

# RetroRemakes

Micro  
Driver



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This document is part of a series of Clickteam Fusion 2.5 tutorials.  
To access the additional video, play the game, download fusion files and assets visit

<https://impactgamers.net/retro/micro>



Based on Codemasters 1991/94 smash "Micro Machines" (1 & 2) in this remake we'll look at replicating some of the great aspects this console game had to offer.

## MAIN GAME MECHANICS

Above view racing  
Scrolling screen view  
Obstacles, Checkpoints  
Computer Opponents

## ESSENTIAL FUSION FEATURES

Qualifier Groups, Alterable Values  
Count, Insert Condition, Cloning



REUSABLE SKILL  
When a skill is first  
described



REUSABLE SKILL  
When a skill reused



DOWNLOADS  
Use files from the  
website download



BUG  
When there is an  
error in the game

# 01

# Micro Driver Contents

## SECTIONS

### A) Driving & Obstacles [1:08]

- A1) Setup
- A2) Player's car
- A3) Obstacles
- A4) Scrolling and track

### B) Opponents and Checkpoints [13:41]

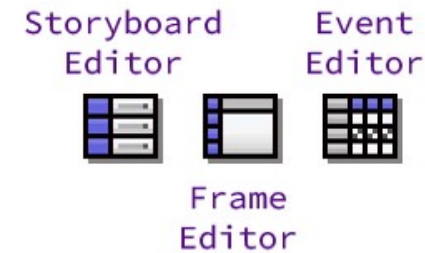
- B1) Opponents
- B2) Add Checkpoints
- B3) CPU driving (difficult section)
- B4) Respawning

### C) Layers [34:50]

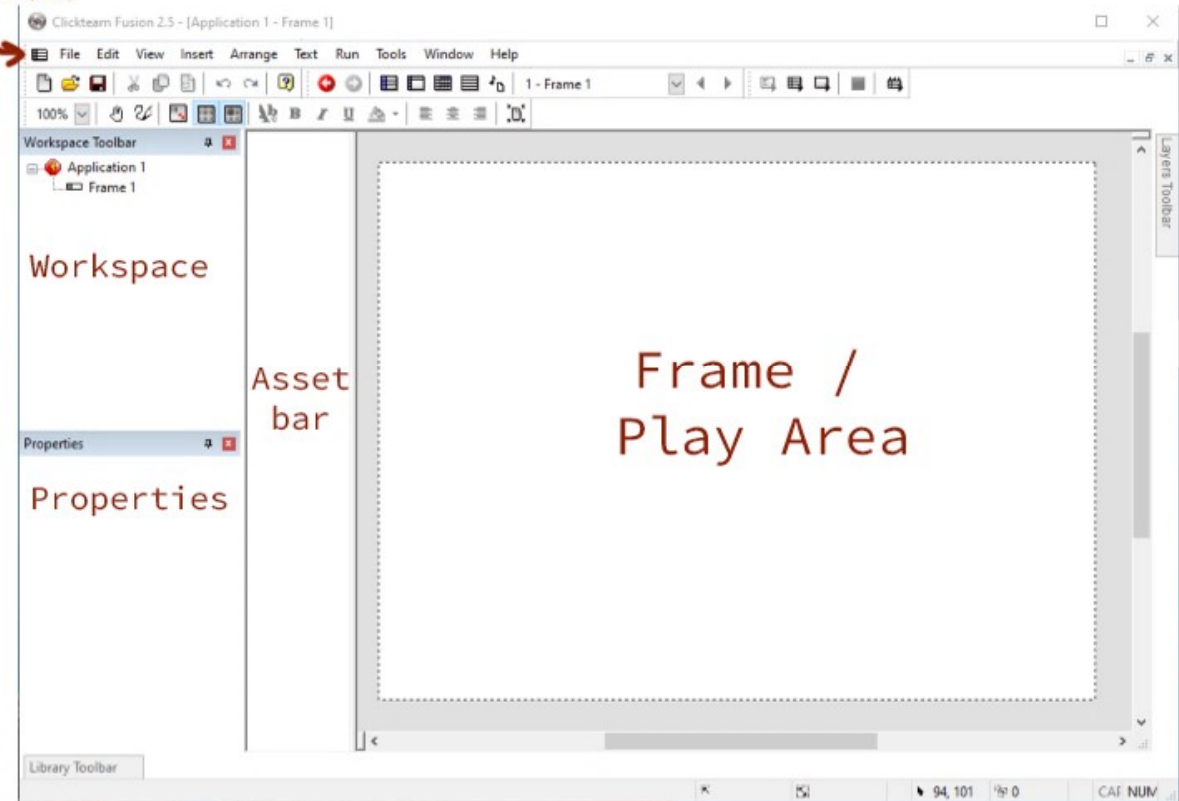
- C1) Laps and Timer
- C2) Floor
- C3) Game Information

### D) Optional [45:17]

- D1) Losing control
- D2) Skidmarks
- D3) Music



Top menu



# Micro Driver A1) Set Up

Load up Clickteam Fusion 2.5

From the top menu select 'File' > 'New Application'

You are now in the 'Storyboard Editor'



[Reusable Skill - Save your game]

From the top menu select 'File' > 'Save' (name your file if it's unnamed)

[End Skill]

Select the application from the top of the Workspace Toolbar to load its Properties

From the Properties window select the 'Window' category

Click and type in the 'Size' "960" x "560" and press Enter

When prompted about changing the frame sizes also, click 'Yes'

Click on the blank white preview of Frame 1 to select it

In the Frame 1 Properties Windows 'Settings' category change the 'Background Color' to grey or similar

Click on the number '1' on the first frame preview or the Frame Editor logo to enter the "FRAME EDITOR"

## Micro Driver A2) Player's car 1/2



[Reusable Skill - Inserting an Object]

From the top bar click 'Insert' > 'New Object'

Click on Active (Available from 'All Objects' or 'Graphics and Animation' category)

Click 'OK'

Click on the frame to drop your object

[End Skill]



[Reusable Skill - Importing Artwork]

Right-Click on the Object and click 'Edit' for Image Editor



Find and select the image 'car p1.png' and click 'OK'

Click 'OK'

[END]



[Reusable Skill - Rename]

With the object selected from the Properties window select the 'About' category

Click on the current name and type in "p1"

Press Enter to accept your new name

[End Skill]

## Micro Driver A2) Player's car 2/2



[Reusable Skill - Select a Movement]

With the object selected from the Properties window select the 'Movement' category

Click on "Static" next to 'Type' and select "Physics - Race Car Movement"  
[End Skill]

If alerts about Physics Engines or Hotspots appear just press 'OK'

In the 'Properties window' under the 'Movement' category > Set 'Speed' to "80"  
(This is your maximum speed) and Set Elasticity > "33" (% amount you bounce).



[Insert an Object] Insert a Physics Engine object and place it outside the left side of the frame



[Reusable skill - Test]

From the top menu click 'Run' > 'Frame' (Or 'Application', as there is only one frame)

If the window is still open after you have tested your code, close it,  
otherwise it will restrict your work in the 'Frame Editor'  
[End]

Use the arrow/cursor keys to control the cars movement, UP-accelerate,  
DOWN-break, LEFT/RIGHT steering

## Micro Driver A3) Obstacles 1/2



[Insert an Object] Insert an "Active" object into the frame

[Import Artwork] 'obstacle post.png'

[Rename] "Post"



[Insert an Object] Insert an "Active" object into the frame

[Import Artwork] 'obstacle fork.png'

[Rename] "Fork"



[Insert an Object] Insert an "Active" object into the frame

[Import Artwork] 'obstacle knife.png'

[Rename] "Knife"



[Insert an Object] Insert an "Active" object into the frame

[Import Artwork] 'obstacle pot.png'

[Rename] "Pot"



Select all the new obstacles you added



[Reusable skill - Select Multiple Objects]

Hold 'Shift' on the keyboard and click on all the objects you want to select/deselect, clicking without holding 'Shift' will cancel your selection

[End]



[Reusable skill - Add to a Qualifier Group]

In the 'Properties Window' select the 'Events' category

Click in the blank space next to Qualifier(s) > click 'Edit' > click 'Add' > Choose 'Obstacle' > click 'OK' > click 'OK' [End]

## Micro Driver A3) Obstacles 2/2

Click on the 'Event Editor' icon to go to the EVENT EDITOR

Click on 'New Condition' > 'Storyboard Controls' > 'Start of Frame'

Add an action by right-clicking under the 'Group.Obstacle' column on the line of the condition you just made.

Choose 'Animation' > 'Paste image into background' >  
Select 'Obstacle' > click 'OK'

Click on 'New Condition' > 'p1' (Player's car) > 'Collision' > 'With backdrop'

Add an action by right-clicking under the 'p1' column on the line of the condition you just made.

Choose 'Movement' > 'Stop'

[Test]



## Micro Driver A4) Scrolling and track 1/2

Click on the 'Frame Editor' icon to go to the FRAME EDITOR

We are going to expand our frame area

Click on 'Frame 1' in the 'Workspace Toolbar'

In the 'Properties Window' under the 'Settings' change the Size to "4000" x "2500"

Click on the 'Event Editor' icon to go to the EVENT EDITOR

Click on 'New Condition' > 'Special' (Cogs) > 'Always'

Add an action by right-clicking under the 'Storyboard Controls' (Chess board) column on the line of the condition you just made.

Click 'Scrollings' > 'Centre window position in frame' > 'Relative to' > 'p1' (Player's Car)

[Test]



## Micro Driver A4) Scrolling and track 2/2

Click on the 'Frame Editor' icon to go to the FRAME EDITOR



We are going to add the table for racing on  
[Insert an Object] Insert an "Active" object into the frame  
[Import Artwork] 'table.png'  
[Rename] "Table"



[Insert an Object] Insert an "Active" object into the frame  
[Import Artwork] 'bridge.png'  
[Rename] "Bridge horz" (for horizontal, we'll be making a vertical version later)



[Multiple Select Objects] Select the 'Table' and 'Bridge horz' objects  
[Add to a Qualifier Group] Add to the 'Area' group



[Reusable Skill - Clone]  
Right-click on 'Bridge Horz' and click 'Clone', leave the settings as 'rows:1, columns:2' and click 'OK'  
[End]

This new cloned object is identical but with different name i.e. 'Bridge Horz 2'



Right click on 'Bridge Horz 2' and click 'Edit', click on the Rotate 90 tool and click 'OK'  
[Rename] to 'Bridge Vert'

From the 'Asset toolbar' add in objects to make a track.

!Tip! Use the Grid setup, Zoom 25% and the Tools>Arrange functions to help you build the course

# Micro Driver B1) Opponents 1/2



[Insert an Object] Insert an Active Object (In category 'All Objects' and 'Graphics and Animation')  
[Import Artwork] "car cpu2.png" (make sure Hotspot & Action Point are set to center)



Still in the Image 'Edit' window select the 'Animation' 'Falling'  
[Import Artwork] "respawning\_01.png" and select 'Import as Animation'  
Click 'OK' to return to the Frame Editor



[Rename] 'cpu 2' (CPU is how retro games named the computer opponents)



[Select a Movement] 'Type' > 'Physics - Bouncing Ball movement'  
Initial Direction: Reset and only tick direction 0 (right)  
Set Elasticity: 35  
Set Gravity Scale: 0  
Set Initial Speed: 0  
Set Collision Shape: 'First Image'



[Clone] Clone the 'cpu 2' car, with options "Rows 1, Columns 3"



For objects 'cpu 3' and 'cpu 4' [Import Artwork] "car cpu3.png" and "car cpu4.png"

We are going to place multiple objects into Qualifier Groups



[Select multiple objects] Select 'p1', 'cpu 2', 'cpu 3' and 'cpu 4'  
[Add to a Qualifier Group] 'Vehicles'



[Select multiple objects] Select just 'cpu 2', 'cpu 3' and 'cpu 4'  
[Add to a Qualifier Group] 'NPC' (non-playerable characters)

## Micro Driver B1) Opponents 2/2

Click on the 'Event Editor' icon to go to the EVENT EDITOR

Right click on the 'p1' car icon on the top row and select 'Replace by another object'  
Chose the 'Group.Vehicles' and click 'OK'

When the warning appears saying 'This action cannot be undone. Do you want to continue' click 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Collision' > 'With another object' > 'Group.Vehicles' > 'OK'

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made.

Choose 'Movement' > 'Stop'

To check when the cars are not on the table we need to run a count (special looping through each instance of an object)

On the 'Always' row, under the 'Group.Vehicles' right-click to add an action  
'Count' > 'For each object' and set the name to "falling" (include the double quotation marks) > 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Loops' > 'On each object' > "falling" > 'OK'

Right-click on the words in the new conditon 'On each one of' and click 'Insert'  
'Group.Vehicles' > 'Collisions' > 'Overlapping an object' > 'Group.Areas' (The table) > 'OK'  
Right-click on the words "Is overlapping" and chose 'Negate' to make a X appear

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made. Choose 'Destroy' [Test] & [Save]



# Micro Driver B2) Add Checkpoints

Click on the 'Frame Editor' icon to go back to the FRAME EDITOR



[Insert an Object] Insert an 'Active' object  
[Rename] 'Checkpoint'

Right-click on the 'Checkpoint' object and click 'Edit' for the Image Edit screen.

Click on white piece of paper logo to 'Clear' the image

Pick a bright colour and using the 'Elipise Tool' (E) with 'Filled' option

Drag out a circle filling the available space

Click 'OK'

Click on the 'Checkpoint' object and wait before clicking again until the resize boxes appear.

Stretch the object to be large, just over half the height of the frame.

Drag and position the 'Checkpoint' object behind the cars.

In the 'Properties Window' under the 'Display Options' category  
set the Blend Coefficient: 200

From the Asset bar, drag and drop checkpoints all around the track in reverse order,  
try not to get them to overlap much.

## Micro Driver B3) CPU driving 1/3

In the 'Properties Window' for the 'Checkpoint' in the 'Values' category  
Click 'New' and double-click on the title 'Alterable Value A' and change it's name to 'Number'

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

On the row 'Start of Frame' right-click under the 'Checkpoint' column.

'Alterable Values' > 'Spread Value' > 1 > OK (This will count up from 1 setting the 'Number' value as it goes)

Click on the 'Frame Editor' icon to go back to the FRAME EDITOR



[Select Multiple Objects] 'p1', 'cpu 2', 'cpu 3' & 'cpu 4'

In the 'Properties Window' in the 'Values' category we are going to add some new alterable values, name them and set a value

Under 'Alterable Values' click 'New', then double-click the name to rename,  
and click on the 0 to set the value

Alterable Value A > going to: 1

Alterable Value B > coming from: 1

Alterable Value C > laps: 0

Alterable Value D > normal speed: 0

Alterable Value E > control: 0

Alterable Value F > last angle: 0

For each cpu car individually set the 'normal speed' alterable value between 50 and 80

## Micro Driver B3) CPU driving 2/3

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

Click on 'New Condition' > 'The Timer' > 'Every' > 0 :Hours, 0 :Minutes, 0 :Seconds, 1 :1/100th Sec > 'OK'

Add an action by right-clicking under the 'Group.NPC' column on the line of the condition you just made.

Choose 'Count' > 'For each object' > "aim" (include the double quotation marks) > 'OK'

Click on 'New Condition' > 'Group.NPC' > 'Loops' > 'On each object' > "aim" > 'OK'

Right-click on the words in the new condition 'On each one of' and click 'Insert' 'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' 'equal to' and change 0 to going to("Group.NPC")

Add an action by right-clicking under the 'Group.NPC' column on the line of the condition you just made.

Choose 'Direction' > 'Look in direction of' > 'Relative to' > 'Checkpoint' > 'OK'

Add another action by right-clicking under the 'Group.NPC' column on the action tick you just added

Choose 'Movement' > 'Physics' > 'Set Linear Velocity' > normal speed("Group.NPC") > 'OK' > angle("Group.NPC") > 'OK'

## Micro Driver B3) CPU driving 3/3

Click on 'New Condition' > 'Group.Vehicles' > 'Collision' > 'With another object' > 'Checkpoint' > 'OK'

Right-click on the words in the condition 'Collision between' and chose 'Insert  
'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' 'equal to' and change 0 to going to("Group.Vehicles")

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made.

Choose 'Alterable values' > 'Set' > Change value selected to 'Coming from' where the value 0 is change this to going to("Group.Vehicles") > click 'OK'

Add another action by right-clicking under the 'Group.Vehicles' column on the action tick you just added

Choose 'Alterable values' > 'Add to' > 'Going to' and change the value to 1 > 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Alterable Values' >  
'Compare to one of the alterable values' >  
'Going to' is 'Greater than' NObjects("checkpoint") >  
'OK'

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made.

Choose 'Alterable values' > 'Add to' > 'Laps' and change the value to 1 > 'OK'

Add another action to 'Group.Vehicles' on top on the previous one

Choose 'Alterable values' > Set' > 'Going to' and change the value to 1 > 'OK'

[Test] Reposition obstables or checkpoints to mkae things work well [Test] again [Save]



## Micro Driver B4) Respawning 1/3

Click on the 'Frame Editor' icon to go back to the FRAME EDITOR

[Select Multiple Objects] 'p1', 'cpu 2', 'cpu 3' & 'cpu 4'

In the 'Properties Window' in the 'Values' category we are going to add a new flag

Under 'Flags', Click 'New', then double-click the name to rename and call it "respawn"

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

Find the line/row for condition 'X "Group.Vehicles" is overlapping "Group.Area"

On that row right-click on the action tick under the Group.Vehicles column ('Destroy')  
'Delete' that action tick

Right-click on the same square to add a new action

'Flag' > 'Set on' > 'respawn' > 'OK'

## Micro Driver B4) Respawnning 2/3

Click on 'New Condition' > 'Group.Vehicles' > 'Collision' > 'With another object' > 'Checkpoint' > 'OK'

Right-click on the words in the conditon 'Collision between' and chose 'Insert' 'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' 'Different' and change 0 to going to("Group.Vehicles")

Again right-click on the words in the conditon 'Collision between' and chose 'Insert' 'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' 'Different' and change 0 to coming from("Group.Vehicles")

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made.

'Flag' > 'Set on' > 'respawn' > 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Alterable Values' > 'Flags' > 'is flag on' > 'respawn' > 'OK'

Add an action by right-clicking under the 'Group.Vehicles' column on that line

'Movement' > 'Set speed' > 0 > 'OK'

Add another action to that square for 'Group.Vehicles'

'Animation' > 'Change Animation Sequence' > 'Falling' > 'OK'

## Micro Driver B4) Respawning 3/3

Click on 'New Condition' > 'Group.Vehicles' > 'Animation' > 'Has an animation finished' > 'Falling' > 'OK'

Right-click on the words in the condition 'animation Falling is over' and chose 'Insert' > 'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' > 'equal to' and change 0 to coming from("Group.Vehicles")

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made.

'Position' > 'Select position' > 'Relative to' > 'Checkpoint' > 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Animation' > 'Has an animation finished' > 'Falling' > 'OK'

Right-click on the words in the condition 'animation Falling is over' and chose 'Insert' > 'Checkpoint' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Number' > 'equal to' and change 0 to going to("Group.Vehicles")

'Direction' > 'Look in direction of' > 'Relative to' > 'Checkpoint' > 'OK'

On the same action, right-click to add another action  
'Animation' > 'Change' > 'Animation sequence' > 'Stopped' > 'OK'

Finally on the same action, right-click to add a third action  
'Flags' > 'Set off' > 'Respawn' > 'OK'

[Test] Move any checkpoints that are causing issues

In the 'Workspace Toolbar' or the 'Assets bar' click on the 'Checkpoint' icon  
In the 'Properties' 'Display Options' category uncheck 'Visible at start' [Save]



# Micro Driver C1) Laps and Timer 1/2

Click on the 'Frame Editor' icon to go to the FRAME EDITOR

We are going to add some counters to the game, one for laps another for time.

Open the 'Layers Toolbar' by clicking on the Layers Toolbar tab on the right hand side of the frame.

!Tip! If the Layer Toolbar is not available reactivate it from the top menu  
'View' > 'Toobars' > 'Layer' (or press Control+K)

Click the white piece of paper to create a new layer.

Uncheck the eye logo on layer 1, so that layer is hidden.

With Layer 2 selected, In the 'Properties Window' change the X and Y coefficient to 0  
(This means this layer will scroll at 0%, so not scroll at all)  
You can also rename the Layer to "HUD" (heads up display) or "GUI" (graphical user interface)

[Insert an object] Insert a 'String' object to the top left

In the 'Properties Window' in the 'Settings' category change the 'Paragraph' to have the value "Time"

In the 'Properties Window' in the 'Text Options' category change the 'Font' to the font and size you want

[Rename] "Title Time"

[Clone] This string and move it below

In the 'Properties Window' in the 'Settings' category

change the 'Paragraph' to have the value "laps"

[Rename] "Title Laps"

## Micro Driver C1) Laps and Timer 2/2



[Insert an object] Insert a 'Counter' object under 'Title Time'

In the 'Properties Window' in the 'Settings' category change the 'Type' to 'Numbers'



In the 'Properties Window' in the 'Text Options' category change the 'Font' to the font and size you want

[Rename] "Time"



[Clone] This counter and move it below 'Title Laps'

[Rename] "Laps"

On the 'Layers Toolbar' select Layer 1 (The Game) and click the Lock icon on Layer 2 (HUD/GUI) to stop it from being edited

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

Find the condition 'Every 00"-01' (Every 1/100th second)

On that row under the 'Timer' counter column, right-click and add the action 'Add to counter' > and change the value to 1 > 'OK'

Find the condition 'Always'

On that row under the 'Laps' counter column, right-click and add the action 'Set counter' > and change the value to laps("p1") > 'OK'

## Micro Driver C2) Floor

Click on the 'Frame Editor' icon to go to the FRAME EDITOR

Open the 'Layers Toolbar' by clicking on the Layers Toolbar tab on the right hand side of the frame.

Click the white piece of paper to create a new layer.

Click and drag this new layer (3) under all the other layers (1)

With the new layer (1) selected, In the 'Properties Window' change the X and Y coefficient to 0.7  
(This means this layer will scroll at 70%, so not as quickly as the game layer)

You can also rename the Layer to "Floor"



[Insert an object] Insert a 'Quick Backdrop' object (Not 'Backdrop') to the top left



In the 'Properties Window' in the 'Settings' category change the 'Type' to 'Motif'

In the 'Properties Window' in the 'Settings' category under 'Motif' click 'Edit'



[Importing Artwork] Import the image "bg floor.png"

[Rename] "Floor"

In the 'Properties Window' in the 'Size/Position' category change the values

X: 0

Y: 0

Width: 4000

Height 2500



[Test]

It should now fill the layer and when in game move slower than the other layers

This different speed makes it seem to be at a different depth, this is called parallaxing

## Micro Driver C3) Game Information 1/3

Still in the FRAME EDITOR

Open the 'Layers Toolbar' by clicking on the Layers Toolbar tab on the right hand side of the frame.

Click the on the top layer (3) with the Timer and Laps

Uncheck the lock icon to unlock it



[Insert an object] Insert a 'String' object to the center of the screen boundary

In the 'Properties Window' in the 'Settings' category change the 'Paragraph' to have the value "GET READY"

In the 'Properties Window' in the 'Text Options' category change the 'Font' the font and size you want and align it to 'Center'



[Rename] "Info"

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

Click on 'New Condition' > 'Info' (The String you just added) > 'Visibility' > 'If "Info" is visible'

Add an action by right-clicking under the 'Player 1' (Joystick icon) column on the line of the condition you just made.

'Player Controls' > 'Ignore Controls'

On the same line add an action by right-clicking under the 'Group.Vehicles' column

'Movement' > 'Set Speed' > 0 > 'OK'

## Micro Driver C3) Game Information 2/3

Now for when it's invisible

Click on 'New Condition' > 'Info' > 'Visibility' > 'If "Info" is invisible'

Add an action by right-clicking under the 'Player 1' (Joystick icon) column on the line of the condition you just made.

'Player Controls' > 'Restore Controls'



[Test]

!Bug! The timer starts before the race begins, and the other cars have changed their directions

Find the condition 'Every 00"-01' (Every 1/100th second)

Right-click on the words and chose 'Insert'

'Info' > 'Visibility' > 'If "Info" is invisible'



[Test] The events work well, now we need to countdown to the start of the race

Click on 'New Condition' > 'The Timer' > 'Is the timer equal to a certain value' > 1 second (0 for all others)

Add an action by right-clicking under the 'Info' (String) column on the line of the condition you just made.

'Change alterable string' > "SET" (Leave in double quotation marks) > 'OK'

## Micro Driver C3) Game Information 3/3

Click on 'New Condition' > 'The Timer' > 'Is the timer equal to a certain value' > 2 seconds (0 for all others)  
Add an action by right-clicking under the 'Info' (String) column on the line of the condition you just made.  
'Change alterable string' > "GO!" (Leave in double quotation marks) > 'OK'

Click on 'New Condition' > 'The Timer' > 'Is the timer equal to a certain value' > 3 seconds (0 for all others)  
Add an action by right-clicking under the 'Info' (String) column on the line of the condition you just made.  
'Visibility' > 'Make Invisible' > 'OK'

Click on 'New Condition' > 'Group.Vehicles' > 'Alterable Values' > 'Compare to one of the alterable values'  
> 'Laps' 'Equal' 3 > 'OK'

Add an action by right-clicking under the 'Info' (String) column on the line of the condition you just made.

'Change alterable string' > OName("Group.Vehciles")+ " wins, press R to restart" (Leave in double quotation marks) > 'OK'

Add another action to the same action you just made

'Visibility' > 'Make Visible' > 'OK'

Click on 'New Condition' > 'The Mouse Pointer and Keyboard' > 'The Keyboard' > 'Upon pressing a key' > "r"

Add an action by right-clicking under the 'Storyboard Controls' (Chess board) column on the line of the condition you just made.

'Restart the application'



[Test] [Save]

# Micro Driver D1) Losing Control

Click on the 'Event Editor' icon to go back to the EVENT EDITOR

Find the line which has the condition 'Collision between "Group.Vehicles" and "Group.Vehicles"'

Right-click on the "Group.Vehicles" column on that line, ontop of the action tick that is already there  
'Alterable Values' > 'Add to' > 'Control' 13 (or any number between 10-20)

This is how long they will lose control for in 1/100ths of seconds after a collision

Find the line which has the condition 'Every 00"-01' (Every 1/100th second)

Right-click on the "Group.Vehicles" column on that line  
'Alterable Values' > 'Subtract' > 'Control' 1

This is for them to regain control

Click on 'New Condition' > 'Group.Vehicles' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Control' 'Lower' 0 > 'OK'

Add an action by right-clicking under the 'Group.Vehicles' column on the line of the condition you just made  
'Alterable Values' > 'Set' > 'Control' 0

Find the line which has the condition 'On each one of "Group.NPC", loop name "aim"'  
Right-click on the words "On each one of" and chose 'Insert'

'Group.Vehicles' > 'Alterable Values' > 'Compare to one of the alterable values' > 'Control' 'Lower or equal' 0 > 'OK'



[Test]

## Micro Driver D2) Skidmarks 1/3

Click on the 'Frame Editor' icon to go to the FRAME EDITOR



[Inserting an Object] Insert an 'Active' object above your frame

[Importing artwork] Import 'skid.png'

[Rename] 'skid'

We are going to expand the use of our falling count loop for the Group.Vehicles

Click on 'New Condition' > 'Group.Vehicles' > 'Loops' > 'On each object' > "falling" > 'OK'

Right-click on the words in the new condition 'On each one of' and click 'Insert'

'Special' (Cogs) > 'Compare two general values' >

In the top 'Enter expressions and choose the comparison method...' box write

```
Abs(Angle( "Group.Vehicles" ) - last angle( "Group.Vehicles" ))
```

Then select 'Greater' and in the bottom box put 20 > 'OK'

Again right-click on the words in the new condition

'On each one of' and click 'Insert'

'Special' (Cogs) > 'Compare two general values' >

In the top 'Enter expressions and choose the comparison method...' box write

```
Abs(Angle( "Group.Vehicles" ) - last angle( "Group.Vehicles" ))
```

Then select 'Lower' and in the bottom box put 90 > 'OK'

This abs function is giving us the positive value of the difference between the cars angle and the last angle variable

## Micro Driver D2) Skidmarks 2/3

On that line with the large condition you have made right-click under 'Create new objects' (Shiny box) column  
'Create object' > 'skid' > 'OK' > 'Relative to' > 'Group.Vehicles'

On the same line under the 'skid' column  
'Scale / Angle' > 'Set Angle' > Angle( "Group.Vehicles" ) > 'OK'

This will set the angle of the skid to match the car, now we need to use the 'last angle' variable

Click on 'New Condition' > 'The Timer' > 'Every' >  
0 :Hours, 0 :Minutes, 0 :Seconds, 20 :1/100th Sec > 'OK'

Add an action by right-clicking under the  
'Group.Vehicles' column on the line of the  
condition you just made.

'Alterable Values' > 'Set' > 'Last angle' Angle( "Group.Vehicles" )



[Test]

!Bug! The skid marks go over the car and when too many appear it glitches the game  
To resolve this we will cause them to fade away and cars to appear above them

## Micro Driver D2) Skidmarks 3/3

In the EVENT EDITOR

Click on 'New Condition' > 'The Timer' > 'Every' >  
0 :Hours, 0 :Minutes, 0 :Seconds, 1 :1/100th Sec > 'OK'

Add an action by right-clicking under the 'Skid' column on the line of the condition you just made.  
'Alterable Values' > 'Add to' > 'Alterable value A' 1  
(we can rename this value in the object properties to "fade" to help us remember what it is if we want)

Add another action by right-clicking under the 'skid' column on the line on the same action.

'Effect' > 'Set alpha-blending coefficient' > Alterable Value A( "skid" )

Click on 'New Condition' > 'skid' > 'Alterable Values' > 'Compare to one of the alterable values' >  
'Alterable Value A' 'Greater' 255

An alpha-blending coefficient of 255 is totally transparent, 0 is solid

Add an action by right-clicking under the 'skid' column  
on the line of the condition you just made.  
'Destroy'

Find the 'Always' condition and add two action one under 'Group.Vehicles' the  
other on 'Group.Obstacles' 'Order' > 'Bring to Front'  
[Test] [Save]



# Micro Driver D3) Music

In the EVENT EDITOR

Find the condition 'Timer equals 03"-00' (When the race starts)

Add an action by right-clicking under the 'Sound' (Speaker) column on the line of that condition.  
'Samples' > 'Play and loop sample' > From a file 'BROWSE' > "music badoink - fire it up.mp3"

Find the condition 'Laps of "Group.Vehicles" = 3'

Add an action by right-clicking under the 'Sound' (Speaker) column on the line of that condition.  
'Samples' > 'Stop any sample playing'



[Test]

[Save]

Making a good track takes time, change the course, CPU normal speeds, obstacles and checkpoint positions and keep testing and saving your work.