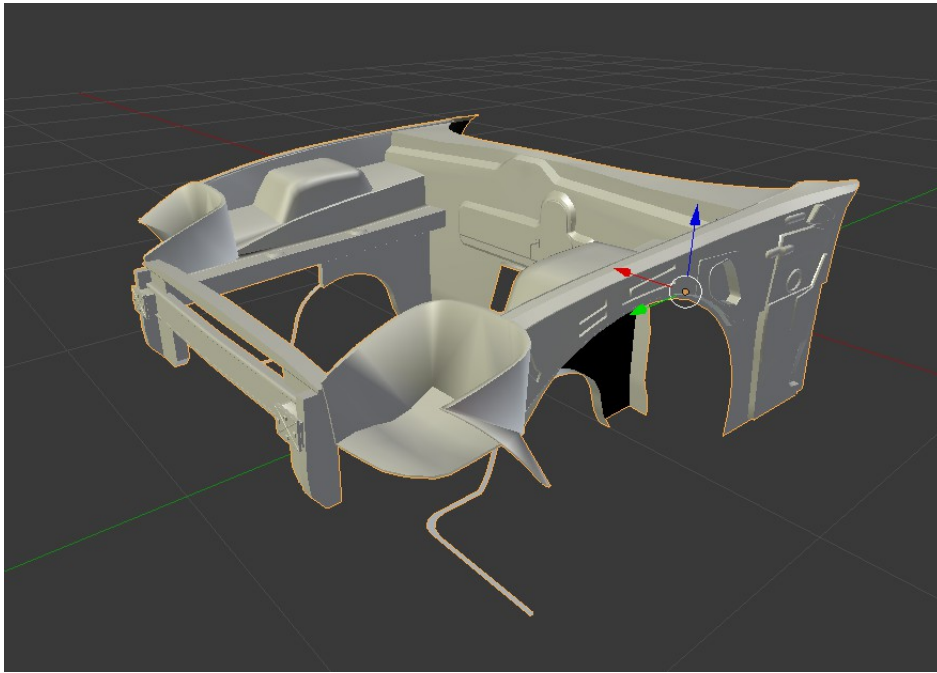
Taillights material – body_glass_white_3, body_glass_red_3, body_glass_orange_3



Taillights material – body_glass_white_4, body_glass_red_4, body_glass_orange_4



Taillights material – body_glass_white_5, body_glass_red_5, body_glass_orange_5



body_mat - placement



body_glass_black - example

List of materials (body):

body_glass_black - Black glass
 body_glass_orange - Turn-Signal material
 body_glass_orange_2 - Turn-Signal material
 body_glass_orange_3 - Turn-Signal material
 body_glass_orange_4 - Turn-Signal material
 body_glass_orange_5 - Turn-Signal material
 body_glass_orange_6 - Turn-Signal material
 body_glass_red - Turn-Signal material
 body_glass_red_2 - Turn-Signal material
 body_glass_red_3 - Turn-Signal material
 body_glass_red_4 - Turn-Signal material
 body_glass_red_5 - Turn-Signal material

body_glass_red_6 - Turn-Signal material
 body_glass_white - Turn-Signal material
 body_glass_white_2 - Turn-Signal material
 body_glass_white_3 - Turn-Signal material
 body_glass_white_4 - Turn-Signal material
 body_glass_white_5 - Turn-Signal material
 body_glass_white_6 - Turn-Signal material
 body_lights - Headlights material
 body_lights_black - Headlights material
 body_light_glass_clear - Headlights material
 body_light_glass_old - Headlights material
 body_light_glass_old2 - Headlights material

body_light_glass_old2_black - Headlights material
body_light_glass_old3 - Headlights material
body_light_glass_old4 - Headlights material
body_light_glass_old - Headlights material
body_mat - Put this material on parts under hood and fenders
body_mirror - Mirror Material
body_paint - Main car body material
body_paint_plastic - Main car body material
body_paint_plastic_invert - Inverted paint plastic
body_plastic - Plastic for body car
parktronic - Parktronic
parktronic_black - Black parktronic

underbody2 - Wheel arches, elements under the bumper
underbody3 - Car chassis
underbody4 - Metal wheel arches (for old cars)
black_hole - Material to mask holes
body_steel - Steel material
body_carbon - Carbon
body_chrome - Chrome
body_steel - Steel
body_brushedaluminium - Brushed Aluminium
body_silvermat - Silver
body_glass - Glass material (windows)
body_gum - Rubber material (windows)

List of materials (interior):

int_fabric1_alcantara - Dark Alcantara
int_fabric1_alcantara_quilted - Quilted Dark Alcantara
int_fabric2_carfloor - Dark Carpet
int_fabric3 - Dark Fabric
int_fabric3_quilted_1 - Quilted Bright Fabric
int_fabric3_quilted_2 - Quilted Bright Fabric
int_fabric4 - Dark Fabric
int_fabric4_quilted - Quilted Dark Fabric
int_fabric5 - Bright Fabric with Pattern
int_fabric6 - Dark Fabric
int_fabric11_alcantara - Bright Alcantara
int_fabric11_alcantara_quilted - Quilted Bright Alcantara
int_fabric12_carfloor - Bright Carpet
int_fabric13_quilted_1 - Quilted Bright Fabric
int_fabric13_quilted_2 - Quilted Bright Fabric
int_fabric14_quilted - Quilted Bright Fabric
int_fabric14 - Bright Fabric
int_fabric15 - Bright Fabric with Pattern
int_fabric16 - Bright Fabric
int_red - Red Plastic in seat belts
int_glass - Glass for interior parts
int_paint - Basic Interior material
int_paint_plastic - Plastic material for interior
int_pedals - Material for pedals
int_plastic - Dark grey plastic
int_plastic1 - Dark grey plastic
int_plastic2 - Dark grey plastic
int_plastic3 - Dark grey plastic
int_plastic4 - Dark grey plastic
int_plastic10 - Light grey plastic
int_plastic11 - Light grey plastic
int_plastic12 - Light grey plastic
int_plastic13 - Light grey plastic
int_plastic14 - Light grey plastic
int_plastic20 - Yellow plastic

int_plastic21 - Yellow plastic
int_plastic22 - Yellow plastic
int_plastic23 - Yellow plastic
int_plastic24 - Yellow plastic
int_plastic_piano - Glossy black plastic
int_wood - Wood material for interior
int_wood2 - Wood material for interior
int_wood3 - Wood material for interior
int_wood4 - Wood material for interior
int_wood5 - Wood material for interior
int_wood6 - Wood material for interior
int_chrome - Chrome for interior
int_steel - Steel for interior
int_brushedaluminium - Brushed aluminium for interior
leather1 - Black Leather
leather1vent - Black Leather with dots
leather11 - Dirty Blue Leather
leather11vent - Blue Leather with dots
leather12 - Blue Leather
leather13 - Dirty Blue Leather
leather2 - Black Leather
leather21 - Brown Leather
leather21vent - Brown Leather with dots
leather22 - Brown Leather
leather23 - Dirty Brown Leather
leather3 - Dirty Black Leather
leather31 - Dirty Yellow Leather
leather31vent - Yellow Leather with dots
leather32 - Yellow Leather
leather33 - Dirty Yellow Leather
speaker1 - Door Speaker texture
speaker2 - Door Speaker texture
speaker3 - Door Speaker texture
wskazowka - Material for tachometer and speedometer

DOWNLOADING AND INSTALLING UNITY (GAME ENGINE)

Downloading Unity: <https://unity3d.com/get-unity/download>

Installing Guide: <https://docs.unity3d.com/Manual/InstallingUnity.html>

DOWNLOADING AND INSTALLING CMS17 PLUGIN

Downloading CMS17 Plugin for Unity 5.6.x:

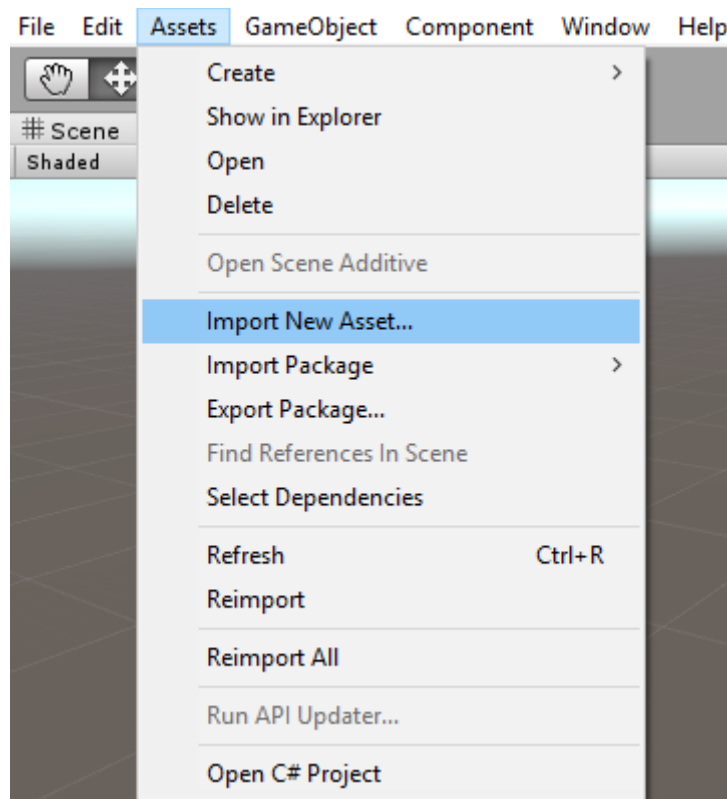
<https://www.dropbox.com/s/dgh9a80vo3i1gtp/CMS18CarExporter2.unitypackage?dl=0>

Installation CMS17 Plugin:

Right Mouse Button on Project shelf and choose **Import Package/Custom Package** and find CMS17 plugin.

IMPORT MODEL TO UNITY (GAME ENGINE)

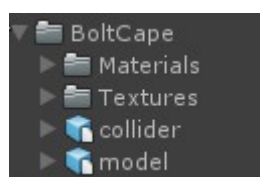
After instalation the Unity3d 5.6.x – Game Engine and Setting up new project you can easily import your 3D model by Click in **Assets/Import New Asset**.



Best is to place it in some folder. For example CARS\YOURCARNAME



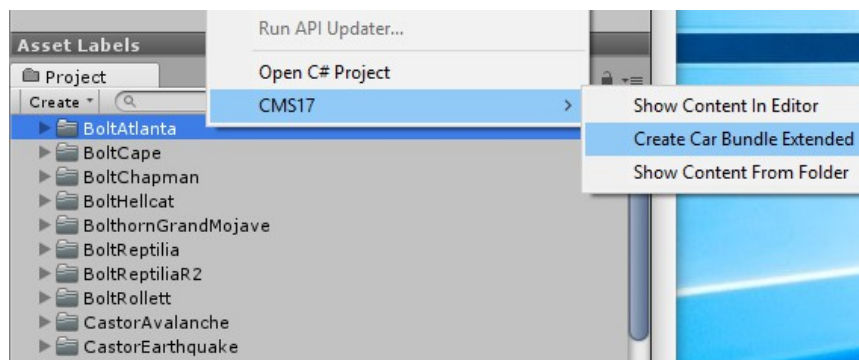
then in your car subfolder import model.fbx (car model), also collider.fbx (car collider)



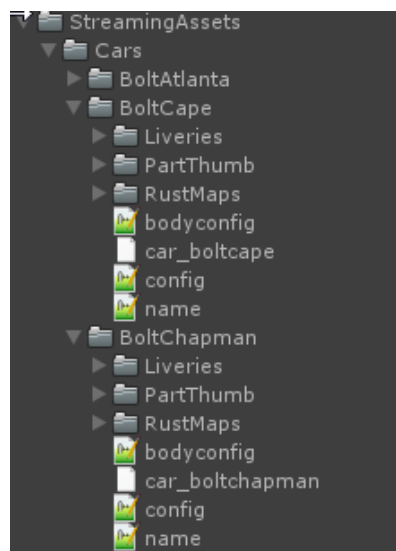
Make sure to use materials from our list – they will be changed from default to ours once imported in game. To generate car for game, last thing you need is to create CMS file with script that you have imported into Unity3d.

PREPARING CMS PACK

Select folder with your model and press Right Mouse Button and choose **CMS17/Create Car Bundle Extended**



After that operation there will be new folder in Streaming Assets called as your Car and inside it will be file called car_<yourcarname>.cms



You can copy it to game Streaming Assets folder and try to load your new model into car editor (launched via Steam)

STREAMING ASSETS

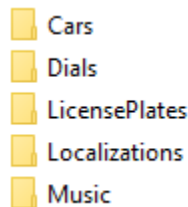
To get access to Streaming Assets:

1. Click right mouse button on steam icon on desktop and click on **Open file Location**
2. Find and open **steamapps** folder
3. Find and open **common** folder
4. Open **Car Mechanic Simulator 2018** folder
5. Find and open **cms2018_Data**
6. Find and open **Streaming Assets**

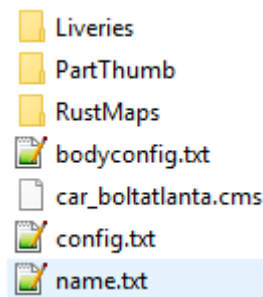
Or default steam path if you instal steam on disk C is:

C:\Program Files\steam\steamapps\common\Car Mechanic Simulator 2018\cms2018_Data\StreamingAssets

In Steaming Assets you can find five folders:



In **Cars** folder you can find following files such us:



CONFIGURATION FILES

To create or edit a configuration file you need software which allow you to edit .txt file (Microsoft Notepad is fine). There are three configuration files:

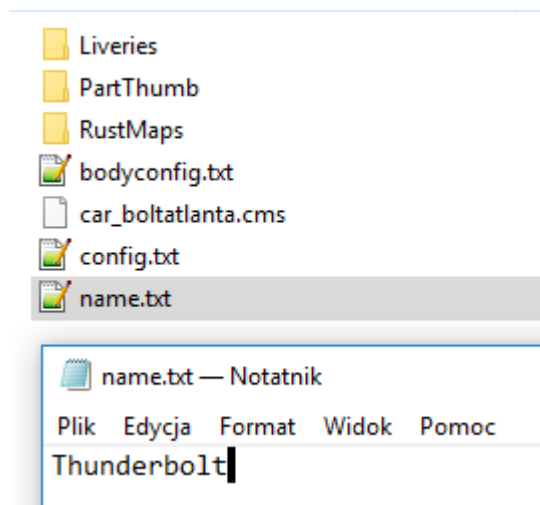
name.txt – Here you can change name of your vehicle

bodyconfig.txt – In this file you can find logic which is responsible for the disassembly of body parts.

config.txt – Here are all information saved from Game Editor (engine type/size etc. You can access the game editor in the steam game library)

Before making any changes remember to make backup of files you want to modify.

EDITING NAME.TXT (Example on Bolt Atlanta)



Car Informations



Current color

Factory color

Mileage

180000 KM

Global body condition

100 %

Global parts condition

100 %

V8 1carb OHV

291 HP @ 4550 rpm
528 N.m @ 3045 rpm

Power curve

Torque curve

Engine Value

10142 \$

Tuning Value

0%

Part name	Condition	Part name	Condition
Alternator	?	Battery	?
Bottom Suspension Arm	?	Bottom Suspension Arm	?
Brake Caliper	?	Brake Caliper	?
Brake Caliper Cylinder	?	Brake Caliper Cylinder	?
Brake Disc Ventilated	?	Brake Disc Ventilated	?
Brake Drum	?	Brake Drum	?
Brake Pads	?	Brake Pads	?
Brake Servo	?	Brake Shoe	?
Brake Shoe	?	Cam Gear (V8 OHV)	?
Camshaft (V8 OHV)	?	Carburetor (4-barrel)	?
Clip B	?	Clip B	?
Clutch Plate	?	Clutch Pressure Plate	?
Clutch Release Bearing	?	Crankshaft (V8 OHV)	?

Car Value

46640 \$

Restoration Bonus

14474 \$

Sell Car

EDITING BODYCONFIG.TXT

```
[unmount_with]  
door_front_left=mirror_left>window_door_front_left  
door_front_right=mirror_right>window_door_front_right  
bumper_front=license_plate_front  
bumper_rear=license_plate_rear
```

After [unmount_with] line you see name of each part of car body. From starting from left (before the sign of equality) you need to type part of car body which can be disassembly with other parts just as it can be happen in real life.

Let's analyze first case now :

Unmount left door (door_front_left) causing unmount also mirror(mirror_left) and window (window_door_front_left).

But be aware in some cars you cant take off for example bumper and licence plates in same time (because licence is not mounted on the bumper (examples below)). In this case do not type anything for these parts into bodyconfig.txt (no interactions).



EDITING CONFIG.TXT INSIDE GAME EDITOR

Editor Controls

W/S/A/D – Camera Movement

Hold Right Mouse Button and move mouse – Rotate Camera



Within the editor we can find the following bookmarks and buttons:

Save - Save all setting in the editor

Reload Car - Load car to state of current config file

Show body - Turn on / Turn off transparency shader

Show sky - Turn on / Turn off skybox inside editor

Change sky - Change skybox texture to another inside editor

Show lifter - Turn on / Turn off lifter

Auction Car – Random color and condition of car



Car Stripping – With this option you can check which parts you can disassemble/assemble



Explode Car – Open/Close (doors/hood/trunk). If for some reason some parts do not open in you car check name of your parts.



Sit Inside – Camera position inside car



Change Color – Change color/paint type and type of livery



All yours thumbnails you can find in StreamingAssets/Cars/Part Thumb.

Generate car – Generate car thumbnails (appears in list of orders and missions)

Generate thumbnails – Generate part thumbnails (appears inside shop)

Generate all car thumbs – Generate thumbnails for all cars. **Can take some time to complete)**

Generate all – Generate thumbnails for all thumbnails and cars. **Can take some time to complete)**

Main	
car_name	<input type="text" value="DC Typhoon"/>
suffix	<input type="text"/>
rust_mask	<input type="text" value="typhoon_rustmask.png"/>
model_name	<input type="text" value="model.fbx"/>
m_scale	Value: <input type="text" value="1.000"/>

Main – In this tab you can change name of car, assign name for rustmask, and scale model.

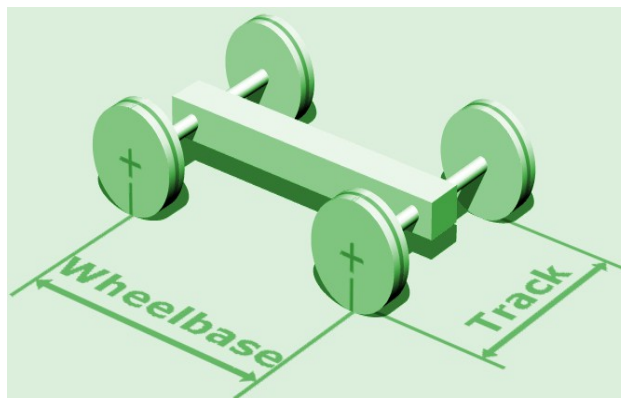
Suspension	
s_frontCenterSet	<input type="text" value="#FrontCenterOld1"/> ▼
s_frontLeftSet	<input type="text" value="#FrontRightDoubleWishbone3"/> ▼
s_frontRightSet	<input type="text" value="#FrontRightDoubleWishbone3"/> ▼
s_rearCenterSet	<input type="text" value="#RearCenterLeafPowered"/> ▼

Suspension - Here we can change type of front and rear suspension and ...

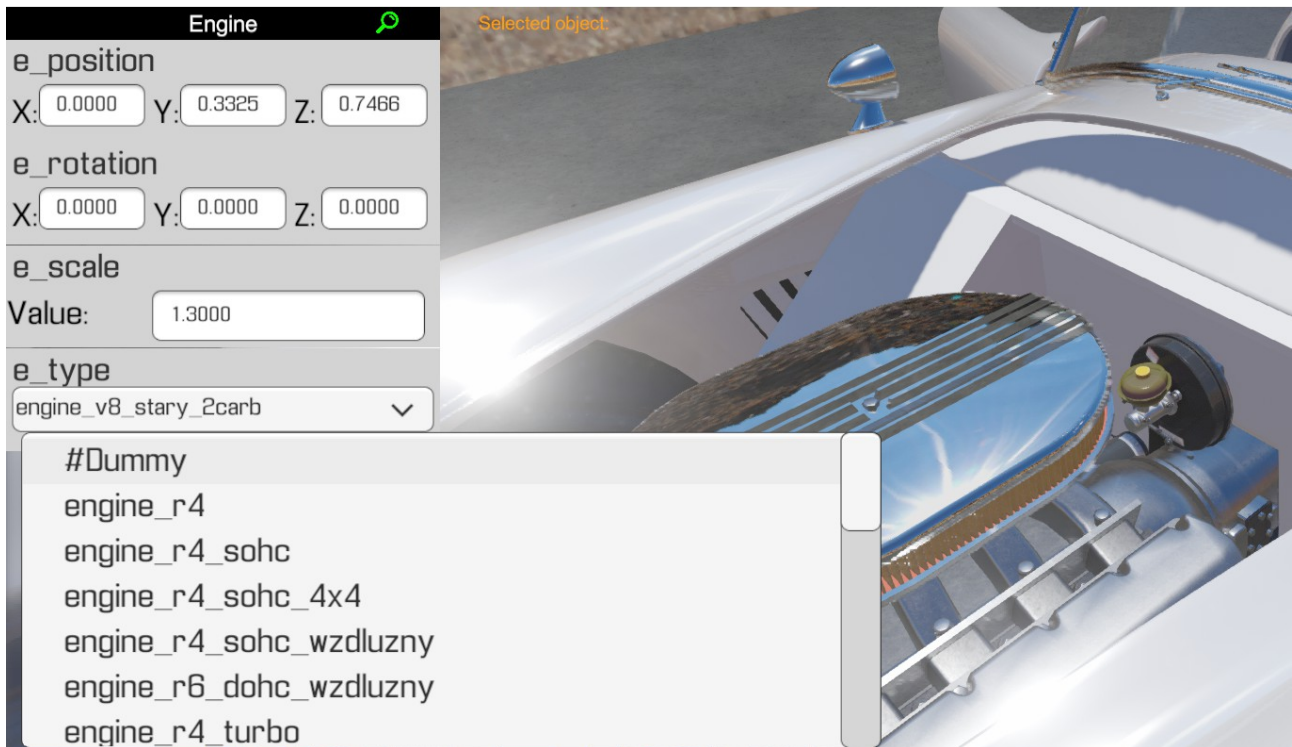
s_rearLeftSet	
#RearRightSolidDrumPowered	▼
s_rearRightSet	
#RearRightSolidDrumPowered	▼
s_frontAxleStart	
Value:	1.2630
s_wheelBase	
Value:	2.286
s_frontTrack	
Value:	1.4220
s_rearTrack	
Value:	1.4220
s_height	
Value:	0.0800
s_heightRear	
Value:	0.1000
s_frontSpringLength	
Value:	0.0000

Suspension - ... and change distance of front axle, wheelbase, front track, rear track, height of car, and height of the springs in the shock absorbers.

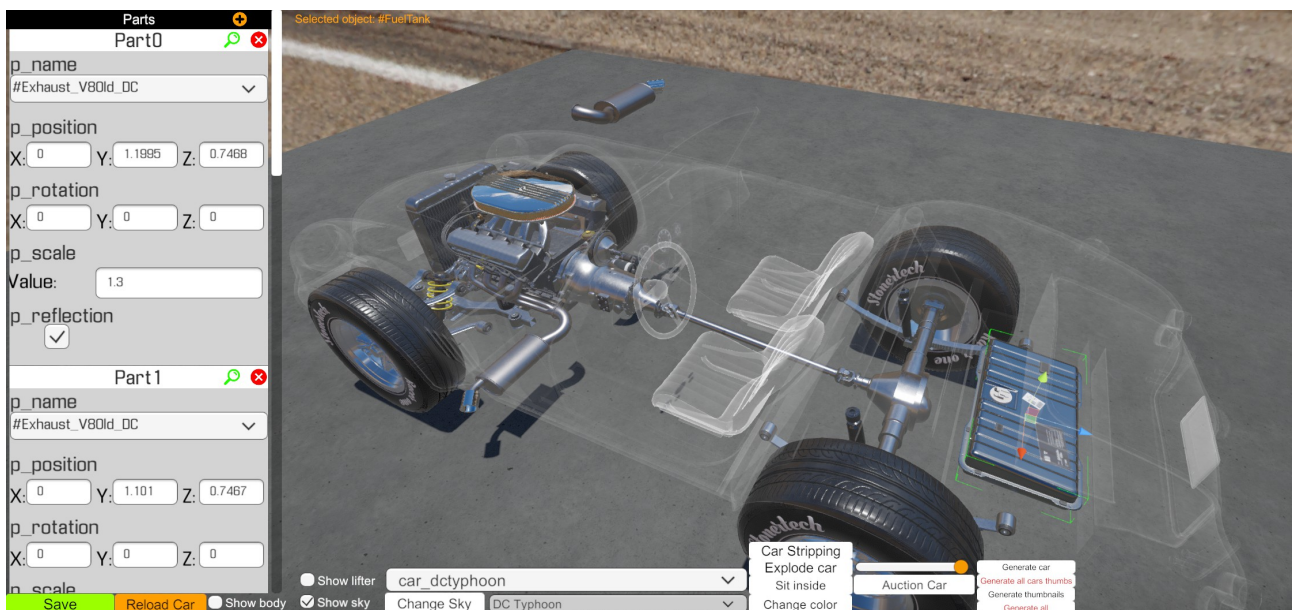
The most important parameters in this tab are : (Wheelbase, Front and Rear Track)



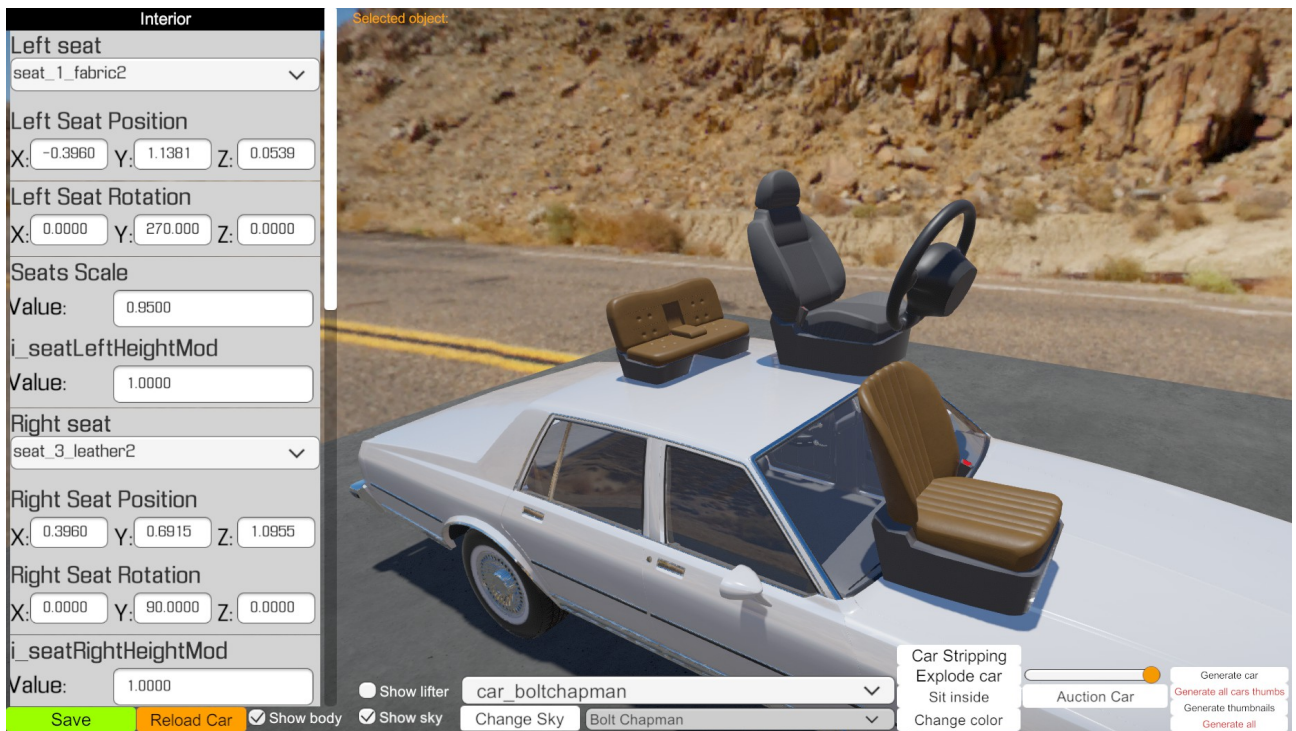
Wheelbase - Is the distance between the centers of the front and rear wheels. (<https://en.wikipedia.org/wiki/Wheelbase>). **Axle track** - In automobiles and other wheeled vehicles which have two or more wheels on an axle, is the distance between the centerline of two roadwheels on the same axle, each on the other side of the vehicle. (https://en.wikipedia.org/wiki/Axle_track).



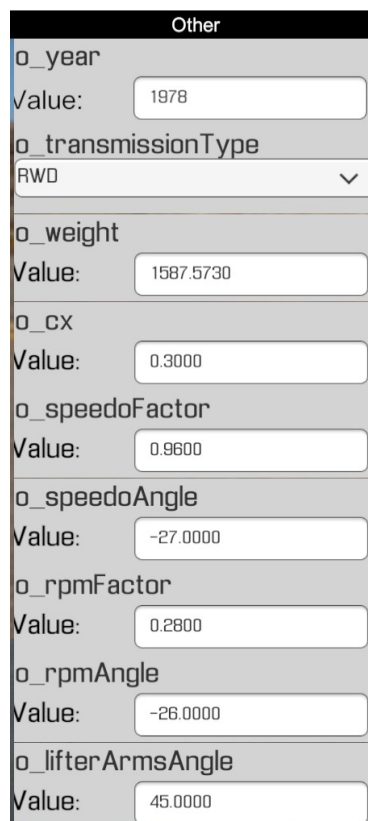
Engine – here we can change position, rotation, scale and engine type.



Parts – in this tab we can add different types of parts to our car. (like exhaust, fuel tank, battery, etc.)



Interior – in this tab you can change: size, rotation, position, and type of bench, seat, steering wheel and set height of the seats for your cars.



Other - In this tab the most important parameters are: (Transmission type, Lifter arms angle, Door angle).

Transmission type - In Car Mechanic Simulator 2018 we have 3 types of transmissions FWD (Front Wheel Drive), RWD (Rear Wheel Drive) and 4x4 (Four-wheel drive). Each of drive behaving differently on Test Track. (each of one have own advantages and disadvantages)

Lifter arms angle - When you modeling or editing models be aware some of model are shorter then other. Try to observe if lifter arms do not collide with for example wheels. If you have this situation decrease angle from 45 to lower values for example 20.

Door angle - Changes the angle of the opened door (by default 70).



Wheels – here we can change type and adjust size of rims and tires.

Driveshaft - here you can turn on driveshaft for car with Rear Wheel Drive and Four-wheel drive transmissions. In case if you want to make car with Front Wheel Drive, inside suspension tab you have also different types of transmissions for example Front Center Powered 2 (with driveshaft).

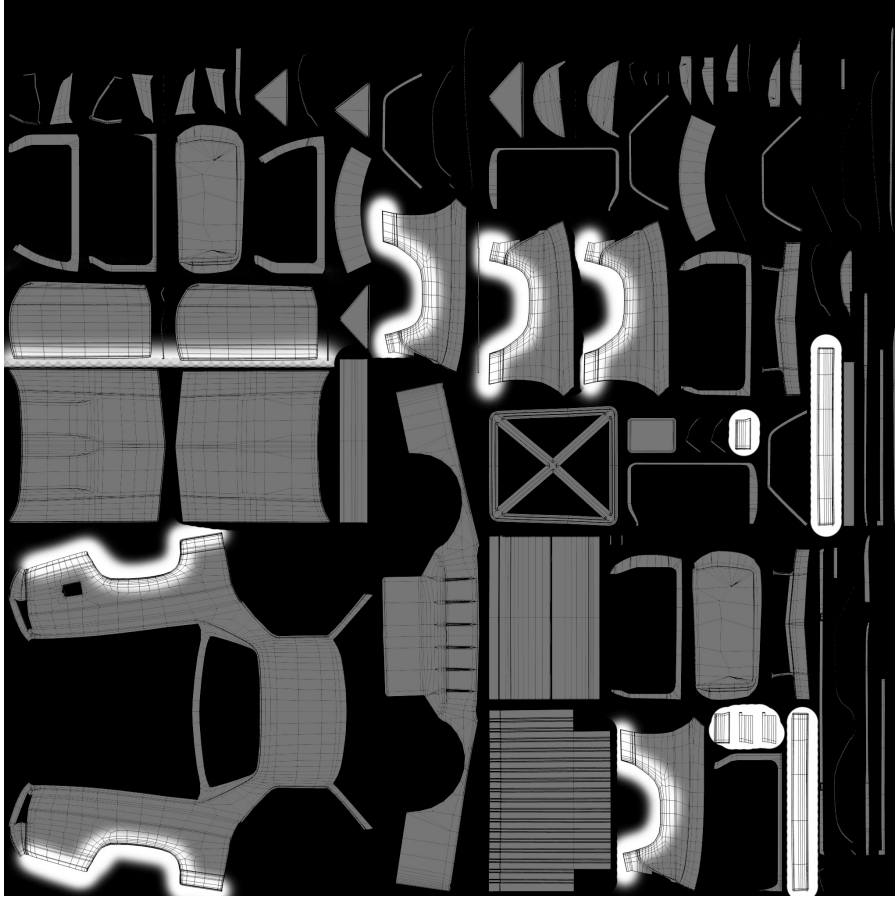
Tuning – here you can preview your car skins.



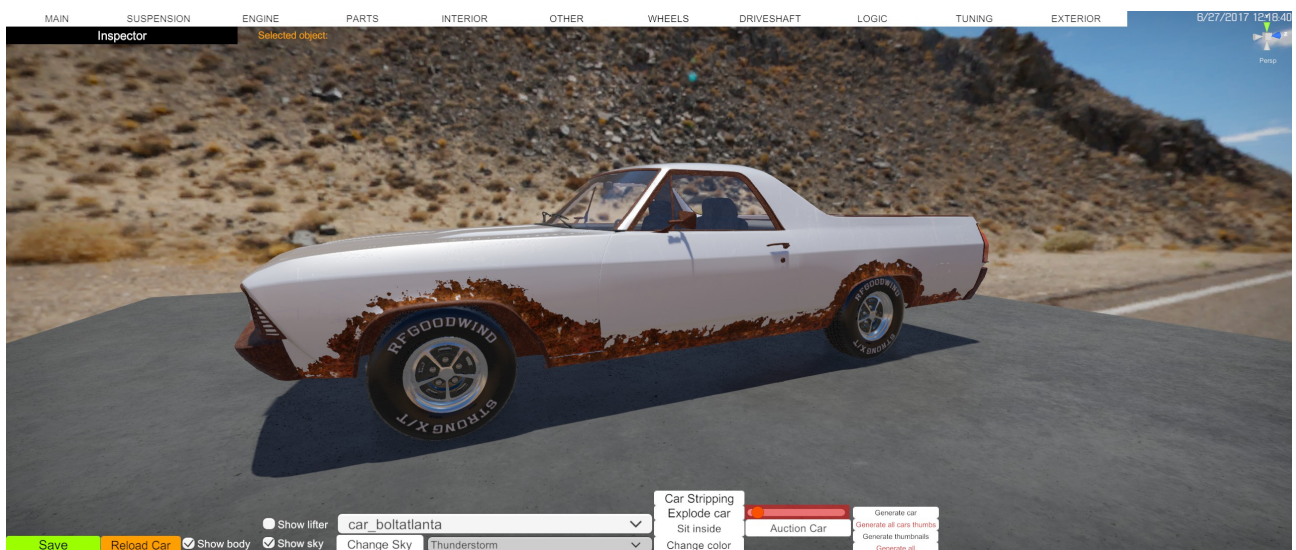
Exterior - in this shelf you can set licence plates on your car.

RUSTMASK

Car Mechanic Simulator 2018 has many advanced shaders. One of them is rust. Rustmask is kind of texture on which one by using black and white values, where material must be rusted. (white value on UV texture means place where rust is, black value = no rust in this area).



Example of rustmask of Bolt Atlanta



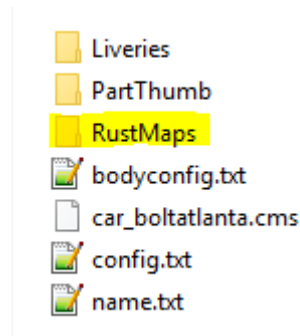
To visualize how rustmask looks like on your car, use slider inside Game Editor (highlighted on red) and move it from left(full rust) to right(clean).

Rustmask can be created using programs like:

- Substance Painter
- Mari
- Quixel Suite
- Adobe Photoshop
- Gimp
- Affinity Photo

Please note that with only a few materials can get a rusting effect:(body_paint,underbody2, underbody3, underbody4, body_chrome) To prevent errors, it is recommended to:

Make folder **RustMaps** inside your StreamingAssets/Cars/yourcar



In case when you do rustmask make sure its resolution is 2048 pixels (width) and 2048 pixels (height), save it in .png format and name it like bellow

nameofyourcar_rustmask.png

MUSIC



Inside MUSIC folder you can find music tracks which plays on the radio. Inside **User** folder you can put your own tracks. Default path (if you instal steam on default location)

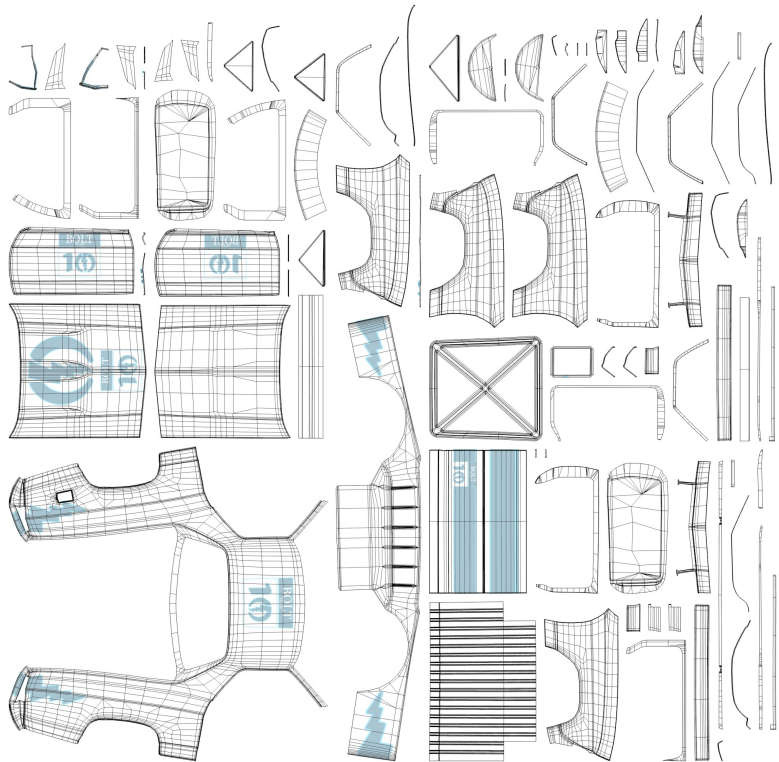
C:\Program Files\steam\steamapps\common\Car Mechanic Simulator
2018\cms2018_Data\StreamingAssets\Music

LIVERY

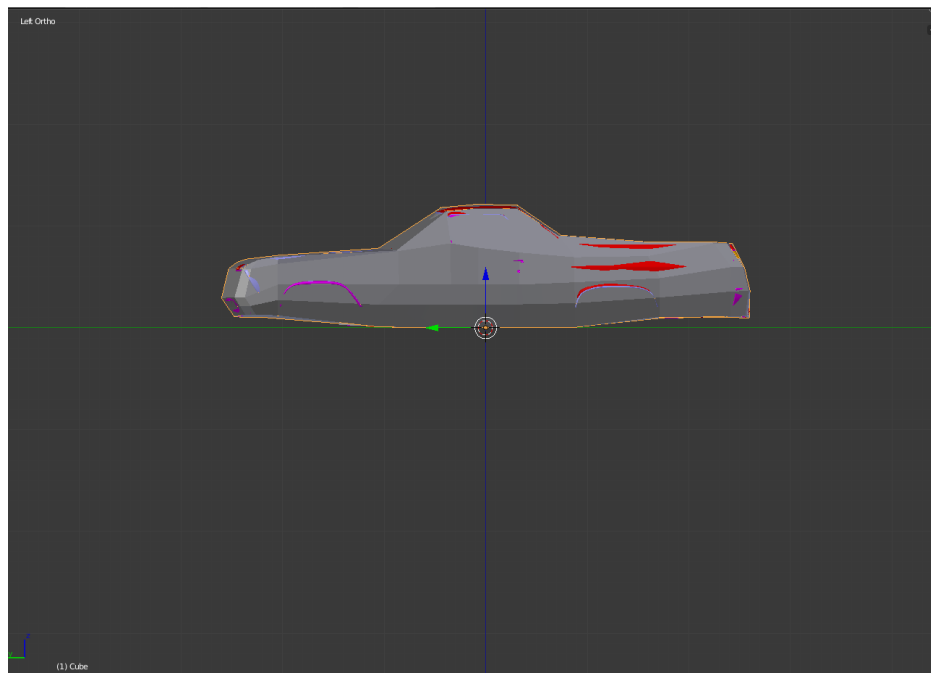
Skins for car can be created using programs like:

- Substance Painter
- Mari
- Quixel Suite
- Adobe Photoshop
- Gimp
- Affinity Photo

You can make your own skin for car by apply textures where UV parts are placed.



CAR COLIDER



Collider - components define the shape of an object for the purposes of physical collisions. A collider, which is invisible, need not be the exact same shape as the object's mesh and in fact, a rough approximation is often more efficient and indistinguishable in gameplay.

for more info check:

<https://docs.unity3d.com/Manual/CollidersOverview.html>

Dials

Inside Car Mechanic Simulator you can find 2 types of dials:

- 3D Dials inside car (speedometer and tachometer)
- 2D Dial (tachometer) in right bottom corner (appears for example in Race Track)

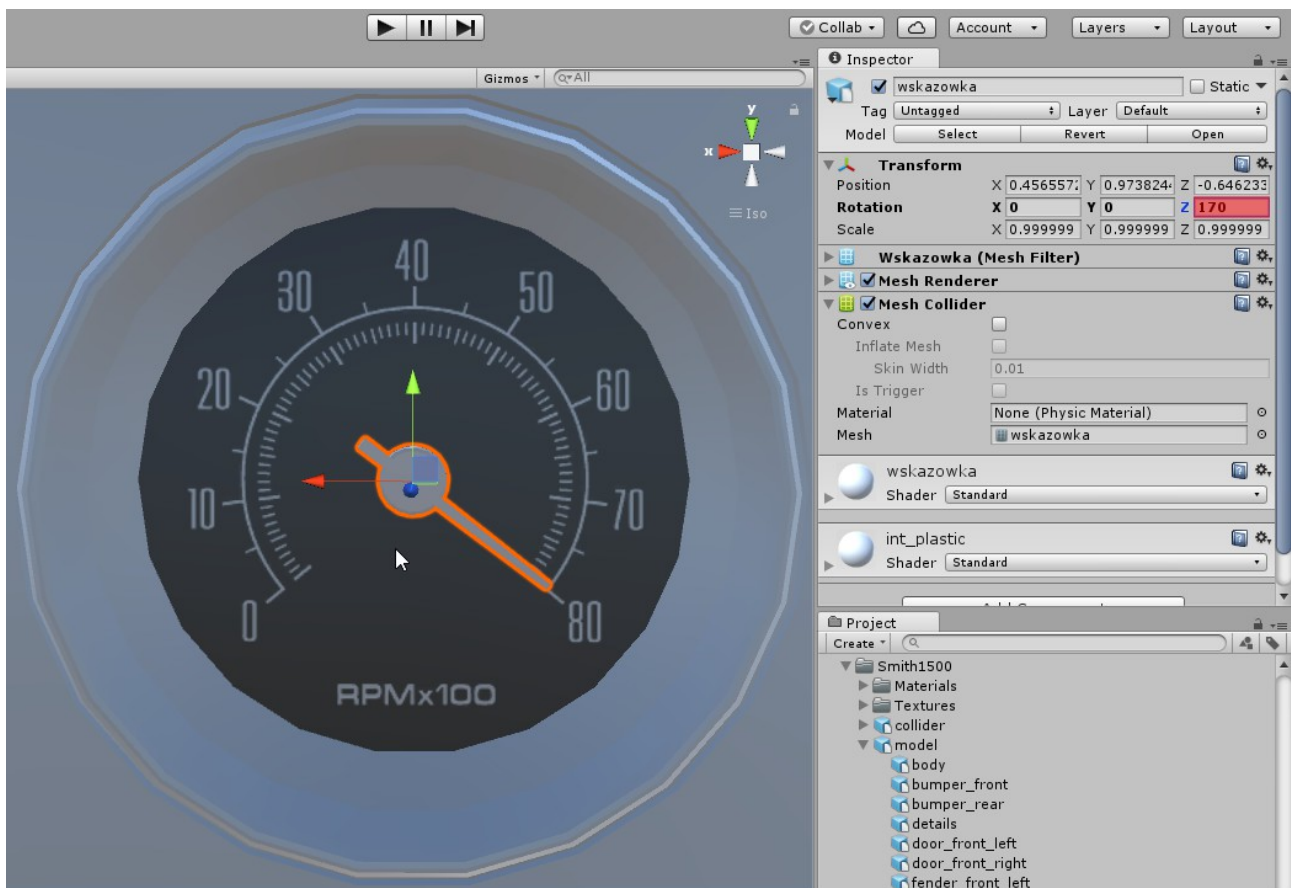


3D Dials

To edit 3D dials you must do two things. Firstly you must check rotation values of wskazowka(tachometer) and wskazowka2(speedometer) inside Unity. To set min and max range for example speedometer you must add few lines to config.txt.

```
[dials]
dialname=Licznik_Muscle_2
rpm_max=8000
rpm_max_angle=170
rpm_min_angle=-87.5
speed_max_angle=180
speed_max_kph=240
speed_min_angle=-90
```

dialname= folder dial name (examples of dials you can find inside csm2018_Data/StreamingAssets/Dials)

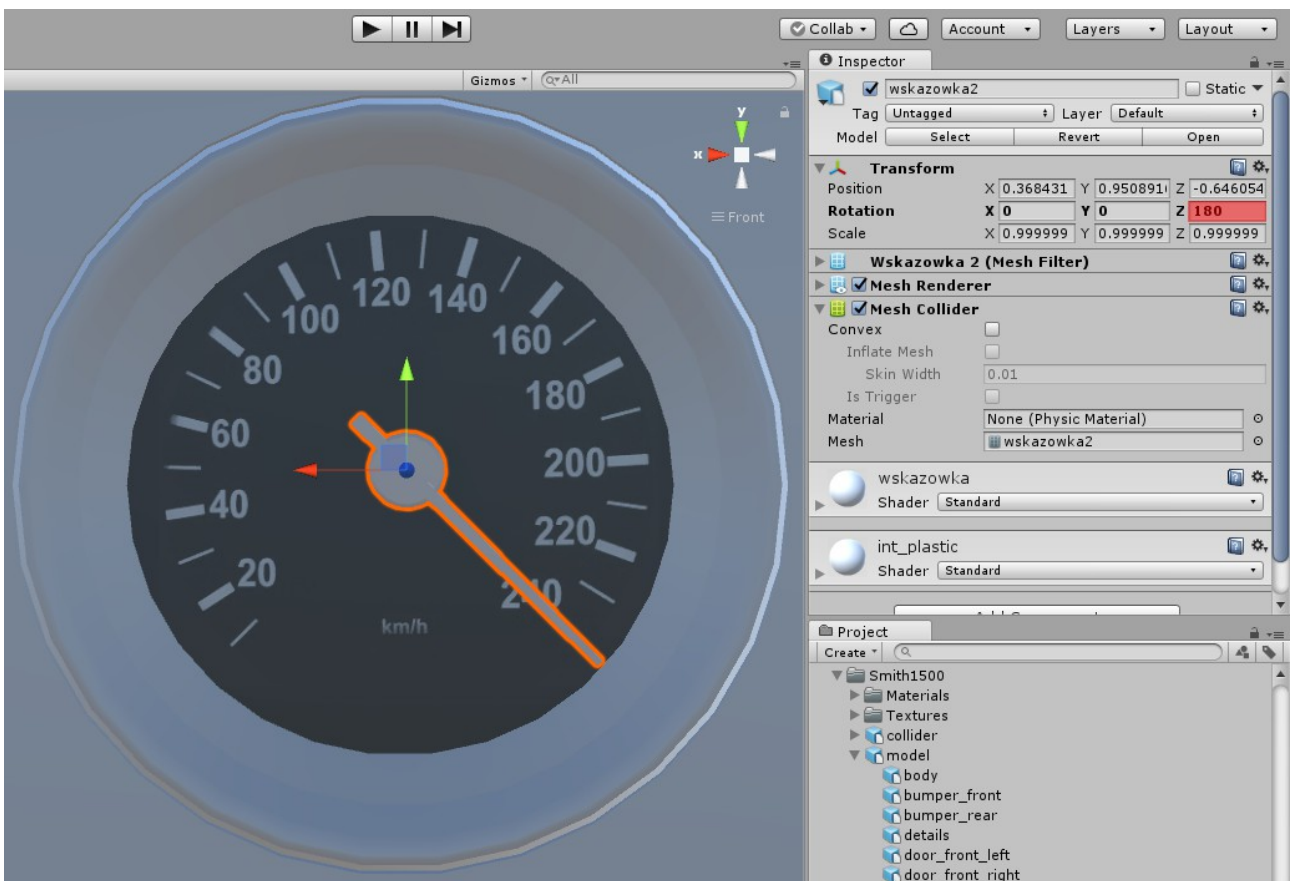


rpm_max= maximal rpm (on texture) in this case 8000

rpm_max_angle= maximal range of rpm in angles on texture in Z axis (highlighted in red)

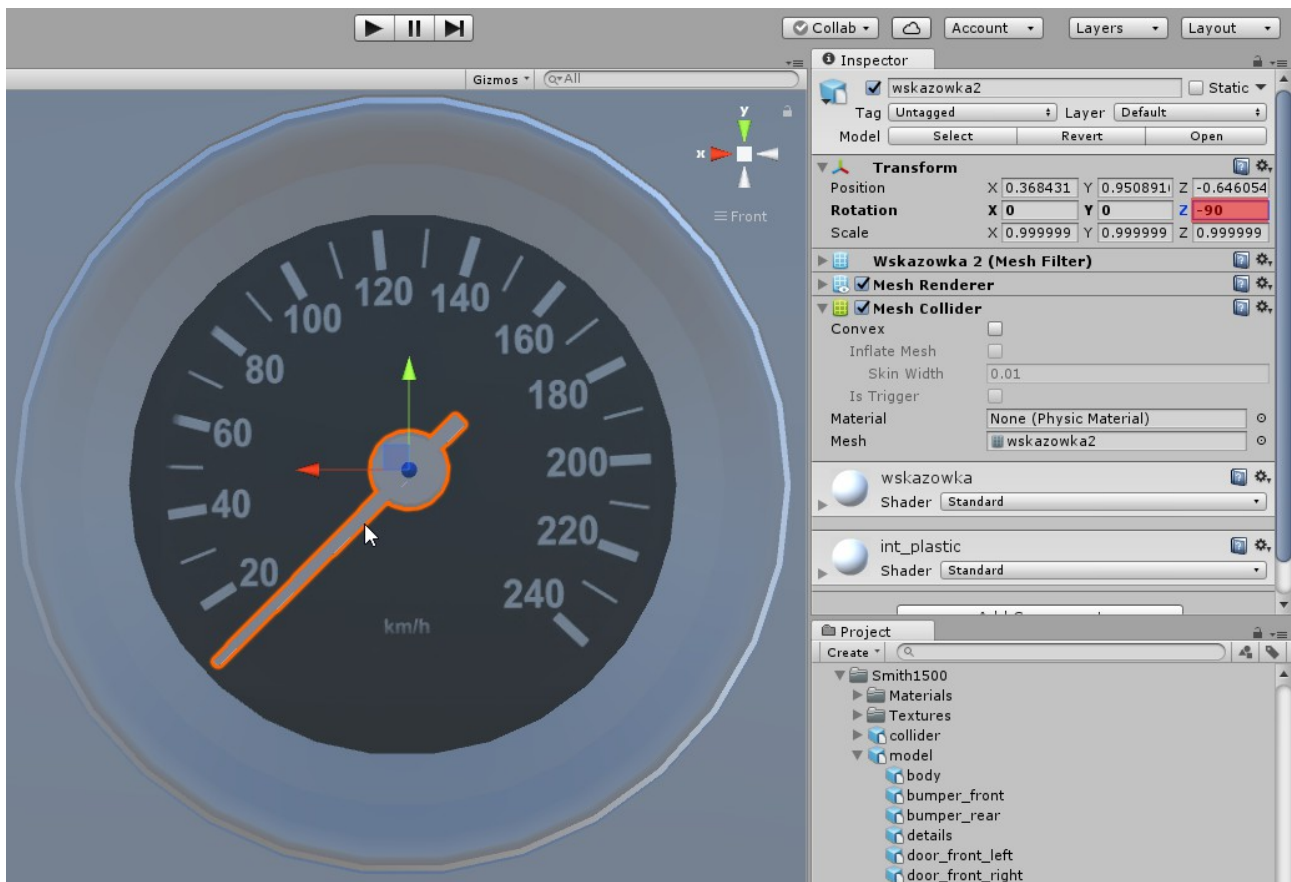


rpm_min_angle = minimal range of rpm in angles on texture in Z axis (highlighted in red)



speed_max_angle = maximal range of speed in angles on texture in Z axis (highlighted in red)

speed_max_kph = maximum value of kilometers on texture (in this case 240 km/h in case if you have texture in MPH divide value by 1.6)



speed_min_angle = minimum range of speed in angles on texture in Z axis (highlighted in red)