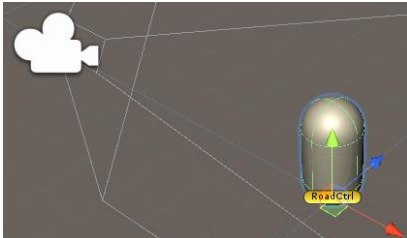


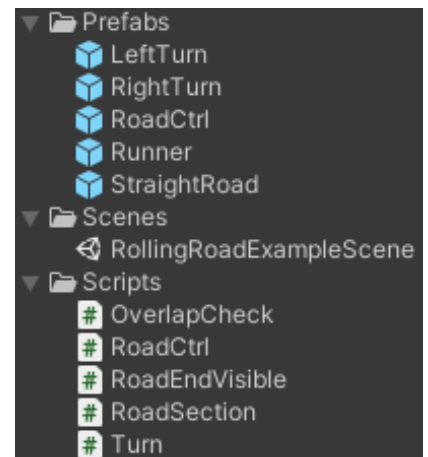
Rolling Road - Documentation

Included in the Rolling Road Unity Pack are three road section prefabs, one straight, and the other two are left and right turns. A prefab 'RoadCtrl' used to generate the rolling road and control its behaviour. Also, a 'Runner' prefab pre-set up with GFX, a collider, rigid body, camera, and 'RoadCtrl' prefab at its base. Along with an Example scene 'RollingRoadExampleScene', and scripts required for the rolling road functionality.



Runner setup

On the example scene there is a 'Runner' prefab with a 'RoadCtrl' prefab at its base to generate the road, playing the scene will start the road generation.

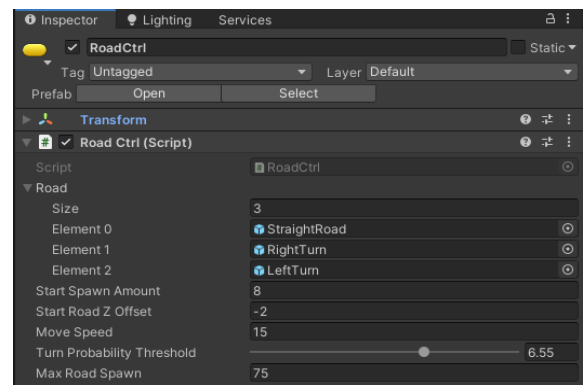


Unity Package Files

Scene Setup

To generate a rolling road on a new scene the 'Runner' prefab can be placed anywhere desired to start the road generation from.

Make sure the road prefabs are correctly referenced under 'Roads' in the inspector panel of the 'RoadCtrl' game object, this can be found parented and positioned at the base of the placed 'Runner' game object or placed as a prefab, ensuring the 'StraightRoad' prefab referenced at **Element 0** under 'Roads', a 'RightTurn' prefab at **Element 1**, and a 'LeftTurn' at **Element 2**, ordering the prefabs references incorrectly will cause issues with the road generation (see the "Road Ctrl inspector properties" image for visual explanation)

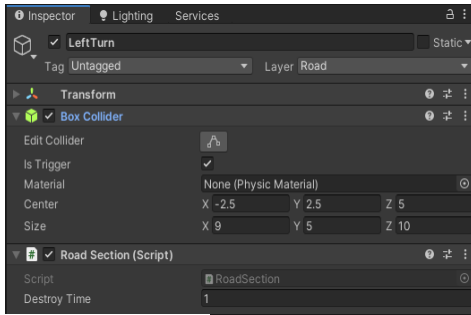


Road Ctrl inspector properties

Alternatively, you can set up and use your own runner game object making sure it has a collider and Rigidbody set to kinematic attached, and a correctly set up 'RoadCtrl' prefab positioned at its base as a pivot point for the generated road path. (see the "Runner setup" image for visual explanation)

Properties & Customisation

To adjust the rolling road behaviour there are properties under the 'RoadCtrl' script component found on the 'RoadCtrl' game object, here you can tweak the number of straight roads to spawn at the start of road generation using the 'Start Spawn Amount' attribute. 'Start Road Z Offset' to manage how far back or forward you want initial road to spawn defaulted at -2 to make the first road section spawn 2 units behind the runner. 'Move Speed' to handle the roads movement speed going towards the camera, remember to keep this as a positive value as the road will move away from the runner which is not compatible with the road generation. 'Turn Probability Threshold' is used to control the spawn frequency of turn sections, a higher value will result with less turns being generated into the road path, and lower values producing more. And 'Max Road Spawn' is used to regulate how many road sections can be generated into the path at once, decreasing this value will aid performance, and increasing it will allow for more roads to be generated but this can take a hit on performance. (see the "Road Ctrl inspector properties" image for visual explanation)

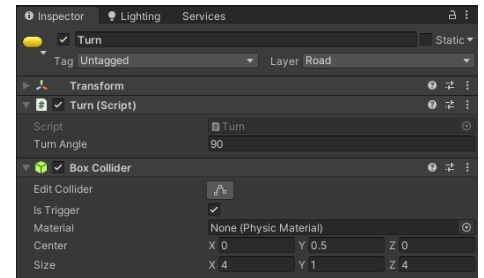


Road Section

the y axis from the 'RoadCtrl' game object pivot when the runner reaches the turn trigger.

On each road section prefab you can find the 'Road Section' script component, here you can alter the delay in seconds before the road section gets destroyed after the runner passes it exiting its trigger collider

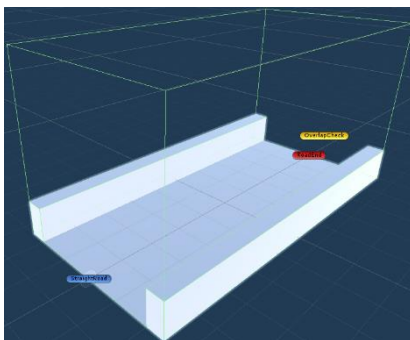
Inside each turn section prefab you can find a child game object 'Turn' with a 'Turn' script attached, using the 'Turn Angle' attribute you can tune how many degrees the generated road path should rotate on



Turn inspector properties

Custom Road Prefabs

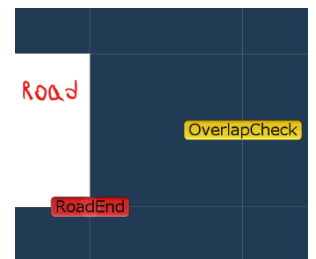
If you would like to create and use custom road section prefabs, they must be set up in a specific way.



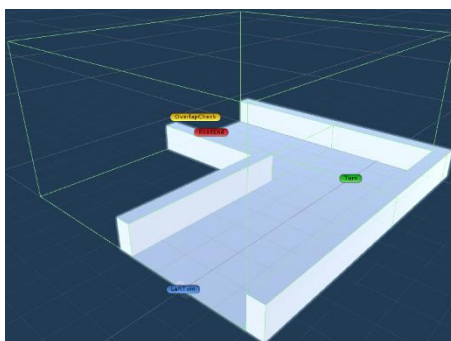
Straight road prefab layout

Road requirements: Firstly, the road prefab's root object must be an empty game object placed in the middle at the start of the road (See the blue label's position on the "Straight road prefab layout" image for visual representation), this is used as an anchor point for connecting to other road sections, then attach a 'RoadSection' script to the root game object. Next the base of the road with a collider can be any width and length, but the top of the mesh must be positioned vertically in line with the root game object to keep the path floor at the correct height. Following, the path will need some barriers with colliders, these will be used for detection from other road parts. Another empty game object being name 'RoadEnd' must be placed in the middle of the end of the road vertically in line with the top of the road's base, this is used as the road's ending anchor point to connect other roads,

attaching the 'RoadEndVisible' script (leaving 'reVisible' unchecked) and a mesh renderer component required for detecting the road's visibility, making sure the 'RoadEnd' game object is at the top of the road prefab's root child list, this is vital for the road generator to find the correct child object. One last child empty game object needs to be placed just after the road end at the middle height of the barriers (see 'OverlapCheck' labelled in yellow on the "Road end side view" image for visual representation") with an 'OverlapCheck' script attached, this is used for a Raycast to detect other road sections obstructing possible paths to decide what direction the next road should travel. Finally, back in the root game object of the road prefab a box collider as a trigger must be attached, scaling the colliders area around the entire road section, this is essential for the 'RoadSection' script attached to the root object to detect whether the runner has exited the road section to destroy the road.



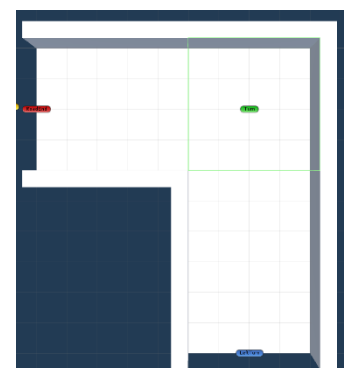
Road end side view



Turn road prefab layout

Road turn section requirements: Turn section prefabs must be similarly set up the same as described above, but require an additional child empty game object (see 'Turn' labelled in green on the "Turn road prefab layout" image for visual representation") positioned in the centre of the road section's turn with a 'Turn' script attached and the correct turn rotation in its 'Turn Angle' property (90 for a 90° left turn, or -90 for a 90° right turn), and a box collider with a trigger attached scaled around the turn perimeter

to detect the runner is in the turn area. (see the green box around the green label on the "Turn trigger collider" image for visual representation")



Turn trigger collider placement

After creating and saving the road sections as prefabs, reference them in the 'RoadCtrl' inspector properties in their correct order (Read "Scene Setup" paragraph 2).