

# Simulator

This tutorial shows you how view your projects in the “Simulator” mode.

## Concepts

In this tutorial you will learn:

- How to enter the simulator mode
- How setup your projects to get the best results when in the simulator

## Prerequisites

- Project Tree
- Camera Tools
- Objects

## Simulator

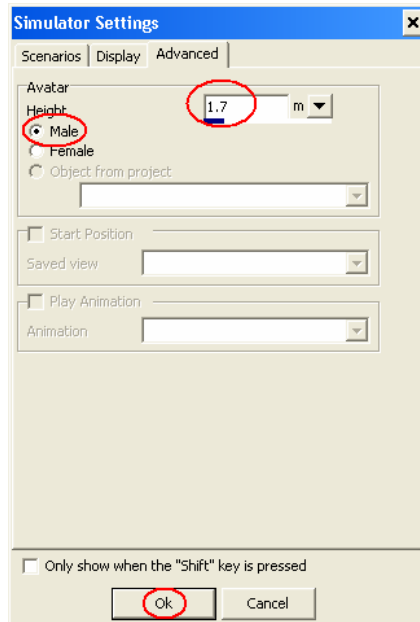
This is a special viewing mode which allows you to walk (or fly) around the project at the correct scale. It allows you to bump into objects rather than passing through them. It applies gravity to you so that you fall off objects and fall to the ground (or another object if you hit that first). You can set up “scenarios” which will run animations in the simulator so that objects can move about and make noises. You can also set up composite actions, so that, for example, doors can open automatically or at the click of the mouse.

There are various option to set prior to entering the simulator mode, and these are presented in a settings dialog. Once you are in the simulator mode, there are more settings available to you, and these are presented by a menu of icons at one of the edges of the simulator window.

## EXERCISE 1

Starting the simulator

- Open file “ex1.s3d”
- Choose “Camera|Simulator”; the settings dialog should appear:



- Press the “Ok” button and another window will appear – this is the simulator window. You start from wherever you positioned the camera in the main window of Simmetry3d.



- Use the cursor keys to move about the landscape.
- Try the mouse control mode – click the “Mouse” icon. Now moving the mouse will alter the direction you are looking. (Alternatively the right mouse button will switch this mode on and off).

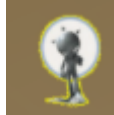


**TIP:** Leave the cursor over one of the icons and a hint will appear telling you what the icon does. It also shows the hotkey associated with the icon.

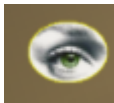
- Change back to non-mouse control – press the “control” key – this frees the mouse so you can click on the “arrow” icon. (Or press the right mouse button).



- Now try the 3<sup>rd</sup> person view where you see your avatar – this can be useful to perceive the scale of objects. Press the “person” icon and your avatar should appear.



- Change back to 1<sup>st</sup> person view by pressing the “eye” icon. The avatar will disappear.



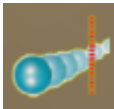
- Now try the “Fly” mode – press the “wings” icon. Use the “Page up” or “Page down” keys to fly up and down, and the cursor keys as in the walk mode.



- Switch back to walk mode by clicking on the “Feet” icon.



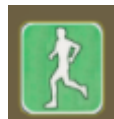
- Try turning off collisions with the “Bounce” icon. This lets you pass through the building object.



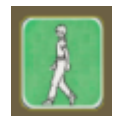
- Turn on collisions again:



- Next try the “Run” button – this will let you move faster across the terrain.



- Turn back to walk mode:



- Try looking at the on-screen help page:



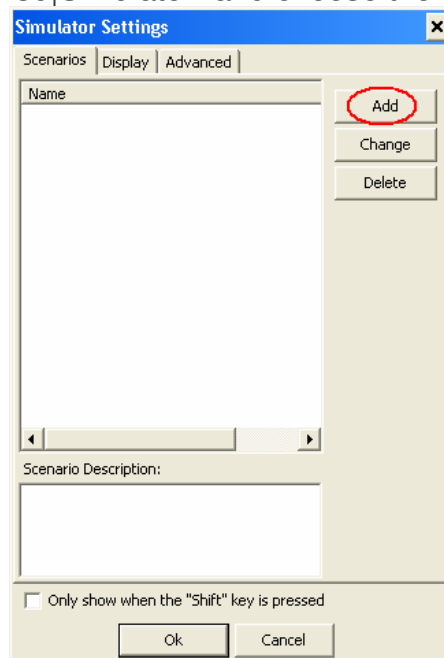
- To leave the simulator mode – press the “Exit” icon or press the “Escape” key.



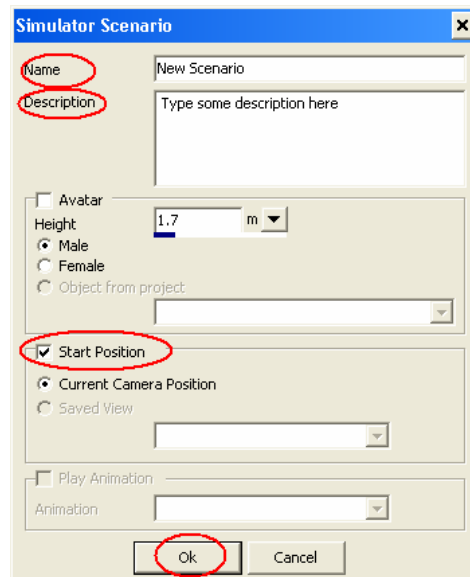
## EXERCISE 2

Setting up a “scenario”. A scenario allows you to specify the start position for the simulation, whether an animation should play during the simulation and also the avatar height for the simulation. Each scenario is given a name and a short description so that subsequent users can just pick them from a list.

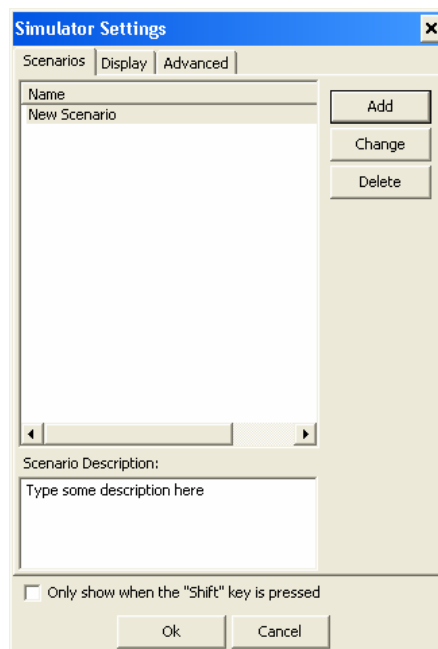
- Continue with the previous project. Move the camera to a suitable start position.
- Now choose “View3d|Simulator” and choose the “Scenarios” tab:



- Press the “Add” button to add a new scenario; then give it a name and a description, and set it so that the start point is where the camera is currently positioned. Notice that if there were some saved view points then you could choose one of these as the simulation starting point.



- Press the “Ok” button and this will have created a scenario:

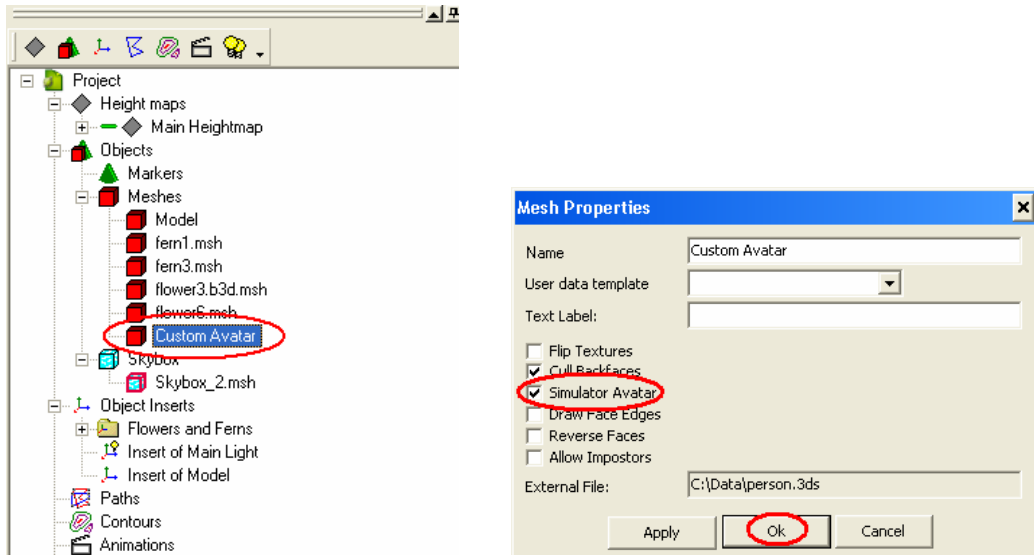


### EXERCISE 3

Setting up a project to get the best results when in the simulator

Settings typically are taken from the main 3d view in Simmetry3d and are used in the simulator window. However there are various things you may wish to setup before entering the simulator. These are as follows

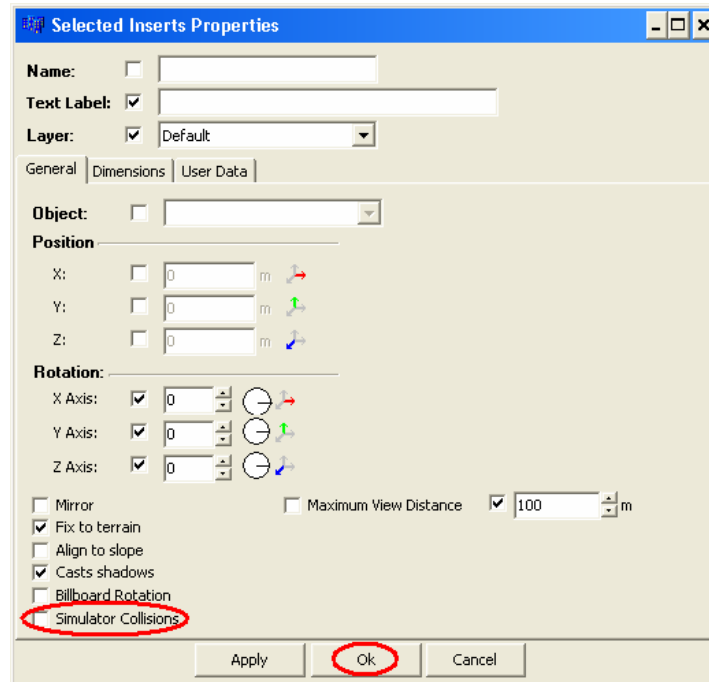
1. Custom avatar objects
  2. Non-solid simulator objects
  3. View distance limits
1.
    - “File|Open” ex2.s3d
    - View 3d|Simulator – notice that “Custom Avatar” is disabled – press “Cancel”
    - Go to the “Meshes” node of the Project Tree; right click on the “Custom Avatar” node, and choose “Properties”.



- Check the “Simulator Avatar” check box.
- View 3d|Simulator again, and select the “Custom Avatar” option. Press the OK button.
- Press the “person” icon. The avatar you see will be the custom one you chose in the settings dialog.



- Exit the simulator.
- 2.
- Now notice in the project that there are lots of ferns and grass objects on the terrain. We want to make these non-solid so we don't collide with them in the simulator.
  - Select all these inserts by right clicking on the “Flowers and Ferns” group node in the project tree, and selecting “Select children”. Then choose “Objects | Properties Selected” and un-check the “Simulator Collisions” check box.

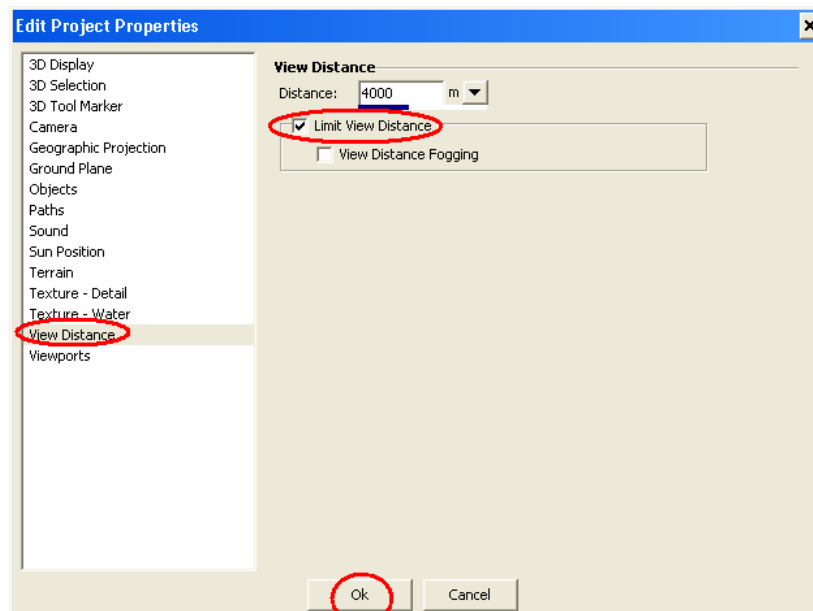


- Start the simulator again, and walk through the flowers – this time you will pass smoothly through them.
- Exit the simulator.

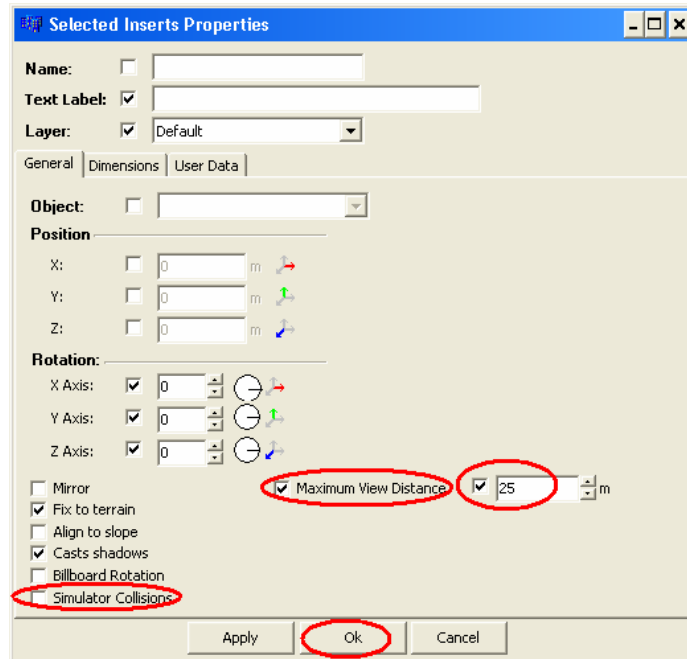
3.

With lots of small object in the design it can sped up the simulation by setting a maximum view distance for these objects.

- Continue with the previous project
- First we must turn on view distance culling – File | Properties. Find the “Objects” section and check the “Limit View Distance” check box.



- The “Distance” field is the default view distance for all objects – so set this to a reasonably high value.
- Now select all the flowers and ferns in the same way as the previous exercise.
- Choose “Objects | Properties Selected”; we want to override the view distance of these object to a smaller value:

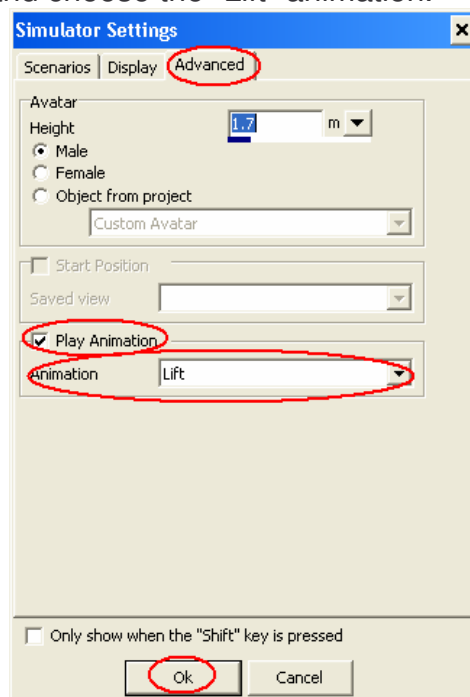


- Now start the simulator and notice the flowers and ferns fade in when you approach them.

## EXERCISE 4

Playing an animation in the simulator

- Open file “ex3.s3d”. This has an animation set up which rises a lift up into the air and then back to the ground.
- Run the simulator. In the “Simulator Settings” dialog – check the “Play Animation” box and choose the “Lift” animation.



- Once in the simulator you will see the lift go up to the top of the building object and return to the ground. You can manoeuvre the avatar into the lift and it will be moved to the top of the building.

- Try setting up a scenario (similar to Exercise 2) which plays this animation – you will find each scenario has an option to play an animation.

