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GETTING STARTED

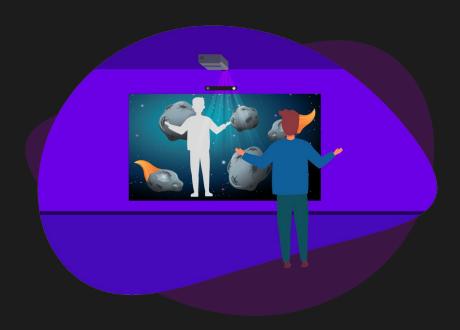
Take time to read through the getting started information as it introduces several concepts that are essential to know in order to get the most from your Magic Mirror system. Pay particular attention to interaction area and user detection so you can troubleshoot interaction difficulties associated with posture and interaction range.



Magic Mirror – System Types

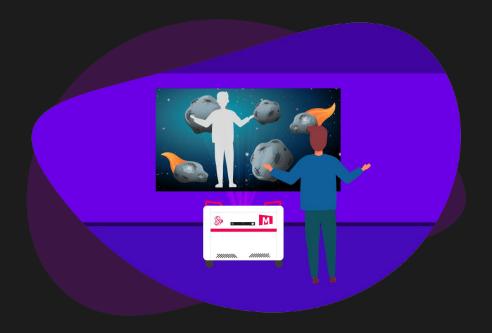
1 Fixed Installation

Installed Magic Mirror has a projector fitted to the ceiling, depth camera fitted to a wall and a wall rack which houses the control PC and amplifier.



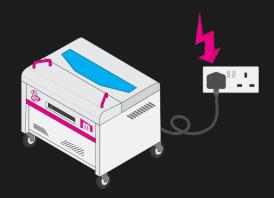
2 Mobile

Mobile Magic Mirror is a plug and play system that can be moved across spaces. The projector, PC, camera and sound system are fitted to the Mobile Frame.





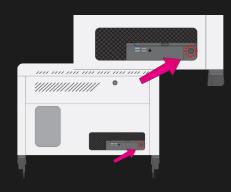
Mobile Magic Mirror - Getting Started Checklist



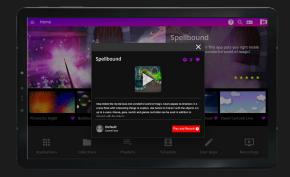
Plug Mobile Magic Mirror into socket
- power on



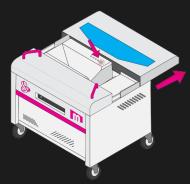
4 Straighten Projection - Move frame to the wall and pivot until the projection is straight



Power on PC - Magic Mirror™ software
will load as soon as Windows™ has
started



Play an App – Select an app and play the app icon from the pop-up app launcher



Power on Projector - Use the remote control or slide the cover back and press the projector power button.



Magic Mirror Getting Started Checklist



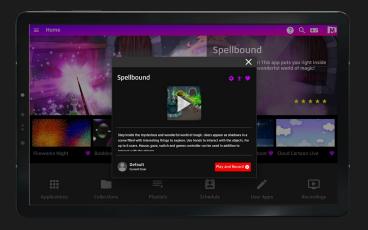




Magic Mirror™ software will load as soon as Windows™ has started

Turn on Projector

Use the remote control to turn the projector on.



3 Play an App

Select an app and press the play icon in the app launch pop-up.



Magic Mirror Interaction Area

The optimum interaction distance for Magic Mirror is between 2 – 4m from the camera:

- Any further than 4.5m, the camera will struggle to detect the user.
- Any closer than 1.5m, the sensory will struggle to detect a full skeleton
- Stick within the optimum range for best user experience

Tip: If you cover the camera sensor for a few seconds the sensor will reset and refresh the users in the scene. Useful to know when working with apps in facilitator mode with a single user.



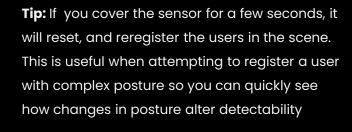
Magic Mirror User Detection

Magic Mirror's sensor detects the human skeleton and knows which parts of the body are which.

The system works for people standing and sitting, so there is no issue detecting wheelchair users.

If the user is not detectable as a skeleton, such as in the case that a user is reclined at a steep angle or covered from neck to toe with a blanket, it may not be possible for the sensor to detect them.

The sensor needs to detects the head and shoulders and chest to form the basic structure of a skeleton. Legs may be fully obscured without issue.





This level of recline will prevent the sensor from detecting a torso. If the user is fixed in this position – you will have more success with eye gaze and alternative switch inputs.











How to control Magic Mirror

Magic Mirror runs on a Windows PC and can be controlled by keyboard and mouse, or remotely using our Magic Mirror app

Using a Wireless Keyboard

Every Magic Mirror system is supplied with a wireless keyboard. This provides direct access to the system and allows you to control all aspects of the software.



Info:

To EXIT a running app, press ESC on top left of the keyboard

Using a Tablet / Smartphone

Download our app on to your iOS / Android device and control Magic Mirror remotely over a WIFI network





Troubleshooting Tip:

Magic Mirror PC and your device need to be on the same WIFI network!

Connect Device

Magic Mirror can be controlled from a Smartphone or Tablet using the Magic Mirror Controller App for iOS and Android.

This means instructors can navigate a session with minimal interruption as they transition apps.

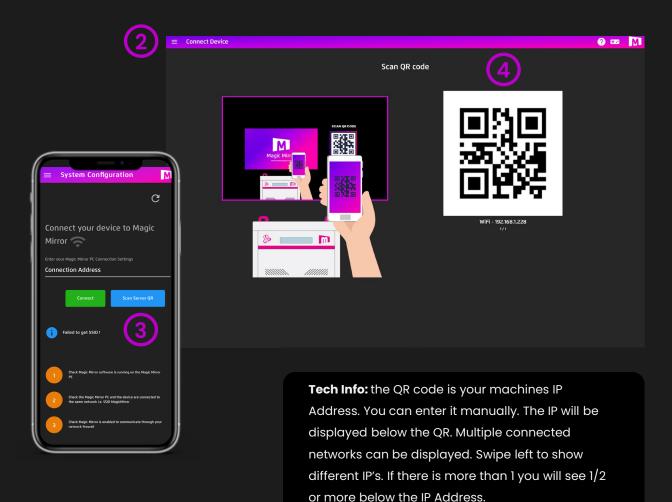
How to do it:

- Download the controller app onto your device.
- On Magic Mirror software; select Connect Device from the side menu.
- Open the control app on your device and select Scan Server QR.
- Scan the QR Code. When connected, you will see the home screen on your device. Test by selecting an app and pressing play

Troubleshooting Tip: If your device does not connect to Magic Mirror, check it is connected to the same WIFI network!







Starting and Stopping Apps

Magic Mirror is supplied with a range of interactive apps and the tools needed to create your own. Apps can be loaded from the Magic Mirror Control App or from the Magic Mirror PC using the supplied wireless keyboard.

Starting Apps

- 1 Click an app button to open the app launch window
- 2 Click the play button app icon to start the app.
- To capture the in-game interaction in a video, start the app using the red Play and Record button instead of the Play button in the app icon.

Stopping Apps

Press ESC key – top left of keyboard

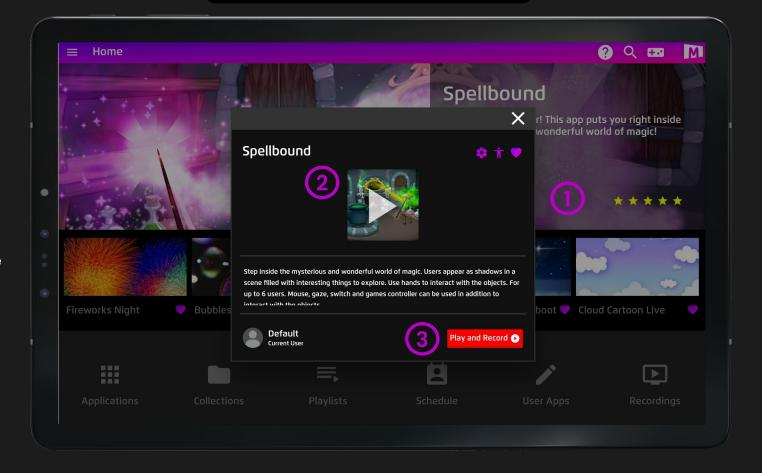
Open the in-app access menu choose 'Exit' see how.

Using a device: click Stop All in control panel <u>see how</u> or start another app

With mic connected say: "Exit App" speech command

INFO: It is not necessary to stop the app if you a using a tablet, just start any other app and the new app will load





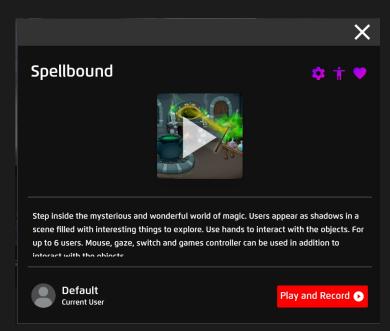




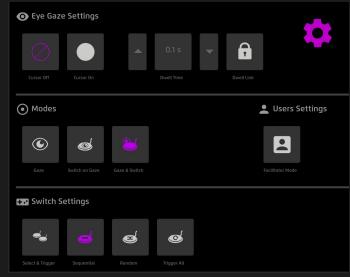
The app start window provides additional options to tailor the in-game interaction using the following icons:

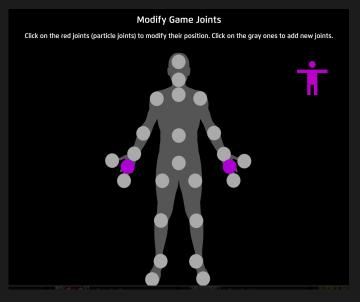
- Access Settings Enable and edit Eye Gaze and Switch access settings. Find more detail on access settings on page 32.
- Body Joints Modify which joints are interactive; click a joint to activate it. Red means active and grey means inactive.

 Purple joints have particle systems applied to them. Read more detail on Body Joints on page 43.
- Favourite App Toggle Heart on/off, favourited apps will appear on the Home Screen Slider



Tip: If you make changes to the Access Settings they will be saved. If you want to revert to default settings, click the Restore Defaults button at the top of the access settings window







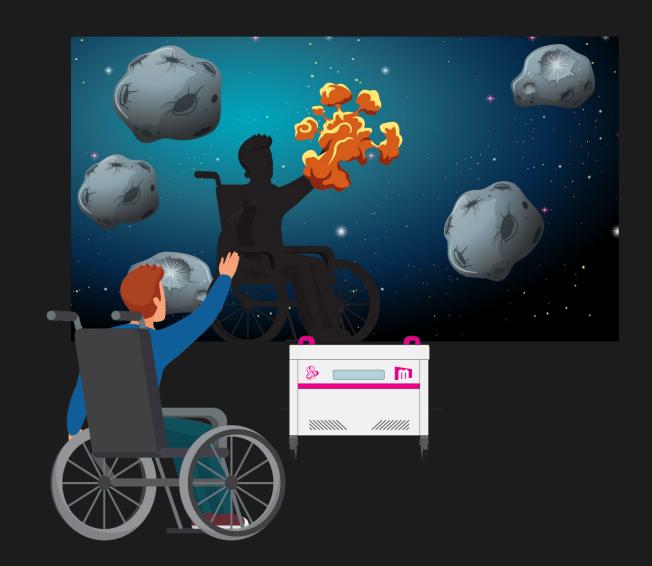


How it works

Magic Mirror's camera sensor detects 26 joints of the human body. Any number of these joints can be configured as controllers. This means, when a user moves a part of their body, they can interact with objects displayed in the screen.

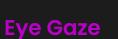
Premade apps will typically be setup for hands, head and feet only. You can add additional points in the access settings as show on page 14.

Troubleshooting Tips: To detect motion, the camera needs to be able to capture a body from the torso up. If a user is in a reclined position, they are able to interact with Magic Mirror using an alternative input.











Switches



Gamepads



Sound



Speech



Keyboard/Mouse

ACCESSIBLE INPUTS

In addition to the motion detection senor, Magic Mirror also supports a wide range of accessible input devices. It is possible to use any USB switch interface that maps switch inputs to keyboard keys. This means many legacy switch devices can be used with Magic Mirror. By assigning keyboard keys, adding voice commands and enabling sound input, it is possible to interact with any Magic Mirror app.

Connecting Eye Gaze

M

Magic Mirror software supports eye gaze. Simply connect a monitor to the PC's second display port and clone the image! NB: All gaze components sold separately, including the cable loom.

- Monitor and eye tracker Mount the eye tracker to the monitor
- Eye Gaze Cable Loom connect the eye tracker and monitor to the PC. USB for eye tracker and DVI/HDMI for monitor
- 3 Calibrate device/user drivers and necessary gaze software needs to be installed
- 4 Play run any Magic Mirror app and the eye gaze input will be enabled. Test gaze interaction: cursor or visual effect will appear when you look at the monitor.



Using Multiple Inputs Together



Magic Mirror can have 3 concurrent cursors in the screen at once: Gaze, Touch or Mouse and Game Pad Joystick.



Gaze Input





Mouse Input

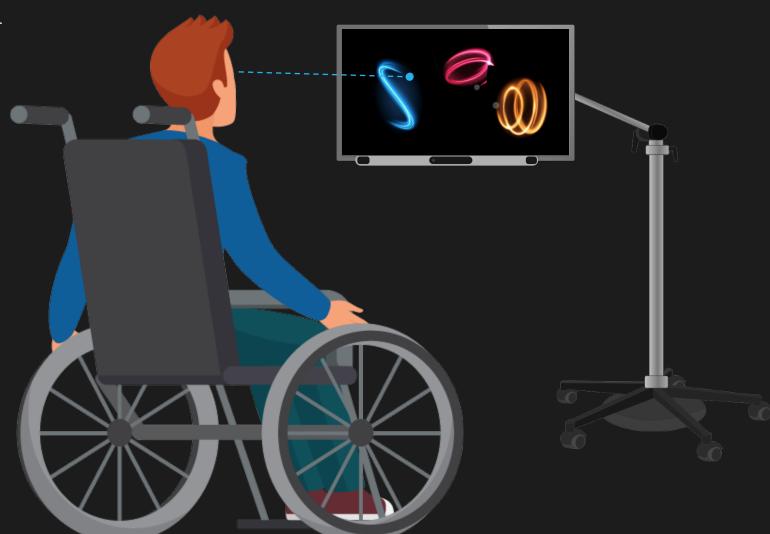




Joystick



Note: You can have 4 cursors but only 3 in the screen at once! Mouse and Touch use same input but can have different effects assigned.





MAGIC MIRROR SOFTWARE

Magic Mirror Software is easy to use and packed with useful features. The following section of the manual breaks down the different functions of the software UI using screenshots and easy to understand descriptions.

Home Screen

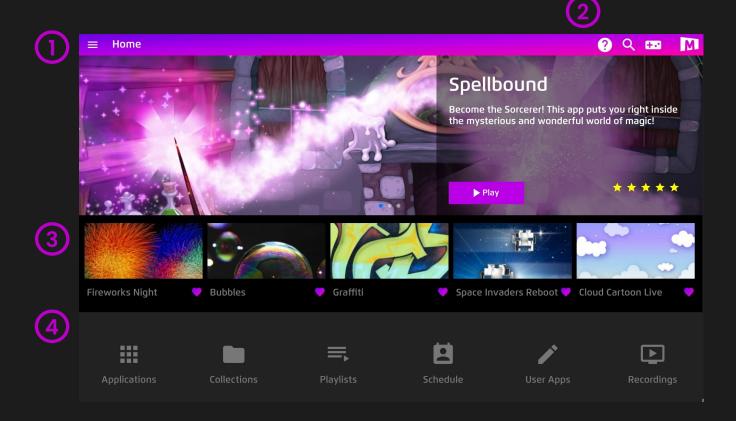
M

When Magic Mirror starts this is what you see!

The **Home Screen** interface is divided into 4 areas, providing a simplified navigation with favourited apps and software shortcuts.

How to use it

- Side Menu The side menu provides full software navigation; click to open. See <u>page 20</u>.
- **Top Bar** Opens Help Tips, App Search Bar and Control Panel
- Favourites Slider shows apps that have been favourited. To favourite an app, click the heart icon in the app launch window, turning it purple.
- Shortcuts Navigate to applications, collections, playlists, schedules, custom app builds and recordings from the shortcuts bar.



INFO: If you want to find out more about a function in Magic Mirror select the ? Icon in the top bar. This will overlay helpful explainer text.

≡ Side Menu

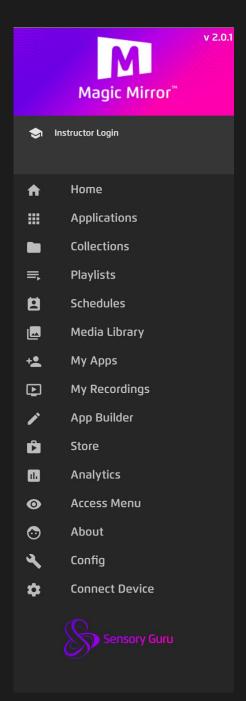
The hamburger icon located at the top left of header menu opens the side menu.

The side menu is the primary navigation menu used to access the different areas of the software. Simply touch or click on a menu item to navigate.

Instructor Login

Magic Mirror has an Instructor login system. Click Instructor Login at the top of the side menu to create a new account or to login to an existing account. See <u>page 75</u> for full details on Instructors and Users.

INFO: It is not necessary to have multiple logins. The system has a default setup that means you do not need a login unless it is desirable





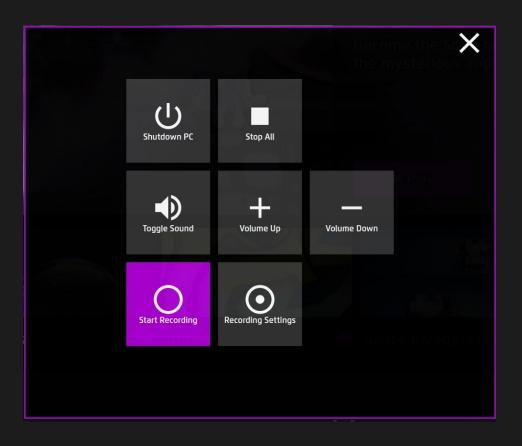
Control Panel

The Control Panel is opened by selecting the control panel icon in the header bar. This is accessible when using a smartphone or tablet running Magic Mirror control app.

How to use it

- (1) **Shutdown PC** –closes software and shuts down PC
- Stop All Exit running app and displays a holding screen. Typically a looping logo animation
- Toggle Sound Mute/unmute sound
- **Volume + / -** Turn system volume up / down
 - Start/Stop Recording Start/Stop a screen recording on the fly while an activity is running
 - Recording Settings See recording settings on <u>page</u>
 85 for details





INFO: When a tablet is connected to Magic Mirror the software enters tablet mode. If you press Stop All you will see a looping logo screen. This is to prevent having the UI displayed on the projector. The same thing is seen between app transitions. Press ESC on the keyboard to go back to PC mode with the full UI visible on projector.

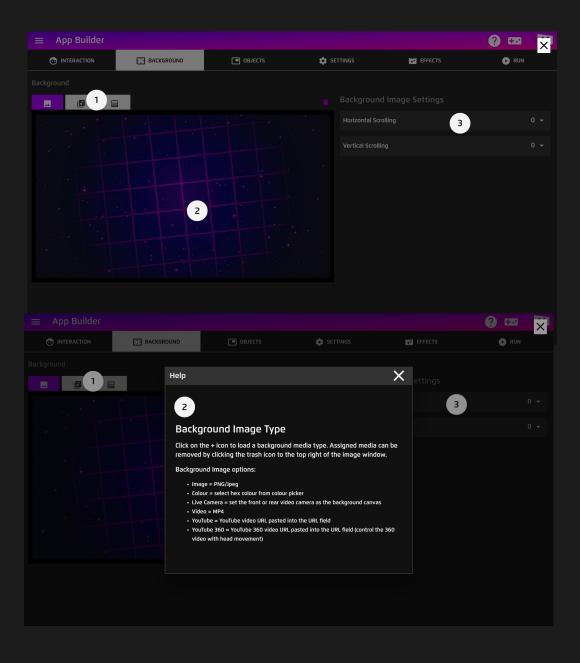
? Help Tips

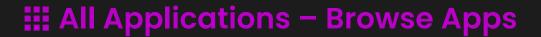
Unsure of what part of the Magic Mirror software is for?
Use the built-in help tips to guide you through using
the interface. It is like having a software manual
accessible whenever you need it.

How to use it

- Open Help Tip Overlay Select the help tip icon
 Help Tip Overlay You will see numbered dots
 overlay the Magic Mirror interface.
- Select Help Tip Click or touch a number to open the help tip for that segment of the software.
- Close Help Tip Press the X icon in top right of the pop-up.
- Escape Help Tip Overlay Press the X icon to the top left of the screen,







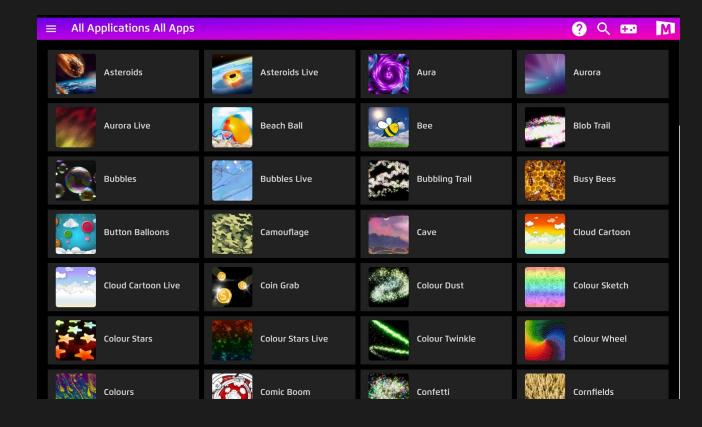


How it works

Magic Mirror comes with 150+ interactive activities and games. The All Applications section is where you browse all pre-made applications.

How to use it:

- Navigate to All Applications from the Home Screen Shortcuts or via the Side Menu.
- 2 Search Use the search function in the top bar to search All Applications.
- Play Select an app to open the Play App launcher.



App Interaction Modes

Magic Mirror apps will fall into one of 3 primary modes. These modes make it possible to explore a range of different environments and concepts:

1 Live Mode

Augmented reality mirror mode with live camera view of the room you are in. Interactive objects will overlay the room.

2 Inset Mode

Places you into an immersive scene. If you are familiar with the idea of a green screen this mode will be familiar. No green screen is required!

3 Shadow Mode

Places you into an immersive scene as a shadow.

TIP: If you are working with people who do not like seeing their image reflected in a mirror, explore the shadow mode apps. It is possible to make apps in any of these modes using Magic Mirror app builder







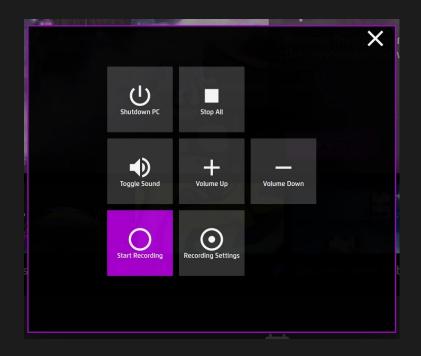


じ Shutting Down Checklist



1. Shutdown PC from Control Panel

The Magic Mirror PC can be shutdown from the software's control panel.



2. Power off Projector

Using the projector remote, press the off button twice to shut down the projector.

Note: The projector will automatically power down if no signal is detected for >5 minutes.





ACCESS MENU

Magic Mirror features a simplified UI design that can be used with eye gaze. This menu is designed to radically simplify working with Magic Mirror as it only allows apps to be selected and launched. It also works with keyboard and is good for anyone who wants to keep things simple.

Access Menu - Apps Screen

M

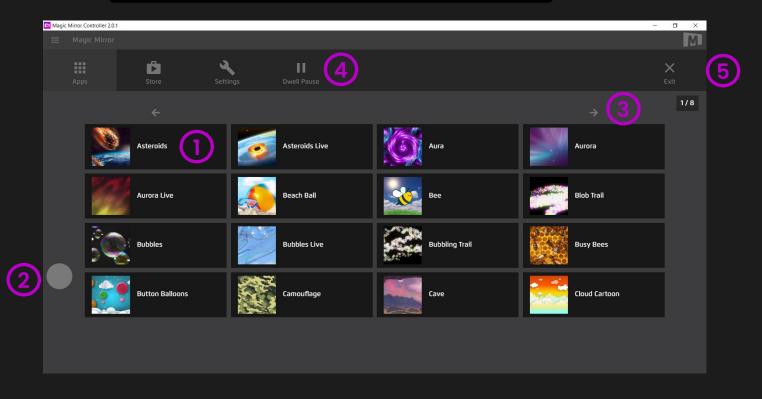
How it works

When you select Access Menu from the sidebar, the UI transforms into the simplified layout as shown in the adjacent image. This menu is responsive to mouse and eye gaze. If you have a second monitor with an eye tracker setup, the eye gaze user can control Magic Mirror

How to use it:

- Launch an App click / dwell on an app icon app opens direct without second stage options
- 2 Cursor- appears as round dot
- Navigate apps 16 apps per page use the arrows to view apps. When clicking or dwelling on button it will highlight blue. Apps arranged alphabetically
- Pause Gaze Pause and Un-pause the eye gaze selection
- **Exit** Opens option to Exit to Home or Close Magic Mirror

TIP: Press F9 to switch between Gaze Menu and the standard view



INFO: If you quit Magic Mirror in Access Menu view, it will reopen in Access Menu view – last known state is recalled.



Access Menu - Settings

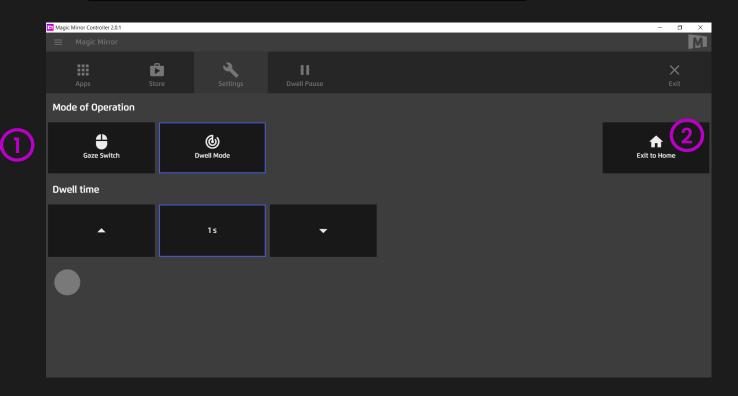
How it works

In settings you can assign Dwell Time for the user interface. This is the duration that a user needs to look at a button for it to select. It is possible to use Gaze Switch mode whereby the eyes point at the button and a Switch input selects it.

How to use it:

- Gaze Switch OR Dwell if Dwell is selected you can configure the Dwell Time below
- Exit to Home changes the UI back to Standard view.
 Once back in Standard view it is not possible to return to the Access Menu using eye gaze

TIP: Press F9 to switch between Gaze Menu and the standard view



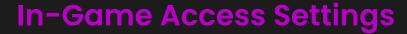
INFO: If you quit Magic Mirror in Access Menu view, it will reopen in Access Menu view – last known state is recalled.



IN-GAME ACCESS SETTINGS

Magic Mirror features an in-game, off-screen access settings menu that allows instructors and users to change many parameters while an app is running.

The access menu is gaze, touch, voice and mouse controllable.



How it works

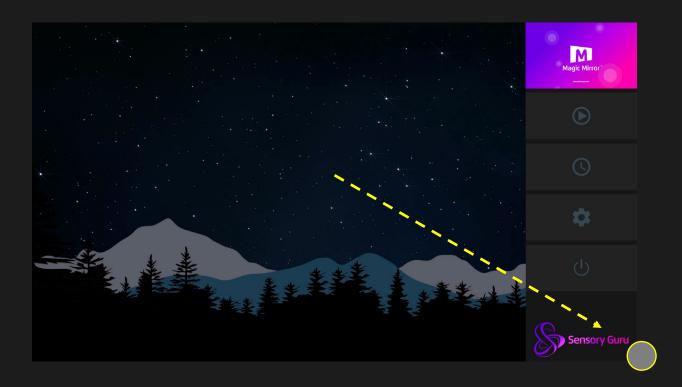
While an app is running – move mouse/gaze cursor to the bottom right corner and the menu will open, as shown in the adjacent image. If using speech, use commands "open menu" and "close menu". If using keyboard press F8 to toggle menu on/off.

How to use it:

- Toggle Gaze Interaction Button play/pause Eye Gaze interaction.
- **Dwell settings** increase and decrease dwell time
- Settings button access and edit cursor, gaze and switch settings.
- **Exit button** exit app and return to your previous location in the software



TIP: Press F7 key to deactivate the side menu from gaze control while app is running. This can prevent unintended distractions



INFO: Control the Access Menu using voice commands. See sidebar – config – voice commands



In-Game Access Settings – Gaze, Dwell and Exit

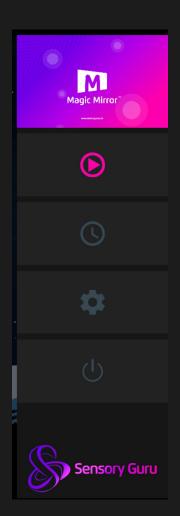
Toggle Gaze Interaction Button – When set to pause, gaze interaction will be temporarily deactivated, or paused.

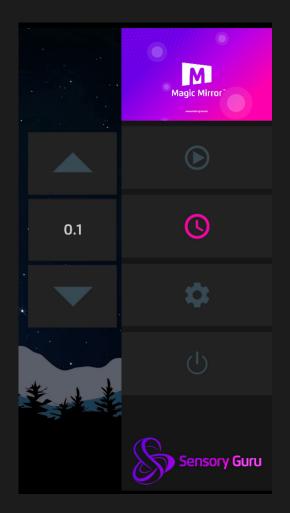
To reactivate gaze interaction, open the access menu and select the pause button to toggle it to play.

Dwell Settings – The dwell time can be increased and decreased by increments of 0.1 seconds, allowing the gaze interaction time to be tailored to user requirements.

Dwell setting will reset to default once app has been closed.

Exit App – When selected, the software returns to the screen you were on before running the app.



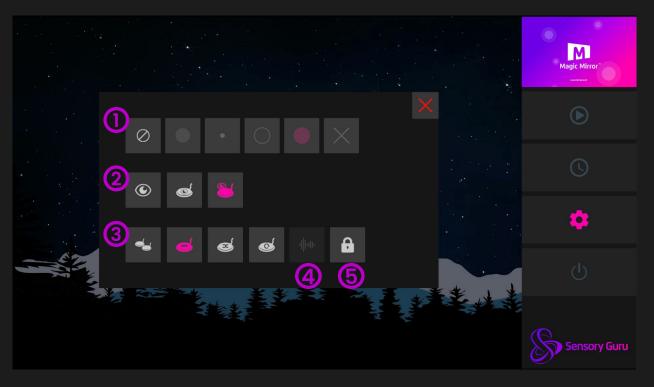




In-Game Access Settings – Cursor & Switch Settings



- Cursor Settings Turn Cursor on/off. Select cursor style
- **Gaze Modes:**
 - 1. Gaze Only objects only interacted with using gaze.
 - **2. Switch on Gaze** objects triggered when user gazes on object and activates switch
 - 3. Gaze and Switch interact with objects using gaze or switch independently.
- **Switch Modes**
 - 1. Select and interact uses two switches; one to scan objects, the second to trigger the object.
 - 2. Sequential single switch mode; switch triggers objects in order of appearance.
 - 3. Random single switch mode; switch triggers objects in random order.
 - 4. Select All trigger all object with one switch all at once. Good for maximum single action impact!



Sound Switch- If enabled in Config with a Mic setup in Recording Settings, this button activates sound interaction using the mic. This is advanced functionality so read the tech notes about sound switch on <u>page 45</u>.

(5) **Dwell Lock** – applies the eye gaze dwell time to all cursors. This means mouse, joystick and gaze will all have same dwell time for object interactions



COLLECTIONS

Collections provides the facility to create your own named app collections so they can be easily retrieved. This means that you can create a Collection for an individual, class group, time of year or any other reason you can think of. There is no limit to the number of collections you can make.



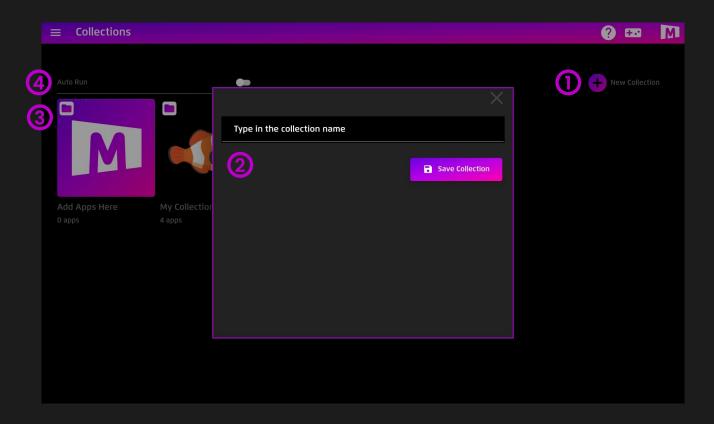
Collections – Create a collection

How it works

Collections allow apps to be grouped together, making them easy to access. Collections can be used to group favourite apps, curate apps around a theme and more.

How to use it:

- Create a Collection Select the + New Collection icon, a collection creation pop-up will open
- Name the Collection provide a name for your
 Collection in the input field and save; the newly create
 Collection will appear on the Collections page.
- Open Collection Editor Click to open the your new Collection folder
- Auto Run Toggle ON to allows apps to be loaded without the second stage pop-up window. This is good for enabling users to run apps in their collections direct from the app icon.



Note: There is no limit to the number of collections that can be made, nor no limit to how many apps they can contain.

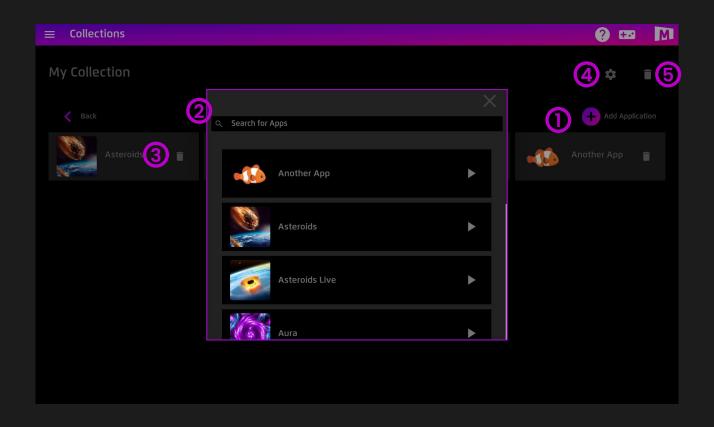


Collections – Add apps to collections

How to use it:

- Add Apps With the collection folder open, select +Add Application to open a pop-up.
- 2 Select Apps Scroll through the list of apps in the pop-up or search by name. Click the play icon to add to the collection.
- Remove an App select the bin icon next to the App
- Edit Collection Name Select the cog icon
- **Delete a Collection** Select the bin icon in the top right corner.

Note: You can go back into the collection, add and remove apps at any time. You can also rename the collection, delete specific apps or the entire collection.





PLAYLISTS & SCHEDULES

Playlists allow you to create lists of apps that can be scheduled by Magic Mirror to play automatically at predefined dates and times. This feature is great for environments where instructor intervention is not possible, such as Waiting Areas, Children's Play Centres, or Business Locations.



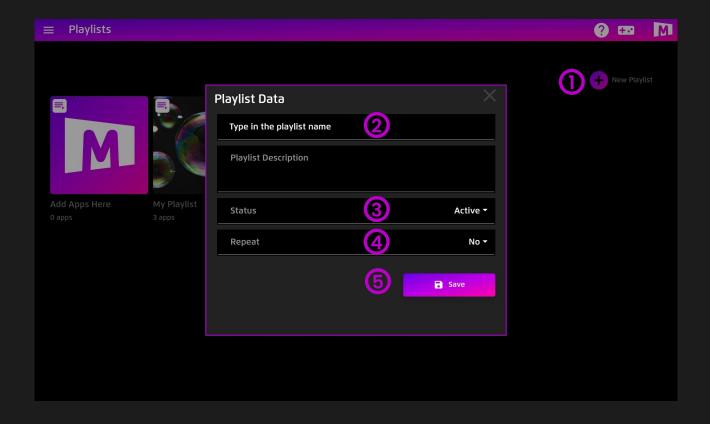
₹ Playlists - Create a playlist

How it works

Automate Magic Mirror by curating a list of apps that automatically play in a sequence of your design.

How to use it:

- Create a Playlist click on the +New Playlist Button; a Playlist Settings pop-up will open.
- Name the Playlist provide a name and description for your Playlist in the input fields.
- **Status** Set status to ACTIVE to allow your playlist to be scheduled. INACTIVE playlists cannot be scheduled.
- Repeat Choose whether the Playlist repeats on a loop or not.
- 5 Save Select Save to save settings and add the Playlist to Playlists





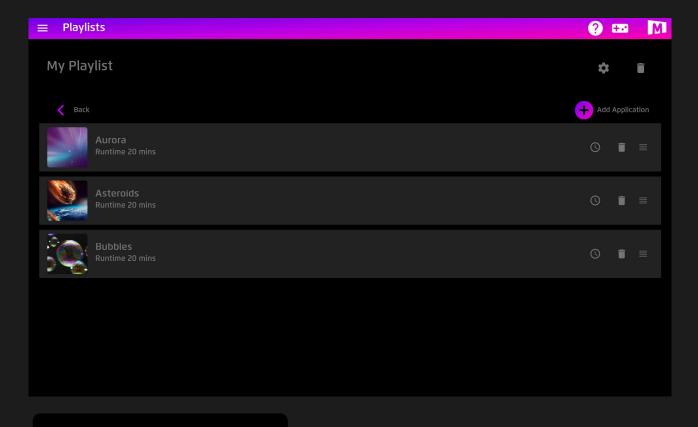
=▶ Playlists – Curate a playlist

How it works

There are a number of options when curating a playlist; add apps, edit the run order and define how long apps play for before moving onto the next app.

How to use it:

- Add Apps with a playlist select +Add Application and select an app from the pop-up
- **Reorder Apps** click the list icon and drag app to reorder.
- Set Runtime select the clock icon and input how many minutes you want the app to run for.
- **Remove an App** select the bin icon next to app.
- **Delete Playlist** select the bin icon in the top right corner.
- **Edit Playlist settings** select cog icon to open and edit playlist settings.



Note: To program when a playlist plays, use the Scheduler.

Schedules – Schedule Playlists

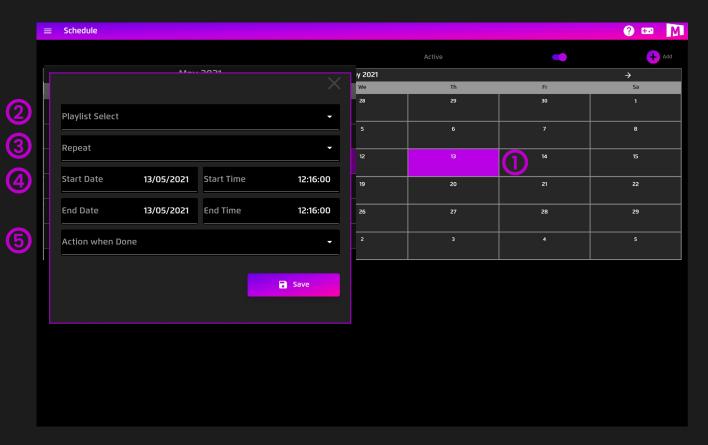


How it works

Magic Mirror supports the playback of scheduled playlists. This is designed to allow operator free use of Magic Mirror. Simply schedule a playlist on the calendar and it will play automatically.

How to use it:

- To schedule a playlist Select a date from the calendar, then click the +Add button.
- Select playlist from the dropdown.
- Select whether to have the playlist repeat weekly or not repeat. Default is no repeat.
- 4 Set a start and end time
- Choose what happens when the playlist end time is reached; Exit to Magic Mirror Home Screen,
 Shutdown PC or Show Blank Screen.



Note: You can preschedule as many days as you like and even add multiple playlists a day



APP BUILDER

The Magic Mirror App Builder is a useful tool for creating accessible interactive games and activities. With just a few taps you can create stunning immersive experiences tailored to the needs of the people in your environment. Magic Mirror can bring your ideas to life and open-up new possibilities for user interaction.

App Builder – Create an App

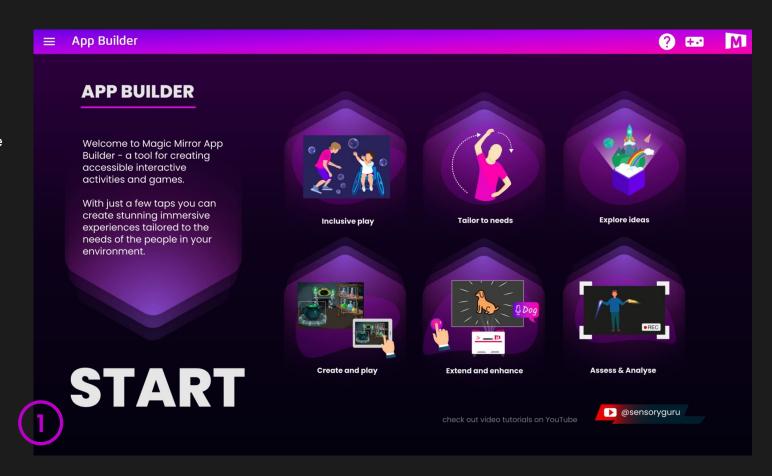


How it works

All activities made with Magic Mirror are called apps. The App Builder allows you to create highly personalized interactive activities and games using a step-by-step process.

How to use it:

To start creating an app, select START from the App Builder splash page to open the builder.

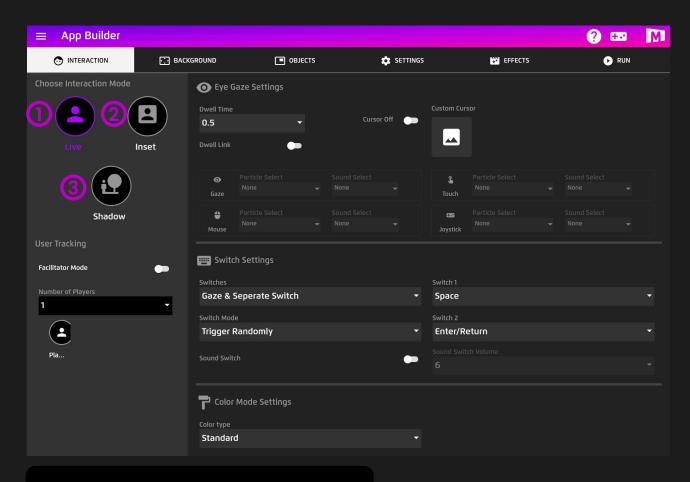




App Builder – Interaction Modes

Select an interaction mode for your app based on one of the three modes:

- Live augmented reality mirror mode with live camera view of room you are in.
 Interactive objects will overlay the room.
- Inset places you into an immersive scene. Think green screen! Inset mode removes your live background, replacing it with whatever background has been selected.
- 3 Shadow places you into an immersive scene and the body appears as a shadow.



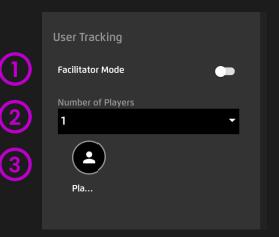
Note: You can can change mode anytime. In the event you switch from Inset to Live mode the background image settings will be bypassed.

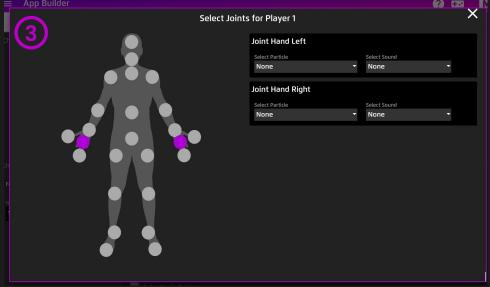


O App Builder - Interaction: User Tracking

- Facilitator Mode sets player count to 1.

 This means the first player in the scene will be able to interact and all other users will be ignored.
- 2 Number of Players Set number of players from 1 6, defining how many people can interact at any one time. Each player can be assigned interaction joints.
- Interaction Joints Make different parts of a players body interactive, turning joints into controllers. Select a player icon to open the joint selection window.
 Choose from 26 body parts and assign particle effects and sounds to each body part.





Top Tip! Selected body parts can be integrated into gameplay to work on proprioception and co-ordination. For example; challenge players to hit targets using only their left foot.

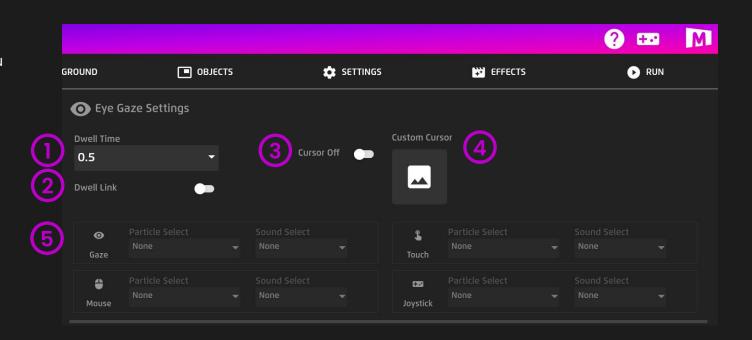
Top Tip! Facilitator mode is great for 1:1 sessions where the facilitators role is to help without taking over the interaction or making things happen that are wrongly attributed to the player



App Builder – Interaction: Eye Gaze Settings

- Dwell Time set default dwell time for interaction objects. Dwell time can be changed from Access Menu when an app is running, but will revert to default when app is restarted
- **Dwell Link** all cursor types inherit dwell time. If set to OFF, other cursors will react immediately.
- 3 Cursor Off Set cursor to OFF to hide all cursors
- Custom Cursor Select image icon to open cursor library. Selected custom cursor image is applied to all inputs.
- **Cursor Types** Cursor options are; gaze, touch, mouse and joystick. Click the input icon to turn cursor on/off.

Set particle effects and sounds to each cursor type.

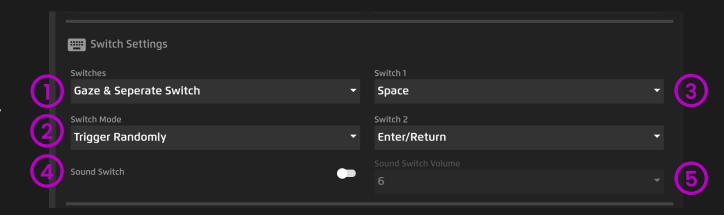


Top Tip! Assigning different particle effects and sounds to different cursors allows for easy differentiation of input types.



O App Builder - Interaction: Switch Settings

- Switches There are 3 switch options:
 - 1. No Switches = No switch inputs enabled
 - 2. Switch on Gaze = Eyes point, switch selects
 - 3. Gaze & Separate Switch = Both inputs work independently
- Switch Mode There are 4 switch mode options:
 - Select & Trigger = two switch scanning (Switch 1 scans and Switch 2 selects as default)
 - 2. Trigger Sequentially = Interact with objects in order they appear (Switch 1)
 - 3. Trigger Randomly Interact with objects in random order (Switch 1)
 - 4. Trigger All = interact with all objects at once (Switch 1)
- **Switch 1 / Switch 2** Select input for Switch 1/2. Default inputs are Spacebar/Enter.



- Sound Switch Sound Switch enables the system microphone to be used as an input for object interaction. This means any sound can interact. Turn on to enable.
- 5 Sound Switch Volume Activated when Sound Switch is on. Volume setting relates to sound sensitivity. Level 1 = most sensitive. In order to set mic to right level for environment, trial and error is required.

Top Tip! Sound on Gaze; if you would like objects to be interactive to sound only when user is looking at object, set 'Gaze as Switch' on switch mode. This allows user to make sound at any time but only interact when looking at object.

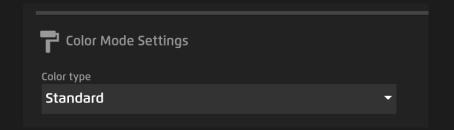


O App Builder - Interaction: Colour Mode Settings

Colour type - allows you to output the app build with a colour filter to illustrate how the graphics may appear to someone who is colour-blind. There are 4 options:

Options:

- Standard normal colour mode (default)
- Protanopia Lacking red cones for long-wavelength, those with this condition are unable to distinguish between the green-yellow-red section of the spectrum
- Deuteranopia Lacking green cones for mediumwavelength, those affected are unable to distinguish between the green-yellow-red section of the spectrum
- **Tritanopia –** Lacking the short-wavelength cones, those affected see short wavelength colours (blue, indigo and spectral violet) greenish and drastically dimmed, some of these may appear black.





NB: this feature is provided for informative reasons. It is not envisaged that apps get created with these filters applied.

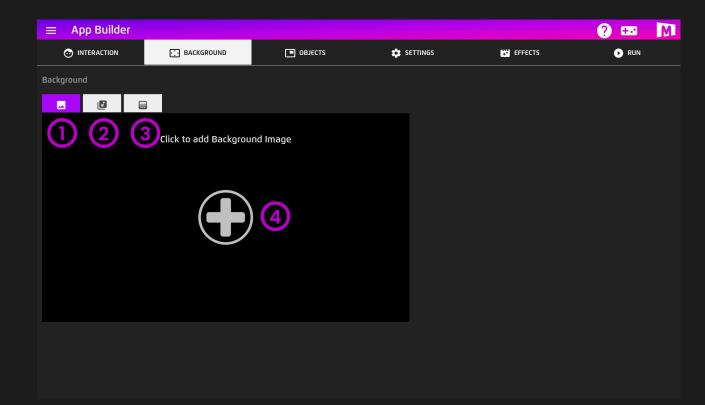


App Builder – Background

How it works

The Magic Mirror App Builder provides a range of options to create a canvas for your app on the background tab. There are 3 background media types, each assigned with their own tab:

- Background Image (inactive when interaction mode set to live)
- 2 Sounds Add background music, sounds and ambience
- Image Mask appears over the top of the background image, players and objects
- Add Background Media Select the + icon to load a background media type. Assigned media can be removed by click the trash icon to the top right of the preview window.

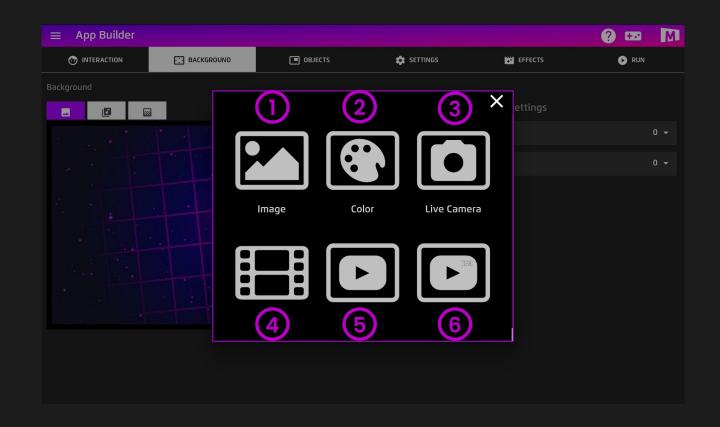




App Builder – Background: Image Types

There are 6 types of background media that can be loaded as a background canvas for an app including images, colours and videos.

- | Image PNG/JPEG
- Colour select hex colour from colour picker
- 3 Live Camera set front or rear camera as background
- Video MP4
- **YouTube** YouTube Video URL pasted into the URL field
- 6 YouTube 360 YouTube 360 URL pasted into URL field. The 360 video can be controlled using head movements if an eye tracker is connected





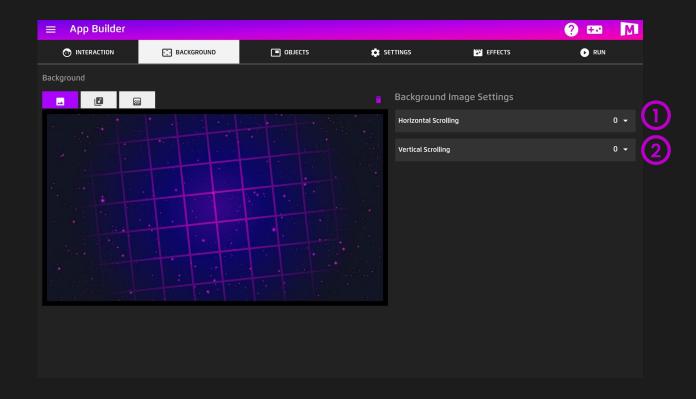
App Builder – Background: Image Scrolling

Background scrolling adds motion to a background image and can be used to create dynamic gaming environments.

- Horizontal scrolling makes image move left or right; select positive value to make image scroll left and negative to scroll right.
- Vertical scrolling makes image move up or down; select positive value to make image scroll down and negative to scroll up.

Note - Number relates to speed of scrolling 1 = fastest 0 = static.

Top Tip! Use seamless images to create an infinite scrolling effect. Type 'Seamless' into media library search field to locate background images optimised for this purpose.





App Builder – Background: Sound

Add a background soundtrack to your app

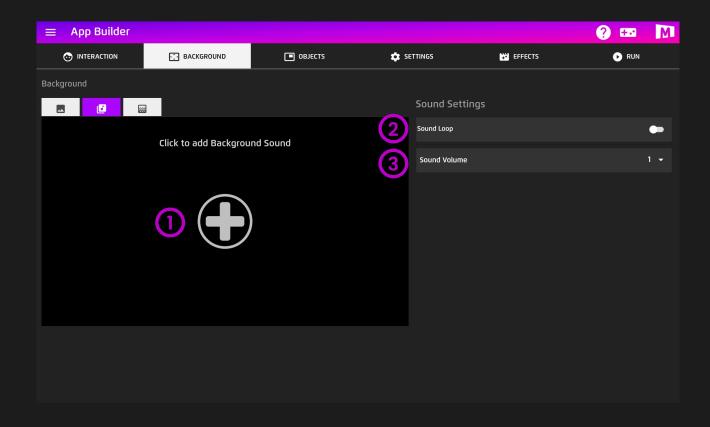
- Add Sound Select + icon to open Media Library and select a sound.
- Sound Loop Sound Loop is ON as default. Turn OFF to make the background sound only play once.
- **Sound Volume** adjust background sound volume as required; 1 = loudest.

Supported sound formats









Top Tip! UseMP3 sound files to keep file sizes down.



App Builder – Background: Foreground Mask

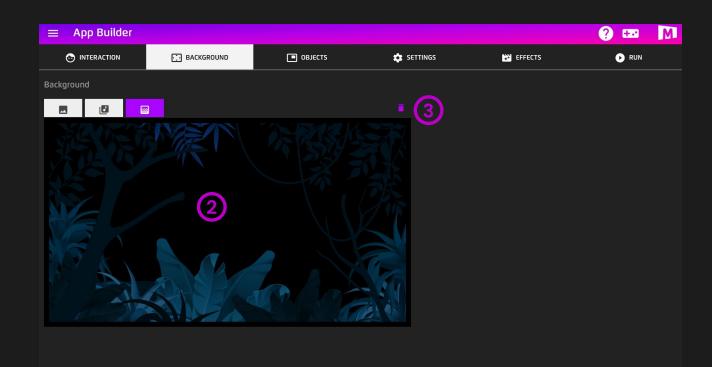
Foreground Masks add depth to the app canvas by overlaying the background, players and any objects in gameplay.

- Click + icon to add foreground mask. Opens media library.
- Click on existing foreground mask to replace with an alternate from media library.
- 3 Select trash icon to remove selected mask.

Supported formats



Foreground masks must be a PNG file format to preserve transparencies.



Top Tip! Foreground masks can be highly effective when exploring anticipation, occlusion and depth perception.



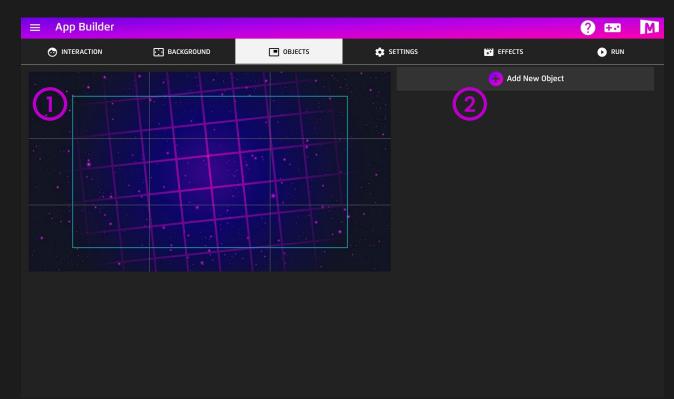
App Builder – Objects

What are objects?

Objects are images or animations that can be interactive or non-interactive; you can blow them up, move them and get them to do things by interacting with them; or they can be non-responsive.

Objects can be loaded in a sequence, or appear at random; they also can be manually interacted with using speech commands and switch inputs. You can display a single object or several.

- Design Canvas The canvas displays assigned background media and allows objects to be manipulated and arranged as you choose.
- Add New Object Opens pop-up to select object type and adds selected object to the canvas, ready for editing.



INFO If an image mask has been assigned, it will show semi-transparent over media so you can position objects that will start behind the mask (occluded).



App Builder – Objects: Object Types



When 'Add New Object' is selected, a pop-up will appear with 5 Object Types to choose from;

Object Types

Standard – Interacted with using gesture, eye gaze and touch

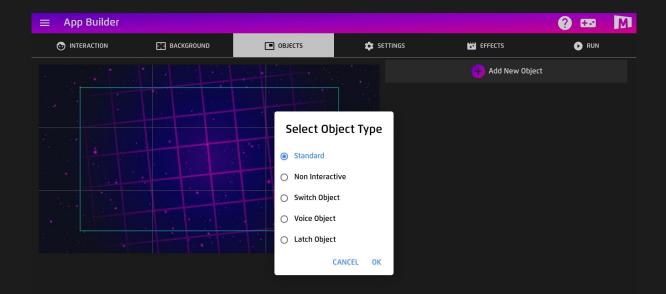
Non-interactive - this object is non-responsive

Voice – object appears to a defined speech command

Switch – object appears when a switch (keyboard key) is activated

Latch – has its own dwell time and can be selected, moved and dropped. Open / Close hand gesture allows user to grab and drop a latch object

When an object type has been select, a numbered square will appear in the top left corner of the canvas, ready for editing.



TECH TIP: Standard objects are the objects you want to use if you are looking to add logic to your interaction such as, one object appears, when one is triggered a second appears and so on. Standard objects comply with sequential game logic. Non-interactive object behave the same. Latch objects work with Standard and Non-Interactive objects.

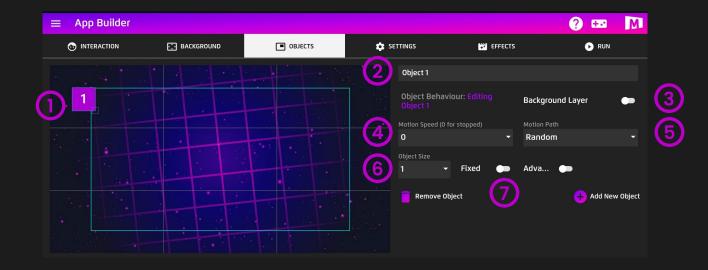
Voice and Switch objects can only be used on their own.

App Builder – Objects: Object Behaviour



Adjust the speed, movement path, size and name of objects created in the app builder;

- Object When you add an object it will appear as a numbered square on the canvas.
- Object Name Assign a name to identify an object. This is particularly useful if using analytics. Default naming convention is Object 1, Object 2 etc
- Background Layer If ON object appears behind other objects
- 4) Motion Speed speed that object travels; 0 = static
- Motion Path path that object takes after appearing.
- 6 **Object Size -** Adjust size of object. Object can also be adjusted by using object handles on the canvas.
- **Fixed -** the pre-interaction image remains visible all of the time. Post interaction setting is ignored if fixed setting is on.



- Remove Object Use bin icon to delete object from canvas
- Add New Object Creates a new object and inserts on the builder canvas.

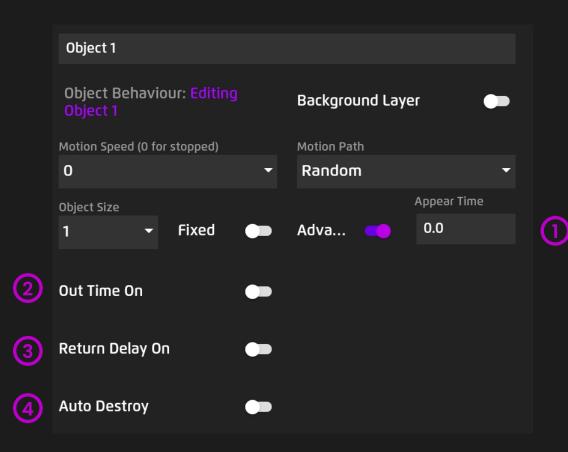


App Builder – Objects: Object Behaviour Advanced Settings

Toggle Advanced ON to open additional object behaviour settings. When toggled on, advanced settings will bring up time fields where you can input time (seconds) settings.

Settings

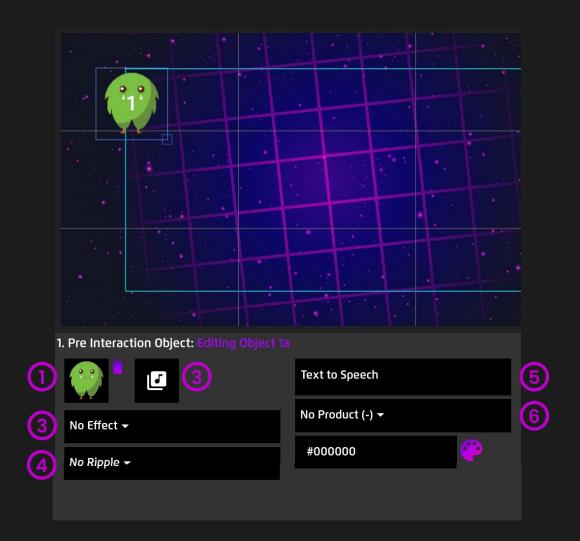
- Appear Time initial interval before object appears for first time. Subsequent object appearances combine this value and return delay value
- Out Time time it takes for object to disappear after interaction
- Return delay period an object is off screen following interaction
- **Auto Destroy -** time interval that object remains visible if not interacted with.





App Builder – Objects: Pre Interaction Object Settings

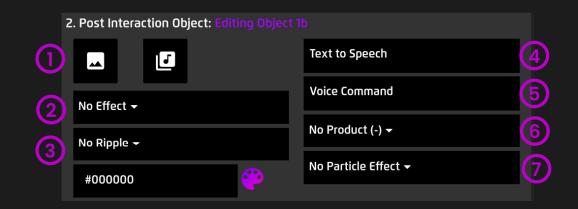
- Object Image Click on image icon to assign image. This image will be seen as soon as the object appears on the display
- Object Sound -Click on sound icon to assign sound from media library. This sound will be heard as soon as the object appears on the display
- Image Effects Opens effects list to apply image effects that change look of object.
- **Ripple Effects** The ripple options distort the screen creating a wave like ripple effect at end of animation sequence.
- Text to Speech Type a word in the field and the system will speak the word when object appears
- 6 Product and Colour If Magic Mirror is connected to DMX equipment (LED Lighting etc), select product to turn on and assign colour with colour picker when object appears.





App Builder – Objects: Post Interaction Object Settings

- Object Image and Sound Click on image and sound icons to assign media. This image and/or sound will be seen and heard when user interacts with the object.
- Image Effects Opens effects list to apply image effects that change look of object.
- Ripple Effects The ripple options distort the screen creating a wave like ripple effect at end of animation sequence.
- **Text to Speech** Type a word in the field and the system will speak the word when object is destroyed.
- 5 Speech Command Word or phrase which when spoken into microphone activates object interaction
- Product and Colour If Magic Mirror is connected to DMX equipment, select product to turn on and assign colour with colour picker when object appears.
- Particle Effect Open particle effects list and assign particle effect to trigger interaction



Top Tip! If you want an object to explode with a particle effect, do not assign a post interaction image, otherwise the image will appear in front of the effect.



App Builder - Objects: Non-Interactive Objects

How it works

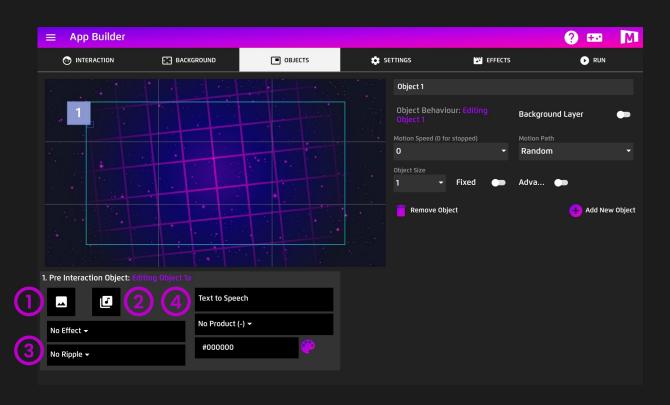
Non-Interactive Objects are objects that appear, but are not interactable. They have only the pre-interactive state.

They can be assigned object behaviours and object properties but do not respond to interaction.

Settings

Non-Interactive Objects have a smaller number of settings with options for:

- Object Image Set image for the object
- Object Sound Set a sound for when the object appears
- **Effects and Ripples** Set effect and/or ripples to change look of object when it appears
- Text to Speech Assign a TTS string that will trigger when the object enters the display.





App Builder – Objects: Switch Objects

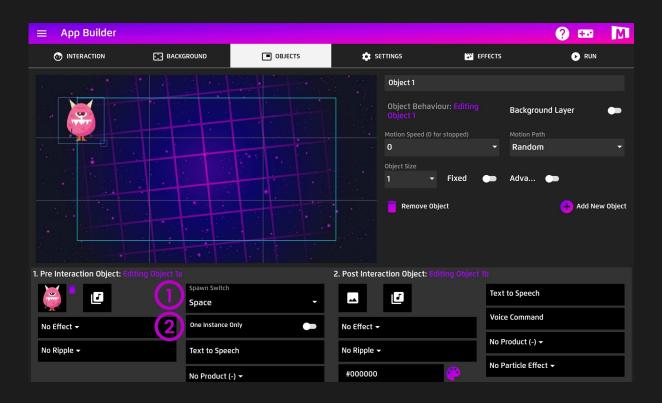
How it works

Switch Objects are called into a scene when a switch is activated. You can call one instance of the object into the scene, or multiple objects. Switch objects cannot work with other object types.

Settings

- Spawn Switch provides a list of switch inputs that when assigned, will make object appear on the display. Default is Space key.
- One Instance Only Every time the switch is activated, a new object instance will appear.

If One Instance Only is toggled ON, only one instance of object can be called into the scene.



Top Tip! This feature is useful if you want objects to appear in known locations on command, such as when directing attention to specific areas of the screen

App Builder – Objects: Voice Objects



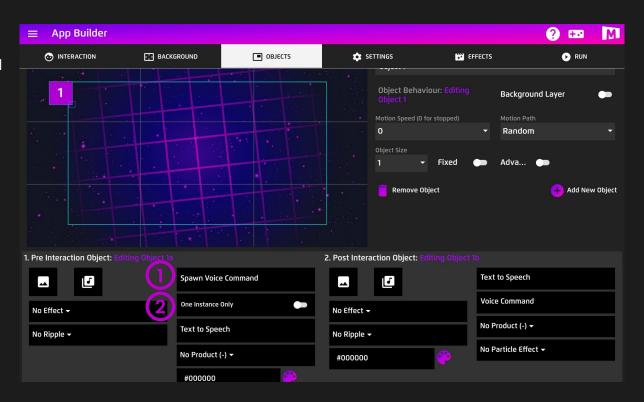
How it works

Voice objects are called into a scene when an assigned word is detected by the microphone. You can call one objects instance of the object into the scene, or multiple objects.

Voice objects cannot work with other object types.

Settings

- Spawn Voice Command input field where you can assign a word that will make the object appear on the display when spoken and detected by the microphone.
- One Instance Only Every time the speech command is detected, a new object instance will appear.
 - If One Instance Only is toggled ON, only one instance of object can be called into the scene.



Top Tip! This feature is very useful for pairing word sounds to objects. For example, every time you say "Dog" a dog image appears in the screen.



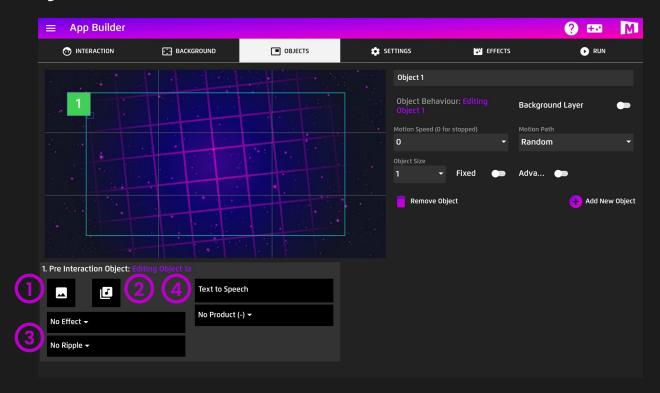
App Builder – Objects: Latch Objects

How it works

Latch Objects interact differently to the other object types. Objects can be selected, moved and dropped across the display. They can also work alongside Standard and non-interactive objects.

How to use it

- Gesture Interaction When using gesture to interact with a latch object, the hand needs to close to select the object and open to release it.
- Gaze Interaction When using gaze interaction, latch objects are selected with dwell and released when the gaze is within a defined area. This is set in app builder settings, see page 66 for more.



Settings

Latch Objects have reduced settings, with options for:

- 1 Object Image
- 3 Effects and Ripples
- 2 Object Sound
- 4 Text to Speech



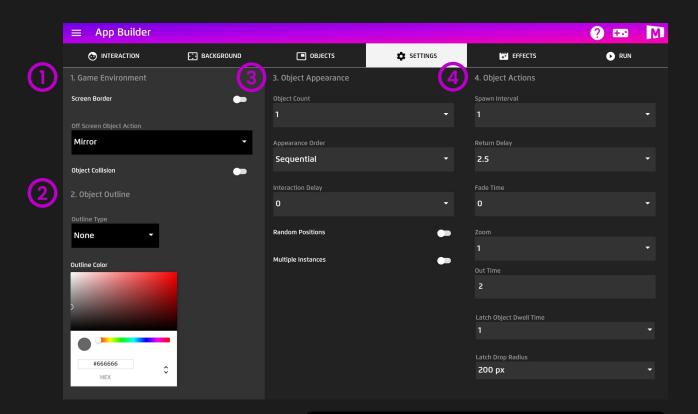
App Builder – Settings

App Builder Settings allows you to edit the game environment and how objects behave and interact with each other.

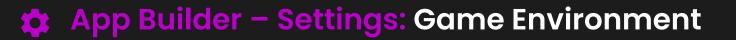
Sections

There are 4 sections to the App Builder Settings;

- Game Environment Settings for physics in the game environment, affecting how objects behave in the display and with each other.
- Object Outline Settings to add an outline to objects
- Object Appearance Settings for how many objects can appear on the display and how they appear.
- Object Actions Settings for how objects behave when interacted with.

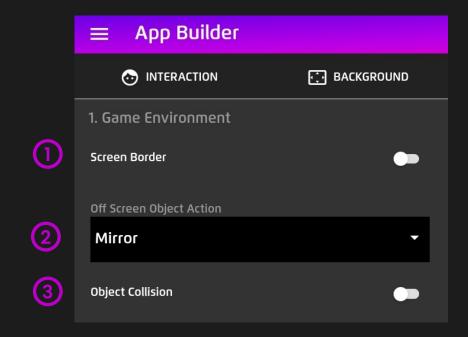


TECH INFO: above you can see Latch Object Dwell
Time and Latch Drop Radius, this indicates a
latched object is selected. If there is no Latch
Object in the scene, these options will not appear!





- Screen Border When turned on objects collide with the screen borders, else the objects move outside the border and wrap to appear to from the other side of the screen.
- Off-Screen Object Action When objects leave the screen they can either:
 - 1. Mirror appear on the other side of the screen
 - 2. Destroy not appear again
- Object Collision When object collision is on, physics is applied causing objects to collide and bounce off in different directions.



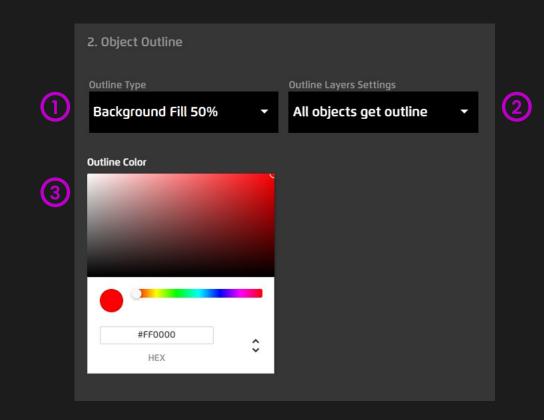
Tip: If you have Object Collision enabled and use latch objects – the objects that are latched will push the other objects around. Think catching butterflies in a net etc.



App Builder – Settings: Object Outline

- Outline Type Choose to show an outline around the object when it is in an active state. Dropdown options for show outline width and fill opacity level.
- Outline Layers Settings The Outline Layers Settings dropdown, here you can choose outlines to All Objects or objects that appear only on the Foreground or Background.
- Outline Colour Using the colour picker, select a colour for object outlines.

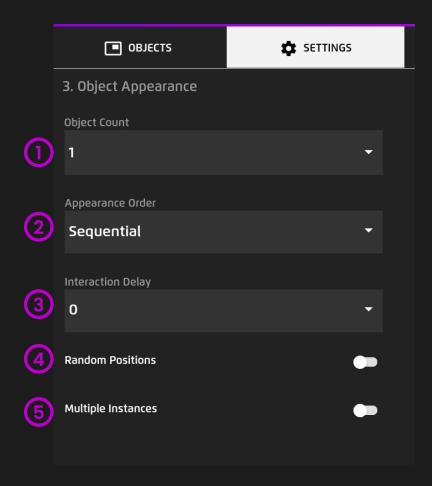
Tip: Outlines are most useful when used with eye gaze and switches. They highlight around the object to indicate which object is currently selected. Use Select & Trigger switch mode with outlines else they wont appear. Select and Trigger is also known as switch scanning.





App Builder – Settings: Object Appearance

- Object Count Sets the number of concurrent object instances visible on screen at any one time. If it is set to 1, you will only ever see 1 object at a time.
- Appearance Order Sequential means objects appear in order of creation 1,2,3 etc. Random applies a random order selection to object appearance.
- Interaction Display Time that the object appears and remains visible before it can be interacted with. Applies to all objects.
- Random Positions Applies random positioning to all objects globally. This means no two objects appear in the same place twice.
- Multiple Instances With multiple instances 'ON' it is possible to have several of the same object appear on the screen (number is set with the object count). If this setting is on you need to turn on Random Positions or the objects will stack up.

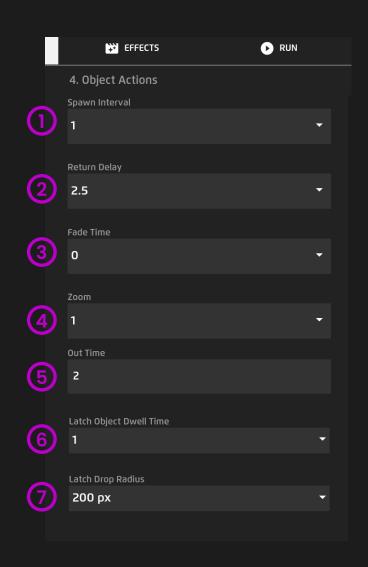




App Builder - Settings: Object Actions

- Spawn Interval Time interval between each object appearance. 0 = all objects appear at the same time.
- Return Delay Time interval before all objects reappear after interaction.
- **Fade Time** The time period the destroyed image is visible after interaction.
- Zoom a visual effect that scales the interacted image uplike zooming in.
- **Out Time** Time it takes for the object to disappear after interaction. Fade Time takes priority over Out Time.
- 6 Latch Object Dwell Time –Set Dwell Time for selecting and moving a latch object when using Eye Gaze
- **Latch Drop Radius** The drop radius is the area that eye needs to remain still in to release a latch object.

Only visible if a latch object is in the scene

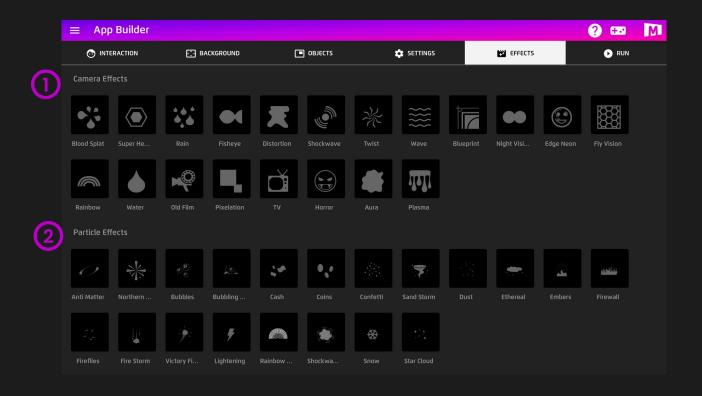




App Builder - Effects

- Camera Effects Choose a camera filter effect to be applied to the graphics when the game is run. It is possible to have several effects running at the same time.
- Particle Effects Choose particle effects that will appear as non-interactive animated particles when the game is run. It is possible to have several particle effects running at the same time.

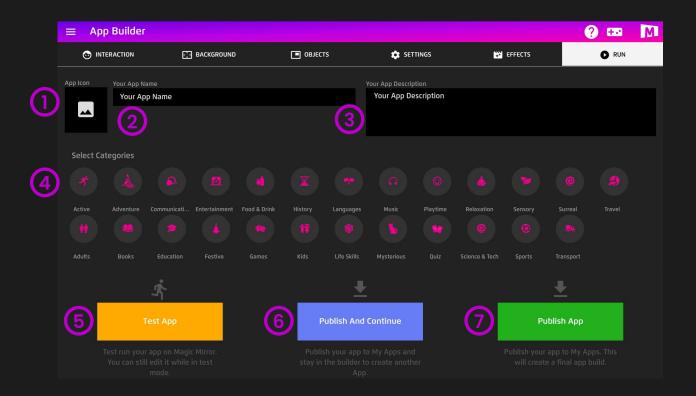
Tech Tip: Best not to use more than a few at a time as each additional effect adds more power draw on the GPU, which slows things down and can create lag. If you turned all on – expect to see a system crash.





App Builder - Run

- App Icon Click image icon to open media library and assign an app icon. (Required)
- 2 App Name Give your app a name (Required)
- App Description Write a description of your app.
- Category Select a category for your app. (Required)
- Test App This option will run the app in preview mode. Press esc key when the app is playing to return to the same place in the builder.
- 6 Publish and Continue This option will save the app into My Apps and remain in the current build so you can make alternative versions of the same app.
- **Publish** This option will save the app into My Apps and navigate to My Apps, where you will find your completed app. It is possible to edit your app later.





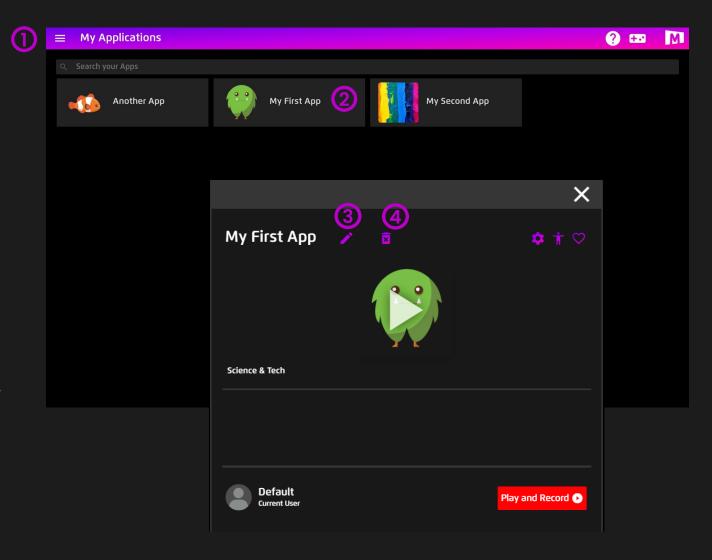


How it works

My applications collates all apps that have been published using the App Builder. From My Applications, apps can be run and edited.

How to use it:

- When an app is published from the App Builder they will automatically be saved into My Applications.
- Select the App Icon to trigger the App Launcher window to run it or edit it.
- **Edit App** Open your app back in App Builder, modify, tweak parameters and save again and again.
- **Delete App** Delete your app from the system





MEDIA LIBRARY

Magic Mirror Media Library loaded with images, videos and sounds ready to use in your own applications. It is also possible to add your own media to use in applications. Any media files you would like to load can be loaded into Magic Mirror





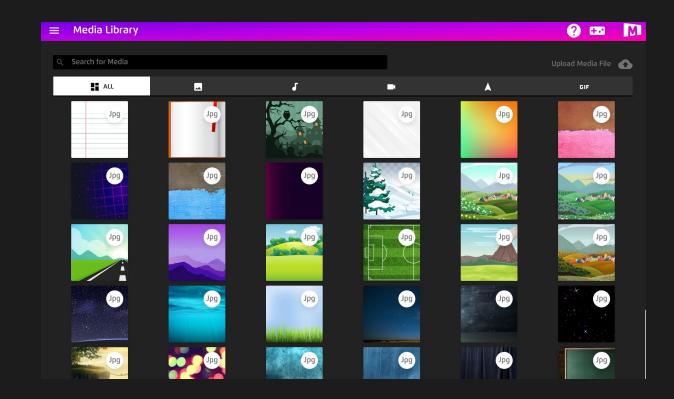
How it works

The Media Library has a range of media assets that can be used when creating apps.

How to use it

When looking for media, use the search function or the tabs at the top to browse different media types;

- Images
- Sounds
- Videos
- Cursors
- Animated GIFs (useful for animated objects)
- **Upload Media Files –** Tap the cloud icon and upload file from a Windows explorer window.



Top Tip! When uploading your own media, remember to save into the correct category for image type, obj, background etc.

Media Library - Object Images



How it works

Object Images are used as game objects when building apps.

How to use it

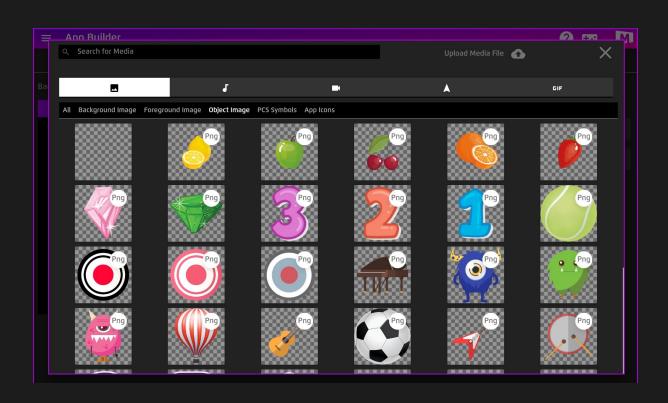
When uploading object images, there are a few parameters that need to be met to ensure images look good:

Object Size – Objects should be square 1:1 aspect, best sizes 128x128px 256x256px and 512x512px

Object Type - Objects must be PNG files to preserve transparencies. If they are a .JPG, objects will have a white square background. Gifs can be used but do not always render nicely. GIF's are grouped in its own section

Supported formats





Top Tip! App Icons also need to be square and a 256 x 256, 512 x 512 or 1024 x 1024 resolution.



RECORDINGS

My Recordings contains the screen capture video sessions that have been recorded on the system. Videos can be invaluable when reviewing how users interacted during a session.

NB: If your organization does not like the idea of recording Magic Mirror sessions, it is possible to turn off the option in the **Sidebar – Config – UI Settings – Recording: Set to inactive** and the Play & Record button will not be visible in the app launcher.



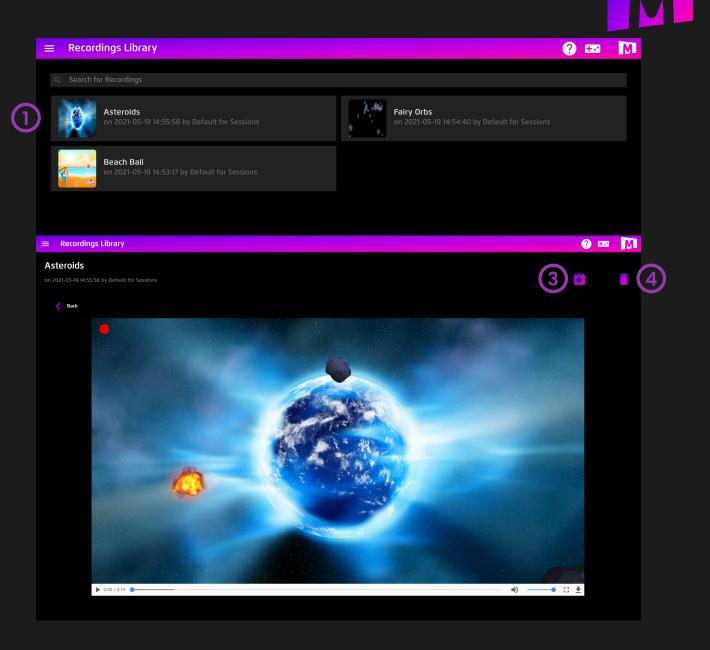
How it works

My Recordings stores all screen capture video sessions that have been recorded on the system. Here, you can playback, download and delete videos.

How to use it:

- Open Video Click on a video to open it in the player.
- 2 Playback Click the play icon to playback video.
- **3 Download** Download video using download icon.
- **Delete** Delete a recording by clicking the trash icon.

Top Tip! If you are logged in as an instructor, only recordings associated with the selected user will show.





INSTRUCTORS & USERS

Magic Mirror supports the creation of instructor accounts for the purpose of tracking information about specific named user activity. An instructor can create users and groups so they can add a degree of privacy as to who can access user videos etc.

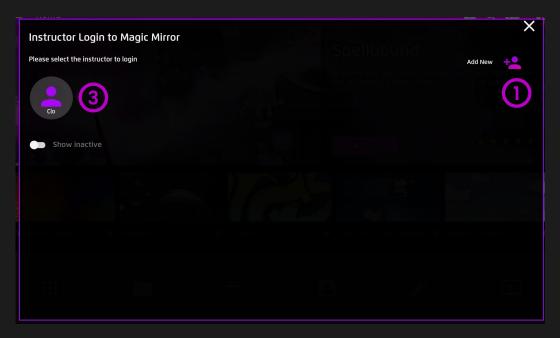
Instructor

How it works

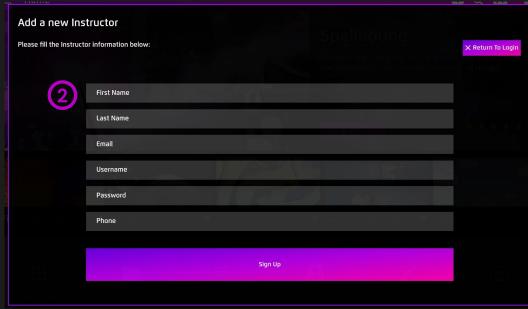
Create instructor logins and assign users to instructors. When recordings are made under a user profile, they are only visible when that user is logged in.

How to use it:

- Add an Instructor –select Add New from Instructor Page, a pop-up window will open.
- Create Instructor Profile Input instructor credentials details in the pop-up and select sign up.
- 3 **Login Instructor** Simply select instructor and input password, you will open the Users page where you can login and create users and access their recordings.







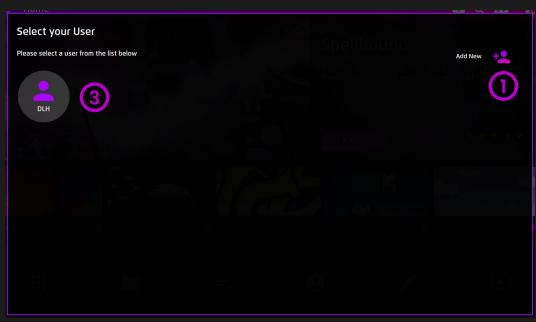
Users

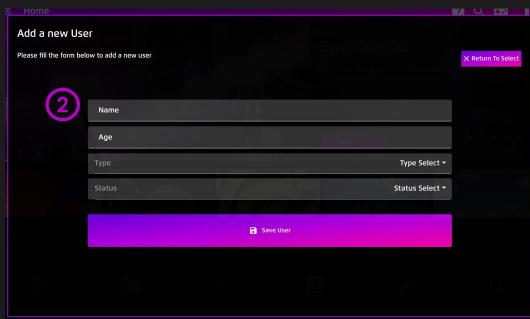
How it works

It is possible to create as many users under an instructor as required. User recordings can only be accessed when their instructor is logged in to Magic Mirror.

How to use it:

- Add a User When logged in as an instructor, select Add New from User Page, a pop-up window will open.
- 2 Create User Profile –Input user profile details in the pop-up and select save a new user.
- 3 **Login Users** Simply select a user and any recordings will be assigned under that User.







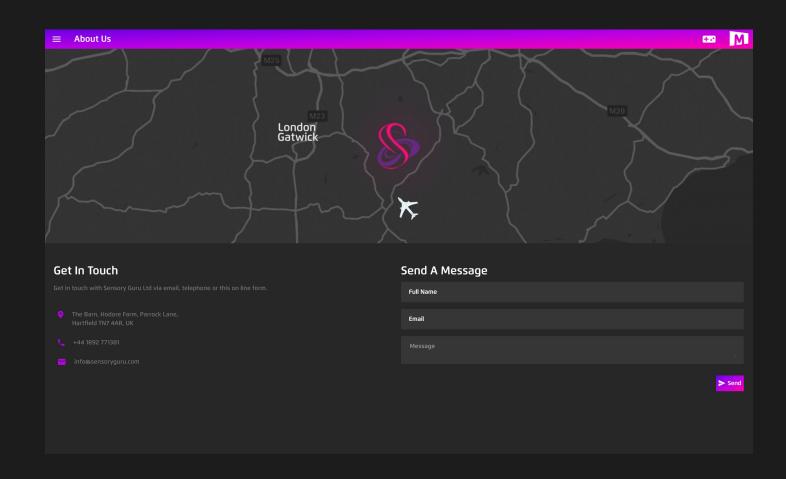


The About Us page includes contact details for Sensory Guru Ltd; the creators of Magic Mirror.

From this page, you can send Sensory Guru a message. Whether that is to tell us about an idea you have to improve Magic Mirror, questions about the software, reporting bugs or just to say "Hello!"

Have an app in mind?

If you have a specific use case that requires a specific app, let us know about it!





CONFIG

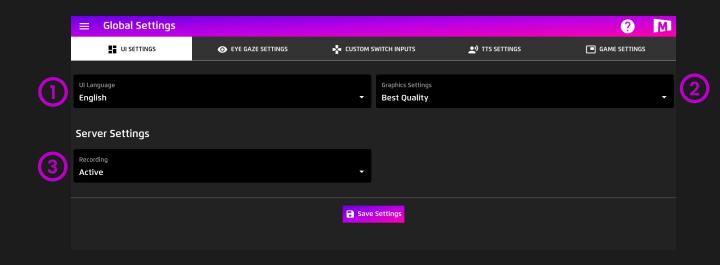
Config is where we configure global software settings. Config allows us to set up the UI language, alter display and performance settings and change the access menu voice commands. Global Access settings for Eye Gaze, Switch, Voice and TTS can also be configured here.



Config- UI Settings

- Ul Language Set your preferred language from the dropdown.
- Graphics Settings Optimise the graphics for your PC system.
 - Best Performance means graphics are optimised for lower power systems
 - 2. Best Quality enhances graphic quality and effect, suitable for higher power systems.
- Recording Settings Set recording to Active to enable the red Play & Record button functionality in app launch pop up.

If system is set to Best Performance mode, recording is automatically deactivated.



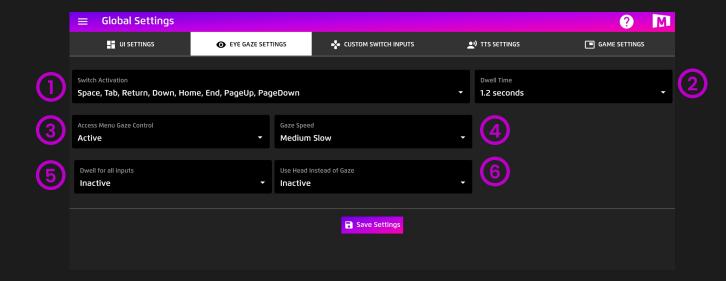


Config- Eye Gaze Settings

- Switch Activation Set switch inputs you will use with switch selection when using click mode in the Gaze Menu
- **Dwell Time** Set Dwell Time for selecting options in the Access Menu. Default set to 1.2 seconds.
- Access Menu Gaze Control Activate/Deactivate the
 Gaze Menu from being opened by looking off bottom right
 corner of screen.
- Gaze Speed 4 options; slow, medium slow, medium fast and fast.

If you are using screen recording, choose fast. This setting increases responsiveness of cursor and decreases easing.

5 **Dwell for All Inputs** - Active means mouse, touch and joystick will inherit dwell time activation for object interactions and access menu.



Use Head Instead of Gaze - Active means that Head Tracking will override eye tracking in all games.

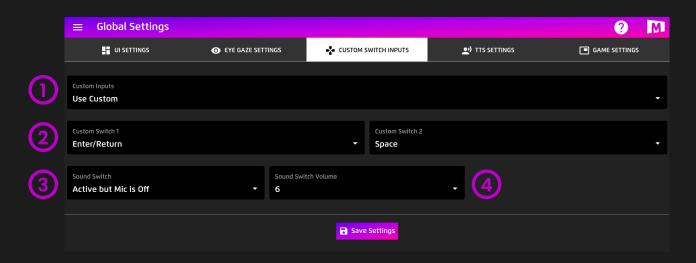
When set to active, sensitivity settings will appear.

Note: Only use this setting if you do not intend to use Gaze input.





- Custom Inputs Dropdown options:
 - **1. Use System** means Switch 1 is assigned to Spacebar and Switch 2 assigned to Enter.
 - **2. Use Custom** allows you to assign your own inputs to switches.
- Custom Switch 1/2 If custom inputs = Use Custom; assign inputs for Switch 1 and Switch 2 from dropdown menus.
- **Sound Switch** Active means microphone is enabled to detect sound as a switch input. Dropdown options:
 - 1. Off = Microphone Not Active
 - 2. Active Mic Off = Microphone is enabled in access menu, but games will not start with the mic responsive to sound.
 - **3. Active Mic Live** = All games start with mic input active with objects responsive to sound.

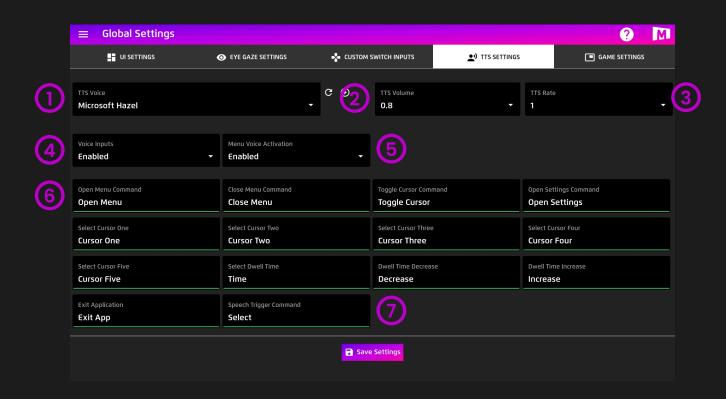


Sound Switch Volume – Visible when Sound Switch is set to ACTIVE. This is the sound threshold for detection: 1= sensitive.



Config – TTS Settings

- TTS Voice Select TTS Voice you would like to use for text to speech.
- **TTS Volume -** allows you to adjust voice volume.
- TTS Rate adjust TTS speed rate.
- **Voice Inputs** Enabled means voice inputs are enabled for interaction.
- Menu Voice Activation Activate/Deactivate TTS Voice menu control.
- 6 Access Menu Voice Commands Write voice commands you would like to use to control the access menu. Default voice commands appear as standard.
- 7 Speech Trigger Commands This word/phrase will interact with objects if you are looking at them as you say the word.



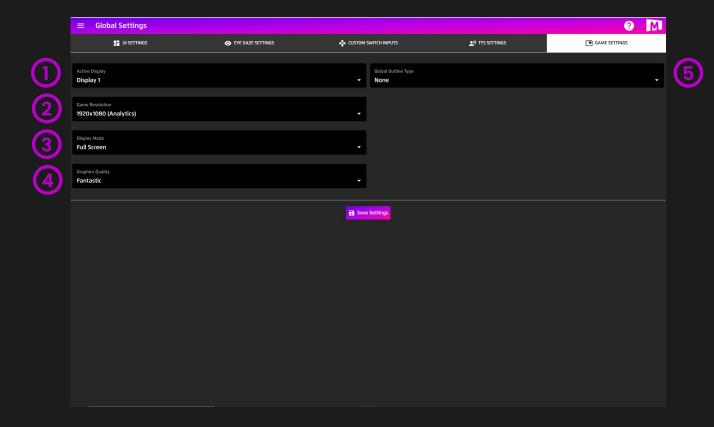


Config- Game Settings

- Active Display If you have more than I display on your system, you can choose which display runs the Magic Mirror games.
- **Game Resolution** Set the resolution for Magic Mirror games. Default is 1920 x 1080.

NB: Analytics recordings resolution must be 1920 x 1080

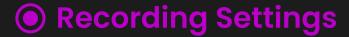
- **Display Mode** Set game window to Full Screen (default) or Window.
- Graphics Quality Set graphics quality to match machine performance. Fastest = lowest quality, Fantastic = highest quality.
- Global Outline Type Choose and option from list to apply an outline type to interaction objects. When a type has been assigned, colour picker will appear so you can select colour.





RECORDING SETTINGS

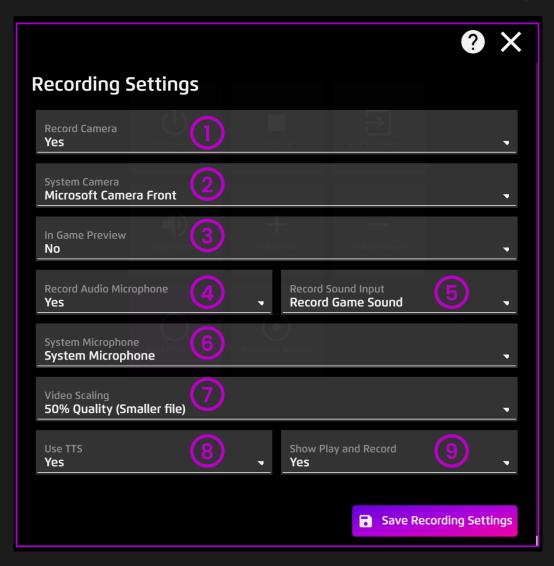
Recording settings allows us to setup the cameras and microphones the system uses for recording. This part of the system will be configured and set for standard use. If you would like add additional cameras and mics to your system, check out the info on the next page





- Record Camera If YES, possible to record with device camera
- System Camera Shows available system cameras and select one to use from dropdown.
- In Game Preview If YES, a small camera window in corner of game screen will show live camera video.
- Record Audio If YES, it will be possible to record audio using your microphone.
- **Record Sound Input** Record Game Sound or Record Mic Sound allows you to set which sound will be recorded.
- **System Microphone** Shows available system microphones and select one to use from dropdown.
- **Video Scaling** set video scaling at 25%, 50% or 100% (full HD).

 Higher quality videos require more system power when recording.
- 8 Use TTS If YES, it will be possible to access Windows TTS features.
- 9 Show Play and Record Button If YES, red Play & Record button will appear in app launch popup.





SOFTWARE INSTALLATION

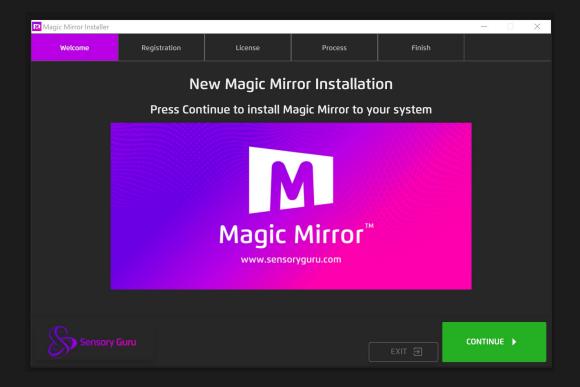
Magic Mirror software is preinstalled on all Magic Mirror systems. From time to time, it will be necessary to update your software or complete a fresh installation, such as in the event of a hardware failure and so on. The following pages detail the installation and update process.



When a purchase of Magic Mirror software has been processed, you will be sent a license code and download link for Magic Mirror. Download the Magic Mirror installer from:

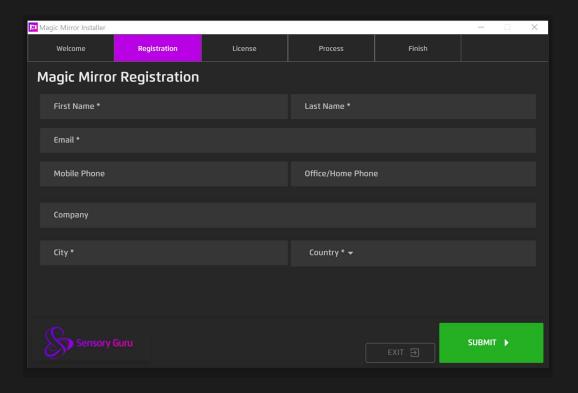


NB: If purchased from Sensory Guru, Magic Mirror will already be downloaded onto your system and tested on the hardware. Open the downloaded Magic Mirror Installer file to open the installer. Select CONTINUE to begin install process.

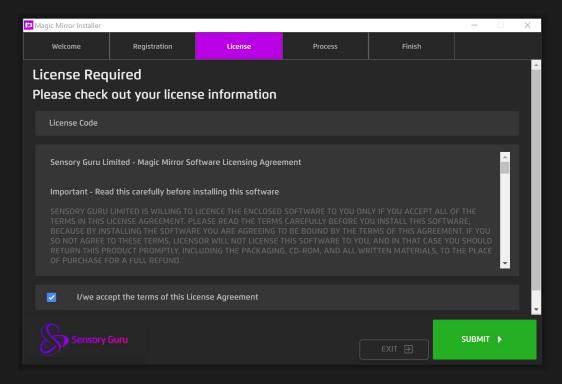




3 Enter details to register the Magic Mirror software

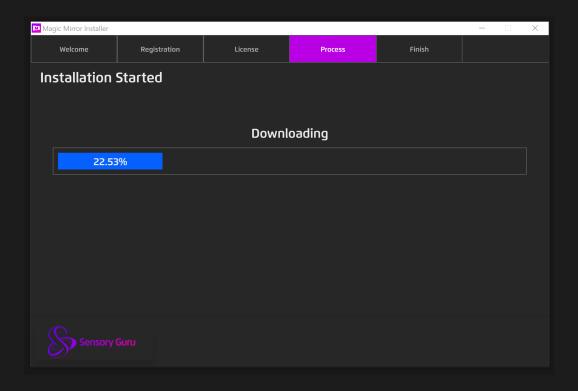


Enter License Code Read and accept Magic Mirror Software License Agreement Terms

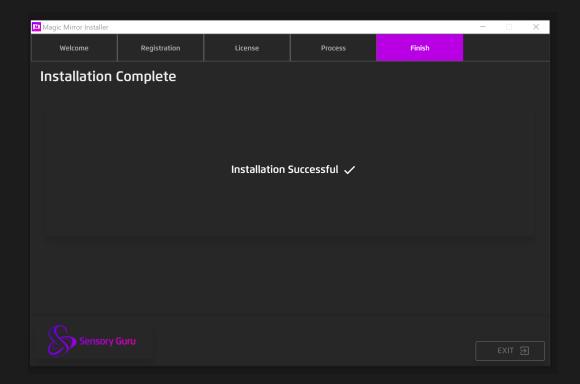




The installer will then begin installing onto your PC.



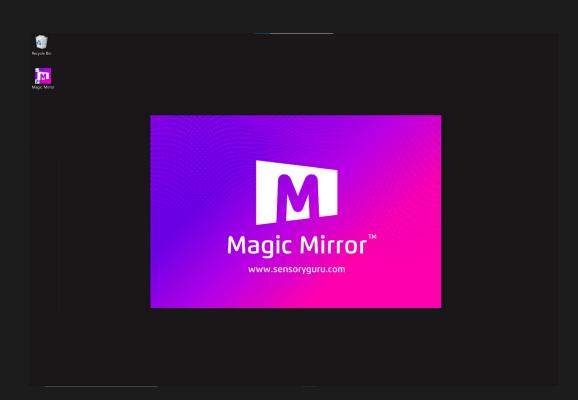
The installer will let you know once Magic Mirror installation is complete.





A Magic Mirror shortcut will appear on your desktop.

Select to launch Magic Mirror

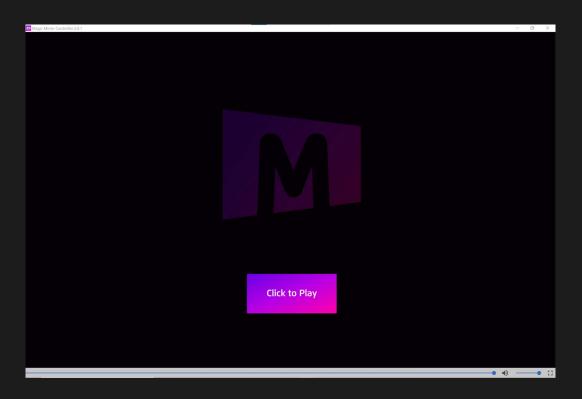


8 The first time you launch Magic Mirror, it will go through a configuration process that will take a couple of minutes.

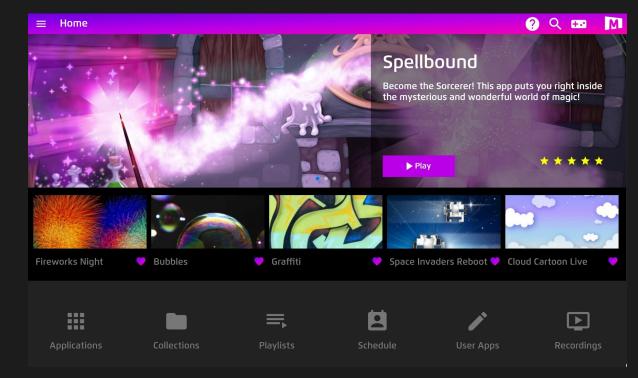




9 Once Magic Mirror has configured, select Click to Play



Magic Mirror will open on the Home Screen; you are ready to play.

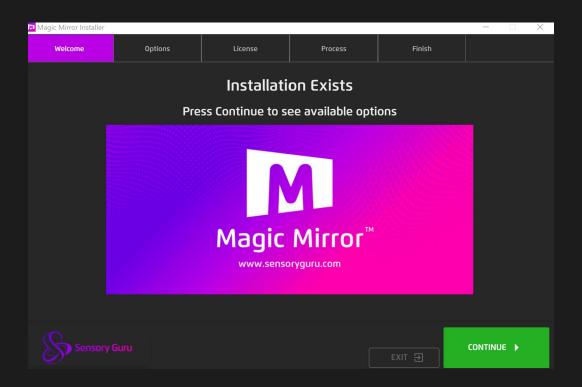


Update Existing Installation



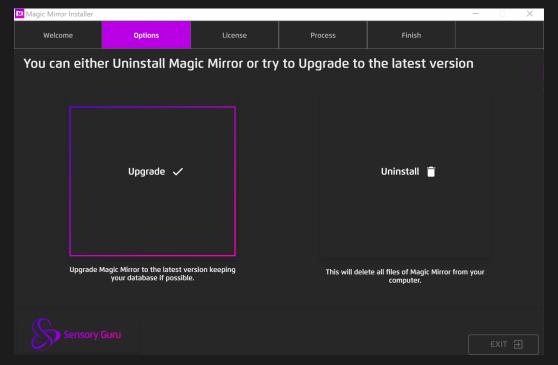
Run the **uninstall.exe** located in C:\MagicMirror OR click uninstall from Add/Remove programs Magic Mirror entry.

The Magic Mirror installer window will open, and detect whether an installation exists. Select Continue.



Select Upgrade – Installer will check for the latest update and pull the latest software distribution from our server.

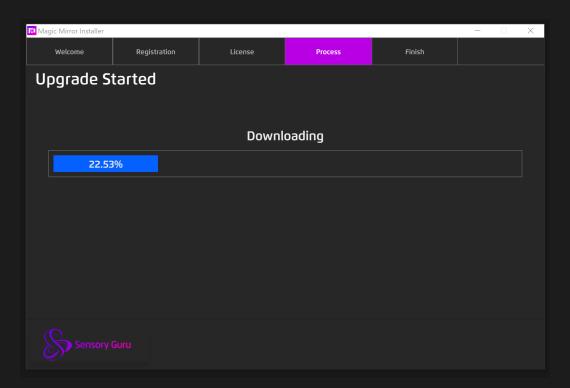
If the software is pre-installed you will not be prompted to enter a code or accept license details. The Install will start immediately.



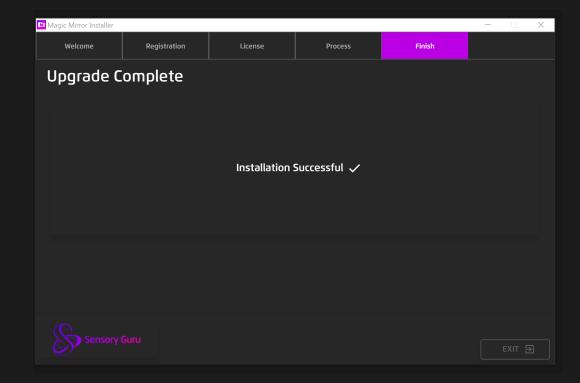


Update Existing Installation

Magic Mirror package will download and replace the existing installation when complete



When the software has completed you will see the Installation Successful message. Click Exit and start Magic Mirror from the desktop shortcut

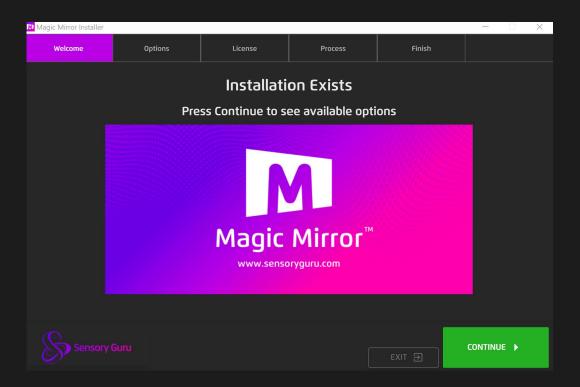




Uninstall Magic Mirror

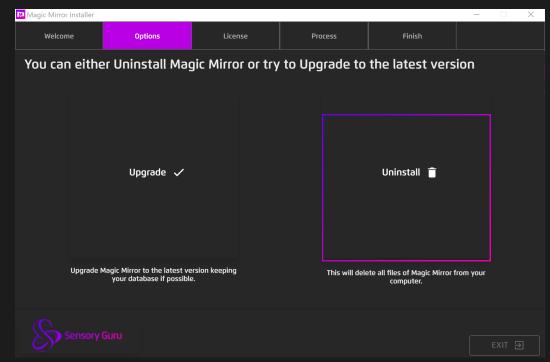
Run the **uninstall.exe** located in C:\MagicMirror OR click uninstall from Add/Remove programs Magic Mirror entry.

The Magic Mirror installer window will open, and detect whether an installation exists. Select CONTINUE.



2 Select Uninstall – this will completely remove the existing installation of Magic Mirror from you system.

Not recommended unless directed by Sensory Guru support engineer.







Publication Notice

Under the supervision of Sensory Guru Ltd., this manual has been compiled and published, covering the latest product descriptions and specifications. The contents of this manual and the specifications of this product are subject to change without notice.

Sensory Guru Ltd., reserves the right to make changes without notice in the specifications and materials contained herein and shall not be responsible for any damages (including consequential) caused by reliance on the materials presented, including but not limited to typographical and other errors relating to the publication.

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The End! You made it! Now go make the Magic