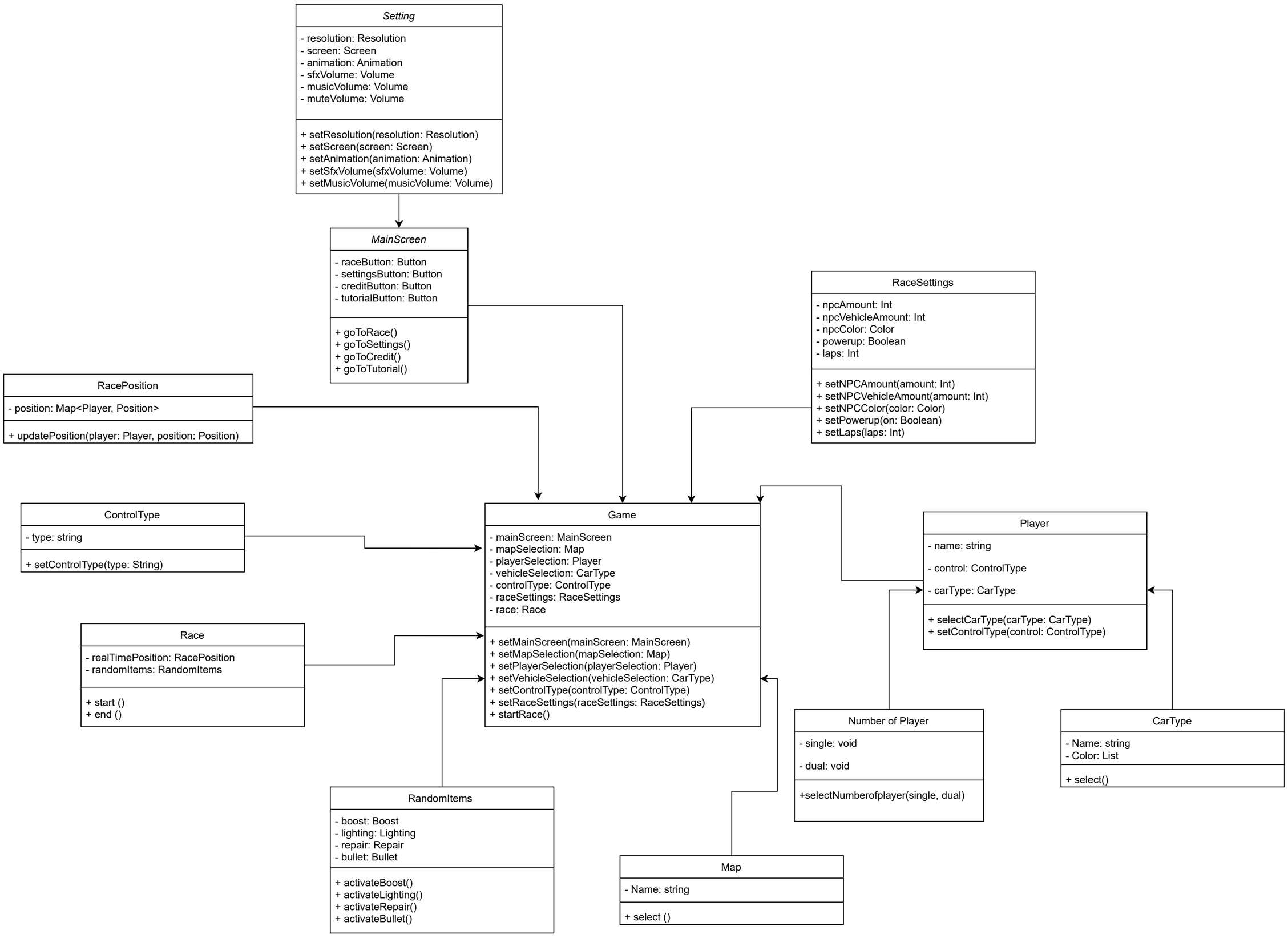
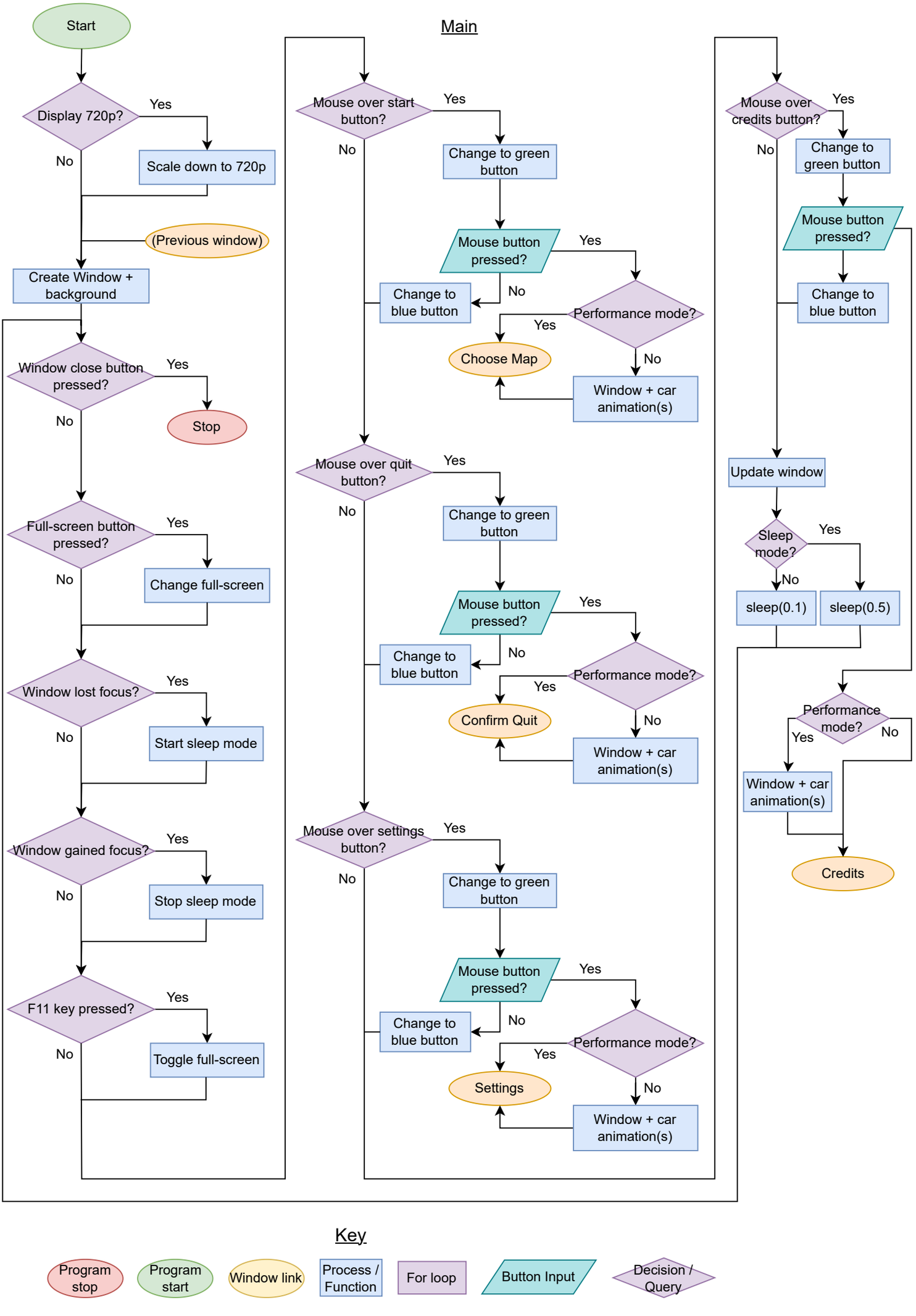
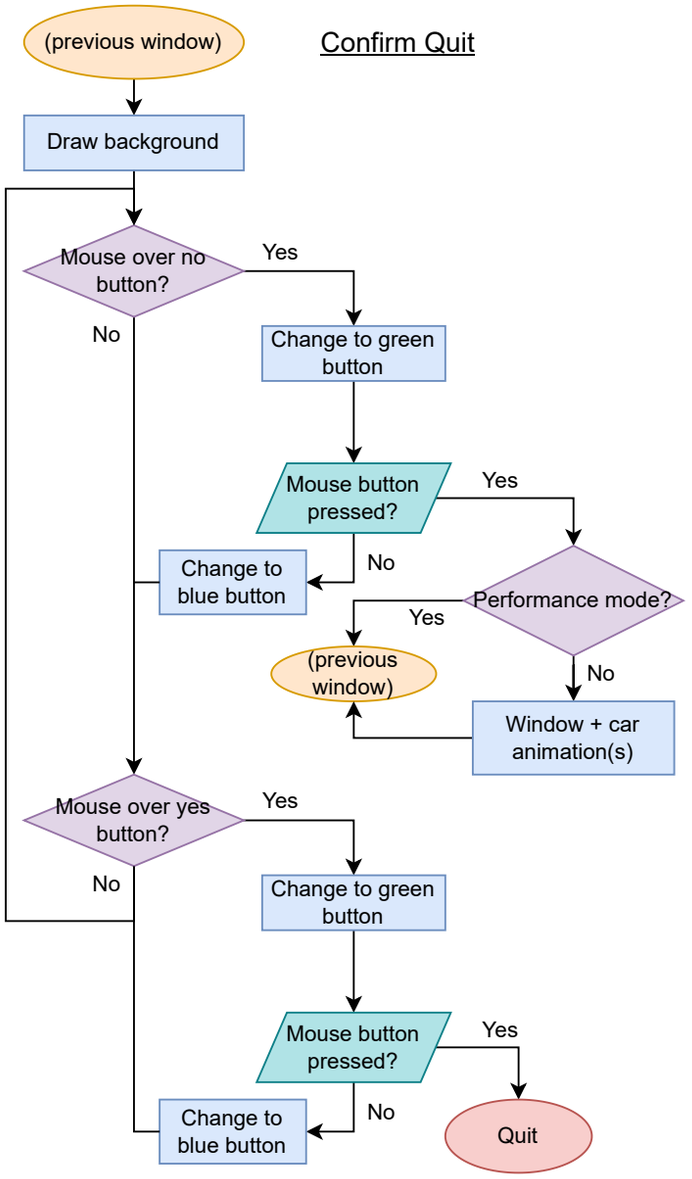
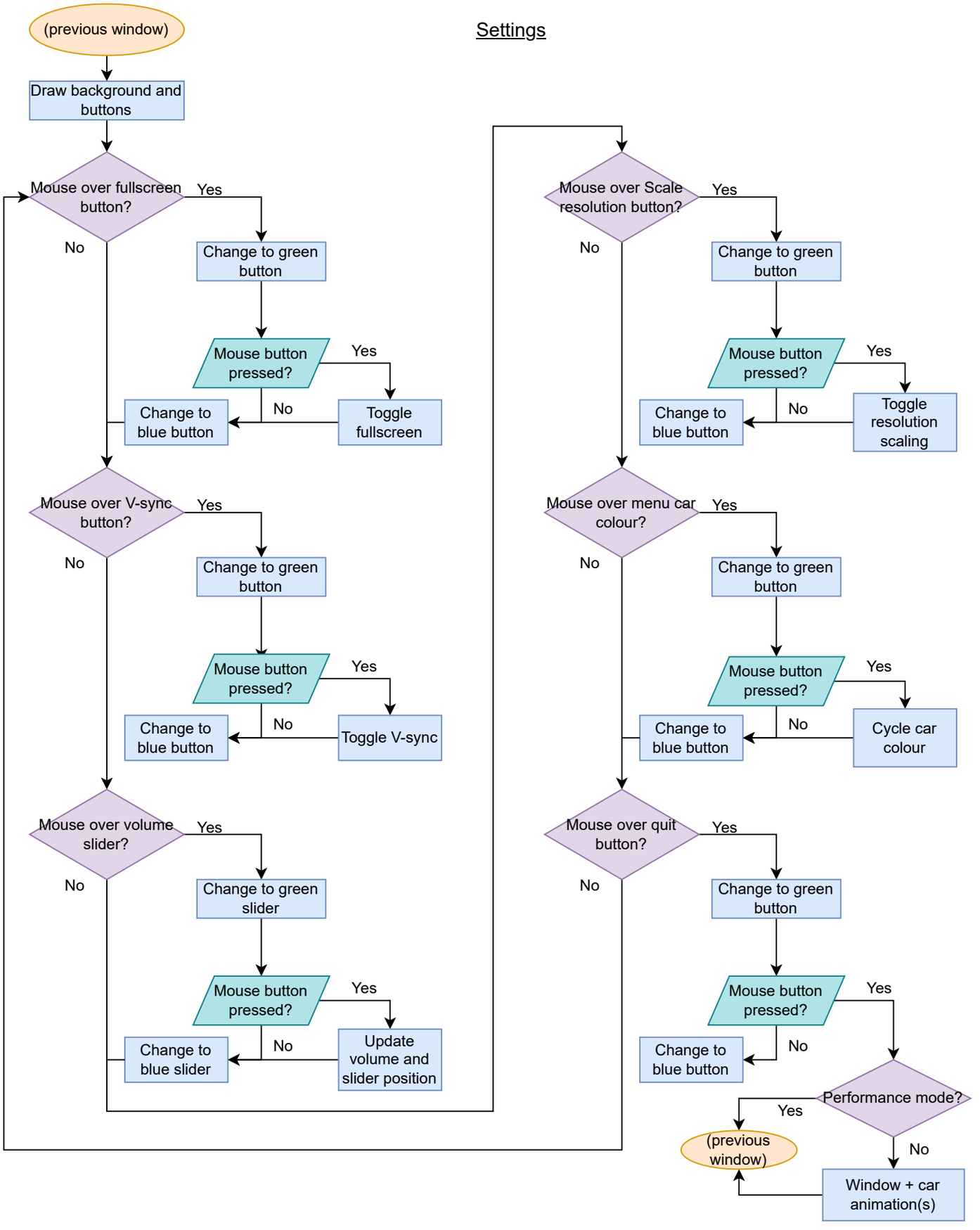
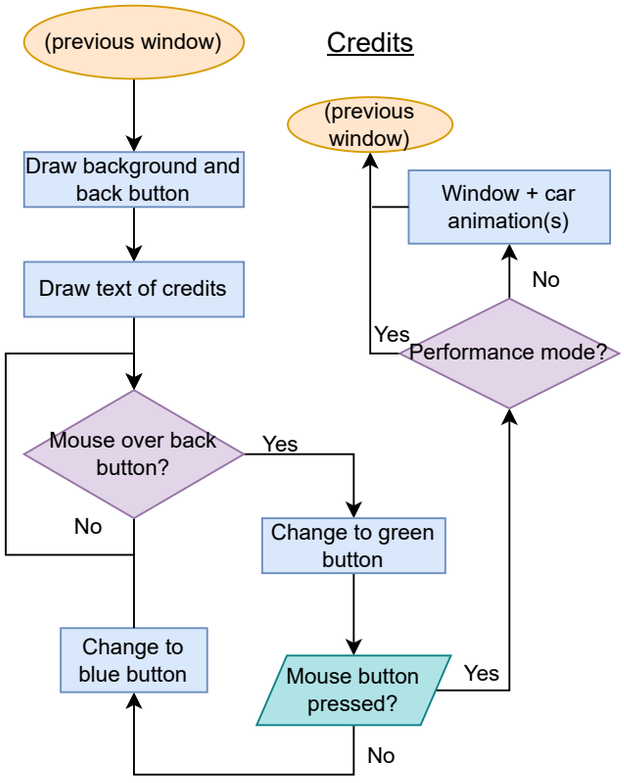

Setting
- resolution: Resolution
- screen: Screen
- animation: Animation
- sfxVolume: Volume
- musicVolume: Volume
- muteVolume: Volume
+ setResolution(resolution: Resolution)
+ setScreen(screen: Screen)
+ setAnimation(animation: Animation)
+ setSfxVolume(sfxVolume: Volume)
+ setMusicVolume(musicVolume: Volume)
MainScreen
- raceButton: Button
- settingsButton: Button
- creditButton: Button
- tutorialButton: Button
+ goToRace()
+ goToSettings()
+ goToCredit()
+ goToTutorial()
RacePosition
- position: Map<Player, Position>
+ updatePosition(player: Player, position: Position)
RaceSettings
- npcAmount: Int
- npcVehicleAmount: Int
- npcColor: Color
- powerup: Boolean
- laps: Int
+ setNPCAmount(amount: Int)
+ setNPCVehicleAmount(amount: Int)
+ setNPCColor(color: Color)
+ setPowerup(on: Boolean)
+ setLaps(laps: Int)
ControlType
- type: string
+ setControlType(type: String)
Game
- mainScreen: MainScreen
- mapSelection: Map
- playerSelection: Player
- vehicleSelection: CarType
- controlType: ControlType
- raceSettings: RaceSettings
- race: Race
+ setMainScreen(mainScreen: MainScreen)
+ setMapSelection(mapSelection: Map)
+ setPlayerSelection(playerSelection: Player)
+ setVehicleSelection(vehicleSelection: CarType)
+ setControlType(controlType: ControlType)
+ setRaceSettings(raceSettings: RaceSettings)
+ startRace()
Player
- name: string
- control: ControlType
- carType: CarType
+ selectCarType(carType: CarType)
+ setControlType(control: ControlType)
Race
- realTimePosition: RacePosition
- randomItems: RandomItems
+ start ()
+ end ()
Number of Player
- single: void
- dual: void
+selectNumberofplayer(single, dual)
CarType
- Name: string
- Color: List
+ select()
RandomItems
- boost: Boost
- lighting: Lighting
- repair: Repair
- bullet: Bullet
+ activateBoost()
+ activateLighting()
+ activateRepair()
+ activateBullet()
Map
- Name: string
+ select ()


Main
Start
Display 720p?
Yes
No
Scale down to 720p
(Previous window)
Create Window + background
Window close button pressed?
Yes
No
Stop
Full-screen button pressed?
Yes
No
Change full-screen
Window lost focus?
Yes
No
Start sleep mode
Window gained focus?
Yes
No
Stop sleep mode
F11 key pressed?
Yes
No
Toggle full-screen
Mouse over start button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Performance mode?
Yes
No
Choose Map
Window + car animation(s)
Mouse over quit button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Performance mode?
Yes
No
Confirm Quit
Window + car animation(s)
Mouse over settings button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Performance mode?
Yes
No
Settings
Window + car animation(s)
Mouse over credits button?
Yes
No
Change to green button
Mouse button pressed?
Change to blue button
Update window
Sleep mode?
Yes
No
sleep(0.1)
sleep(0.5)
Performance mode?
Yes
No
Window + car animation(s)
Credits
Key
Program stop
Program start
Window link
Process / Function
For loop
Button Input
Decision / Query

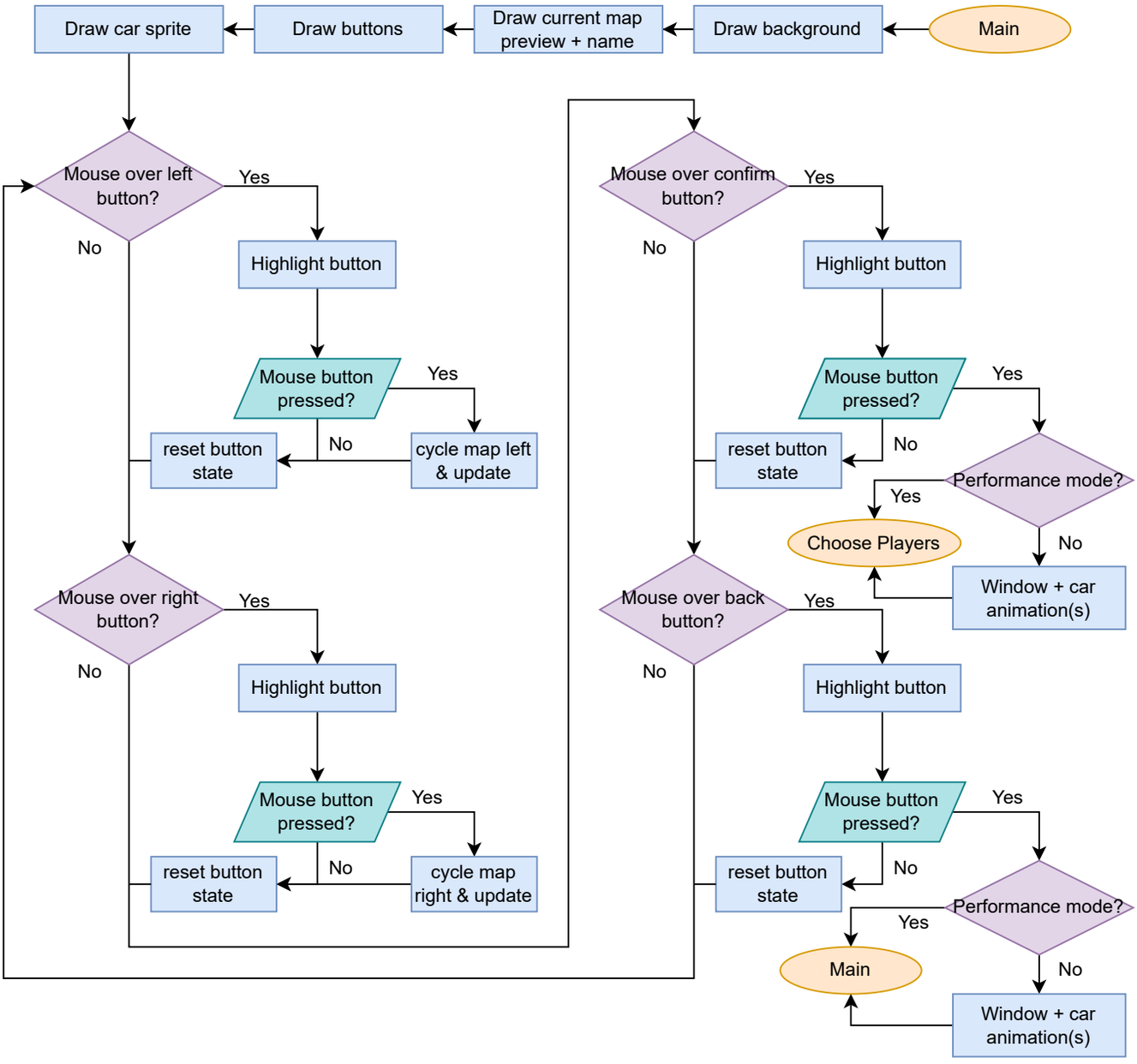

(previous window)
Confirm Quit
Draw background
Mouse over no button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Performance mode?
Yes
No
(previous window)
Window + car animation(s)
Mouse over yes button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Quit

Settings

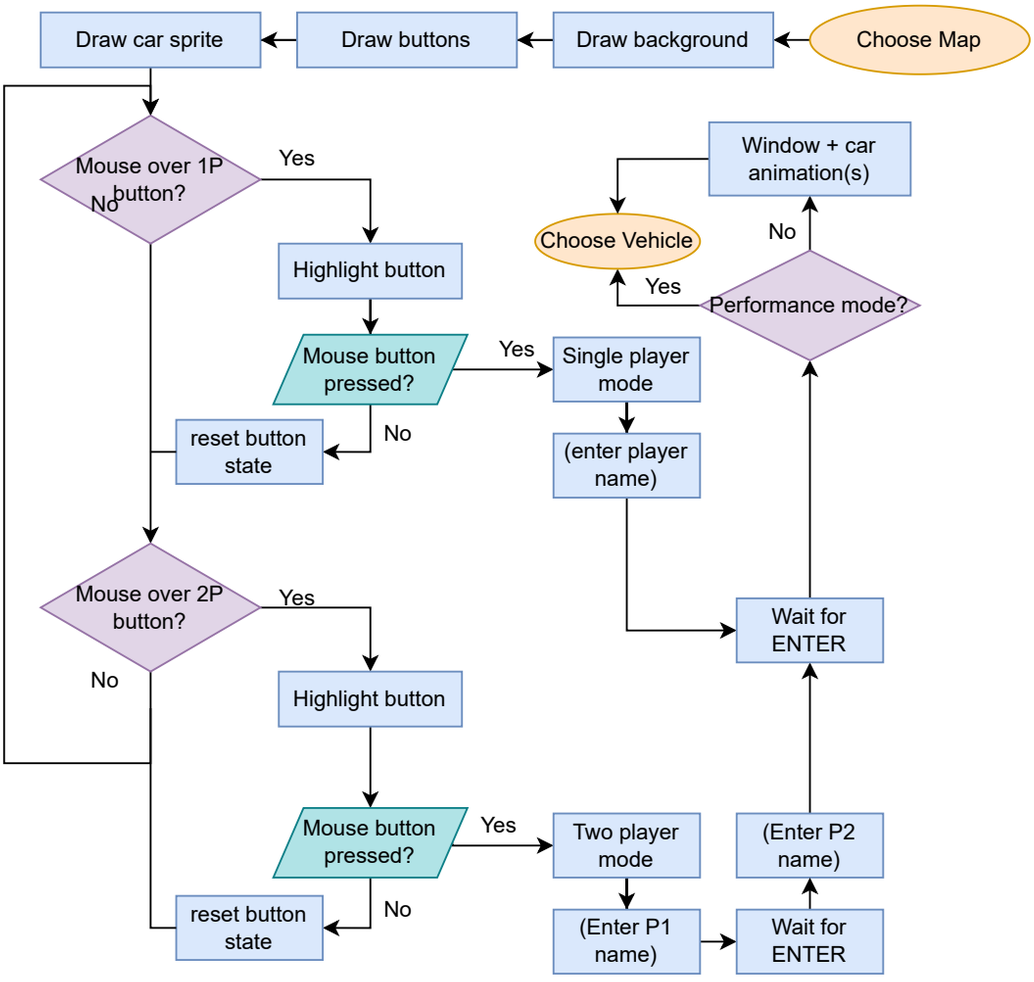

(previous window)
Draw background and buttons
Mouse over fullscreen button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Toggle fullscreen
Mouse over V-sync button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Toggle V-sync
Mouse over volume slider?
Yes
No
Change to green slider
Mouse button pressed?
Yes
No
Change to blue slider
Update volume and slider position
Mouse over Scale resolution button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Toggle resolution scaling
Mouse over menu car colour?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Cycle car colour
Mouse over quit button?
Yes
No
Change to green button
Mouse button pressed?
Yes
No
Change to blue button
Performance mode?
Yes
No
(previous window)
Window + car animation(s)

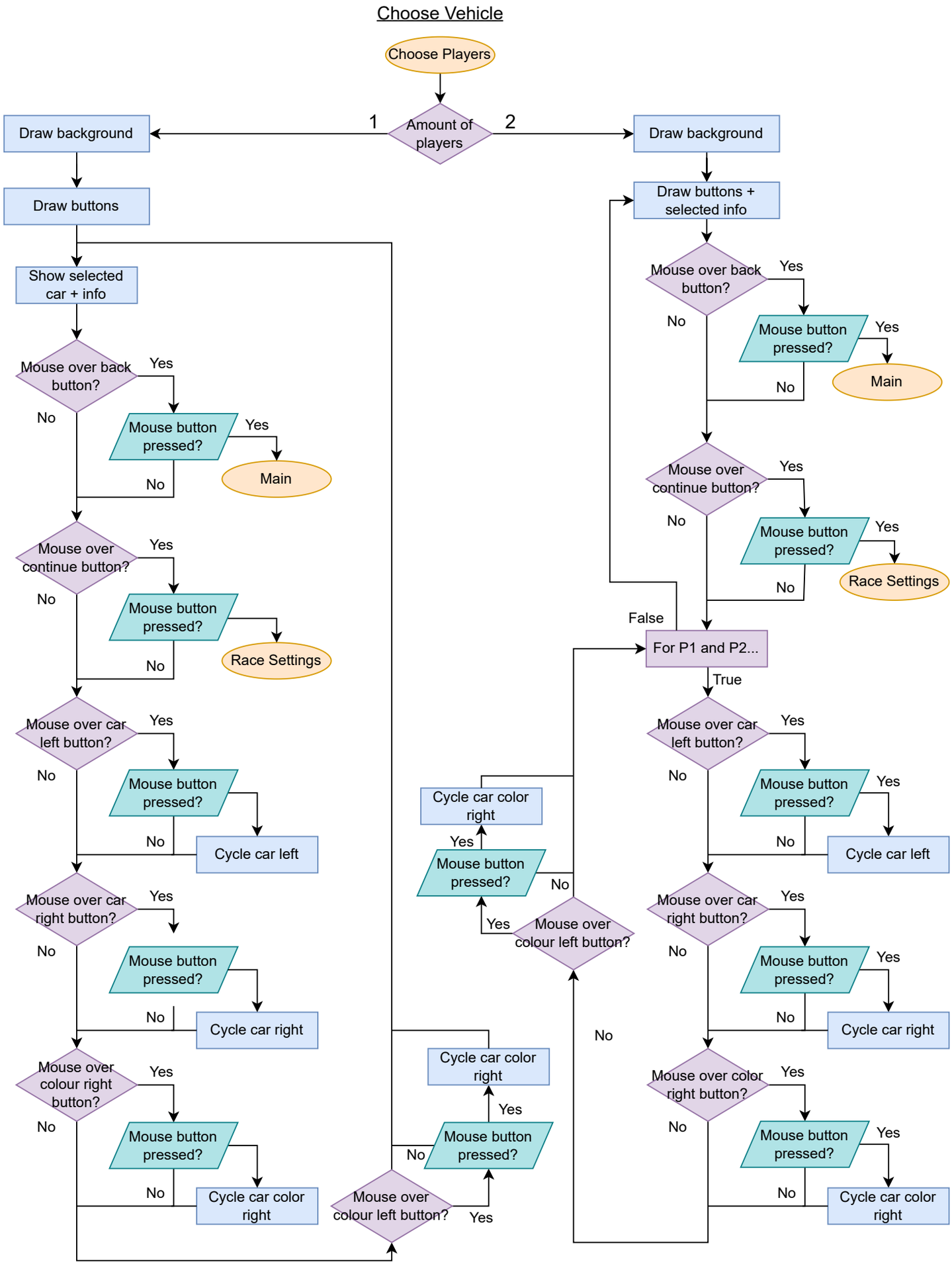

(previous window)
Credits
Draw background and back button
Draw text of credits
Mouse over back button?
Yes
No
Change to green button
Change to blue button
Mouse button pressed?
Yes
No
(previous window)
Window + car animation(s)
No
Yes
Performance mode?

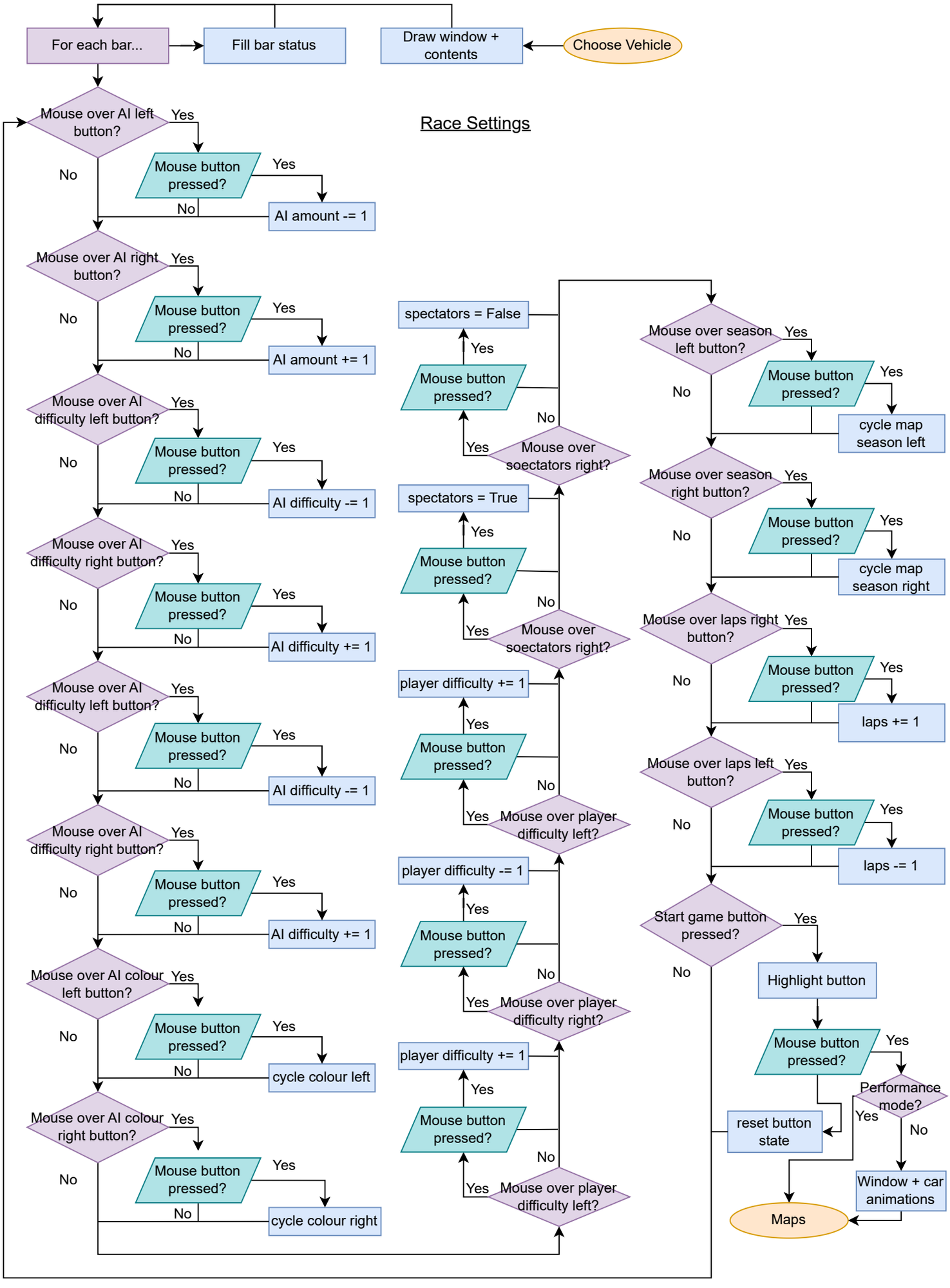
Choose Map

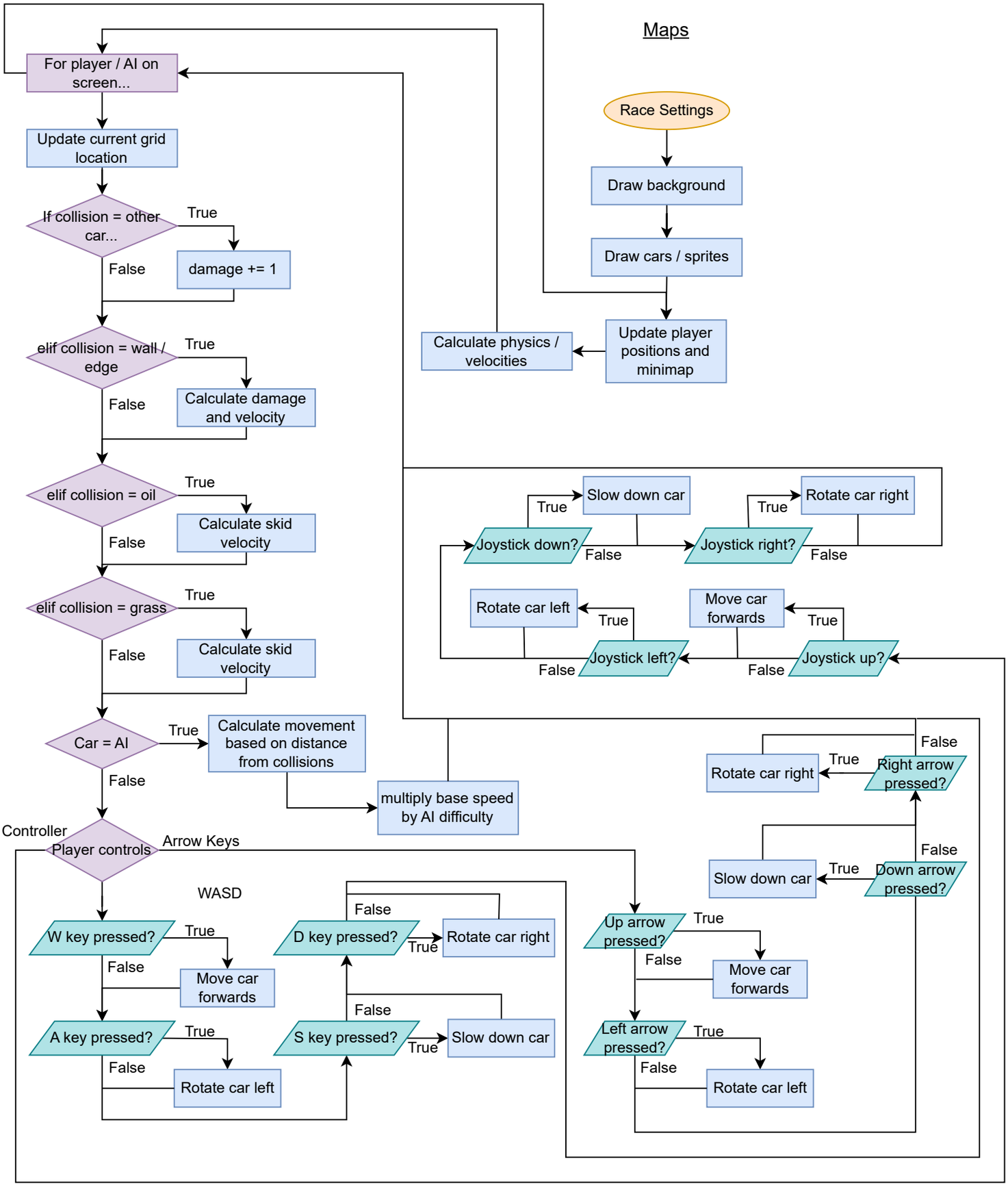

Draw car sprite
Draw buttons
Draw current map preview + name
Draw background
Main
Mouse over left button?
Yes
No
Highlight button
Mouse button pressed?
Yes
No
reset button state
cycle map left & update
Mouse over right button?
Yes
No
Highlight button
Mouse button pressed?
Yes
No
reset button state
cycle map right & update
Mouse over confirm button?
Yes
No
Highlight button
Mouse button pressed?
Yes
No
reset button state
Performance mode?
Yes
No
Choose Players
Window + car animation(s)
Mouse over back button?
Yes
No
Highlight button
Mouse button pressed?
Yes
No
reset button state
Performance mode?
Yes
No
Main
Window + car animation(s)

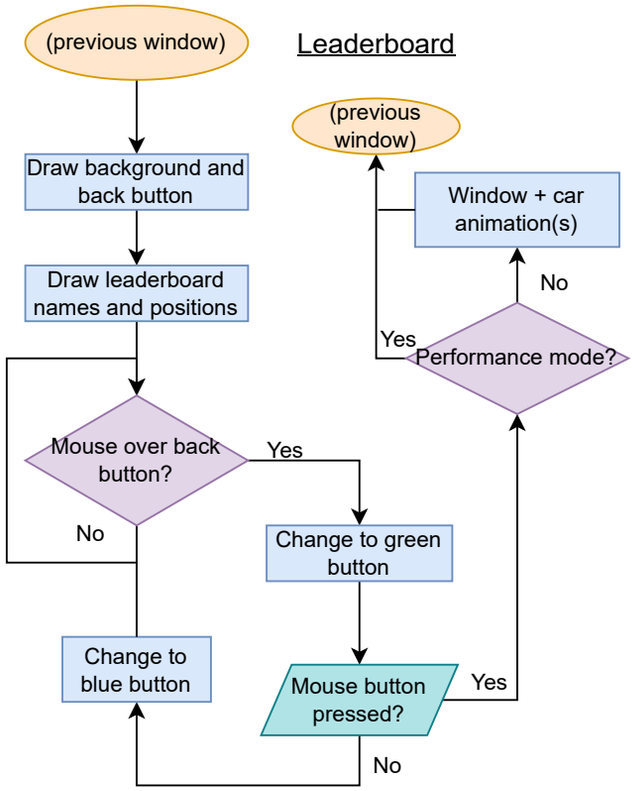
Choose Players




Choose Vehicle
Choose Players
Amount of players
1
2
Draw background
Draw buttons
Show selected car + info
Mouse over back button?
Yes
No
Mouse button pressed?
Main
Mouse over continue button?
Race Settings
Mouse over car left button?
Cycle car left
Mouse over car right button?
Cycle car right
Mouse over colour right button?
Cycle car color right
Mouse over colour left button?
Draw background
Draw buttons + selected info
False
For P1 and P2...
True


Race Settings
For each bar...
Fill bar status
Draw window + contents
Choose Vehicle
Mouse over AI left button?
Mouse button pressed?
AI amount -= 1
Mouse over AI right button?
AI amount += 1
Mouse over AI difficulty left button?
AI difficulty -= 1
Mouse over AI difficulty right button?
AI difficulty += 1
Mouse over AI colour left button?
cycle colour left
Mouse over AI colour right button?
cycle colour right
spectators = False
Mouse over soectators right?
spectators = True
player difficulty += 1
Mouse over player difficulty left?
player difficulty -= 1
Mouse over player difficulty right?
Mouse over season left button?
cycle map season left
Mouse over season right button?
cycle map season right
Mouse over laps right button?
laps += 1
Mouse over laps left button?
laps -= 1
Start game button pressed?
Highlight button
Performance mode?
reset button state
Window + car animations
Maps
Yes
No


Maps
Race Settings
Draw background
Draw cars / sprites
Update player positions and minimap
Calculate physics / velocities
For player / AI on screen...
Update current grid location
If collision = other car...
True
damage += 1
False
elif collision = wall / edge
True
Calculate damage and velocity
False
elif collision = oil
True
Calculate skid velocity
False
elif collision = grass
True
Calculate skid velocity
False
Car = AI
True
Calculate movement based on distance from collisions
False
multiply base speed by AI difficulty
Controller
Player controls
Arrow Keys
WASD
W key pressed?
True
Move car forwards
False
A key pressed?
True
Rotate car left
False
D key pressed?
True
Rotate car right
False
S key pressed?
True
Slow down car
False
Up arrow pressed?
True
Move car forwards
False
Left arrow pressed?
True
Rotate car left
False
Joystick down?
True
Slow down car
False
Joystick right?
True
Rotate car right
False
Rotate car left
True
Joystick left?
False
Move car forwards
True
Joystick up?
False
Rotate car right
True
Right arrow pressed?
False
Slow down car
True
Down arrow pressed?
False


(previous window)
Leaderboard
Draw background and back button
Draw leaderboard names and positions
Mouse over back button?
Yes
No
Change to green button
Change to blue button
Mouse button pressed?
Yes
No
(previous window)
Window + car animation(s)
No
Yes
Performance mode?