



Gamecreator Tutorial

This instruction booklet describes how to use the Gamecreator online to create your own games. The Gamecreator system is part of the IPerG 'pervasive game boxes' and is used to set up games with the IPerG boxes.



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Getting Started

To login to the Gamecreator system, start your Mozilla web browser and connect to

<http://gamecreator.sics.se>

DON'T USE INTERNET EXPLORER to access Gamecreator! The current version is primarily designed for Mozilla Firefox. It can be downloaded from:

<http://www.mozilla.com/en-US/>

The first thing you need to do is to create a user account. Click on 'NewAccount'. Type in the voucher number you got in your box. Select a user name and password and fill in as much as you want of the rest.

When finished, login by clicking 'sign in' in the upper right corner.

The screenshot shows the 'The Tutorial Game' website interface. At the top, there is a navigation bar with links: 'Intro', 'NewAccount', 'Activate', and 'About'. The 'NewAccount' link is circled in red, with a red arrow pointing to it from the text 'Click here to create your new account;'. In the top right corner, there is a 'Sign In' link, also circled in red, with a red arrow pointing to it from the text 'Click here to sign in'. Below the navigation bar is a search bar with the text 'Find:' and a magnifying glass icon. The main content area is divided into two columns. The left column has a 'Login' section with the following text: 'To login and use the system you need a account. If you don't have an account and want to create pervasive location based game you need a voucher and create a account. If you don't even have a box go out and by one. Well, that at least the future scenario, since no boxes are available yet in retail you can get an account by sending a request to "staffanj funnyatsign sics a little dot se".' Below this text is a section titled 'Enter your details' with the instruction: 'If you have forgotten your personal details please contact an administrator and request a function to reset your password.' There are two input fields: 'username:' and 'password:'. Below the input fields is a 'Login' button. The right column has a 'Logged out' section with a 'CreateAccount' link. Below the link is the text: 'To login you must create an account. To create an account follow the link below.' and the text 'CreateAccount'.

Creating a new game

When you log in for the first time, you will see an overview over all games you have access to. You have access to

- one game that you can set up and play right away.
- two empty game slots, where you can create entirely new games.

Click the first empty slot to create a new game. Give your game a name and a short description. You can always change these later!

Click here to create a new game

Click here to get to the overview over all games.

The Built-in Game

My GameCreator | Settings | API doc | Annika | Sign Out

Find:

Your Games

Choose a game to work on below, or click an empty spot to create a new one in that spot!

The Built-in Game [Delete Game](#)

Api Key: ff4s2cb46408811a0da7ce9aad81f96c78362c06

This game is supplied with the box when delivered. You can play it as it is, or make changes to it.

Empty Slot 2

Empty Game

Empty Slot 3

Empty Game

Be creative!

The most important task in game creations is that people should be active and creative. try to think out of the box, write what comes into your mind an chase the dreams that cloud your reality!

Scenario: Locations, People, and Items

The 'Scenario' part of Gamecreator is used to organize the in-game content.

The typical way to construct a game in Gamecreator, is to first set up what the game is about and only later create the game rules which describe how the technology is used in the game. Since pervasive games are played in the real world, the games are mostly about real things: the places you visit, the people you meet, and the things that you handle. But some of the content described here can also be entirely fictional. You can for example use it to describe fictional game characters.



The places, people and things your game will be about

Click here to get to the scenario overview of your game.

A list of all properties manipulated by the game rules.

A list of all keywords you have used to organise your game. The larger, the more they are used.

If you click on a keyword, you will get a list of all objects tagged with this keyword.

Locations

A location is usually a real place, one that you want your players to visit. It can be indoors or outdoors, a small or a large area. Sometimes, a location can be several areas: for example, if you want ‘Peter’s apartment’ to be a location, you might have one area which is the kitchen, another that is the bathroom and another that is the living room, etc. There can be virtual locations too, such as a web forum or an online game world.

The box technology will *sometimes* make it possible to track when players arrive at locations. If players carry a GPS and the location is outdoors, the system can usually detect when a player enters a location. If the player reads an AR marker or a RFID tag placed in the location, we might want to assume the same.

The screenshot shows a web interface for 'The Tutorial Game'. At the top, there's a navigation bar with 'Game', 'Locations', 'People', and 'Items'. The 'Locations' tab is selected. To the right, there are buttons for 'sourcebook', 'scenario', 'runtime', and 'organize'. A search bar is labeled 'Find:'. Below the navigation, the main content area is titled 'Locations' and includes a 'Create new location' button. A filter bar shows 'You currently have 0 filters active for locations'. Two buttons, 'Show on map' and 'Act on selection', are visible. A sidebar on the right is labeled 'Orchestration here'. Red callouts provide instructions: 'Click here to get to a list of all game locations' points to the 'Locations' tab; 'Click here to create a new game location' points to the 'Create new location' button; 'Select a subset of all locations.' points to the filter bar; 'Showing all locations.' points to the 'Show on map' button; and 'Do something to the selected locations, such as change a location property.' points to the 'Act on selection' button.

Click here to get to a list of all game locations

Click here to create a new game location

Select a subset of all locations.

Showing all locations.

Do something to the selected locations, such as change a location property.

Creating a new location

In the 'location' overview, click on 'New location' to create a new location.

Give the location a name and a description that makes it possible to remember later why you created this particular location. You can also give it one or several 'tags', single keywords that you can use later to search for this location.

The result of creating a location is shown below. At the bottom of the location overview, there are three information pages for this location. Clicking on them will display the *areas*, *assets*, and *rules* that are associated to this location. The 'areas' can be real-world areas, AR markers and RFID tags that have been connected to the location. The 'assets' are texts, sounds, and images related to the location, and the rules are rules that apply to this location.

Create Location

Basics

A place in the forest *The name of your location – you can always change it later!*

A random description of the location
A location should be a real place that you want your players to visit. It can be indoors or outdoors. A location can be recognised by geographical areas, augmented reality markers, or RFID tags.

Click here to create the location

Tags

Awayplace

Use tags to organise your game thematically. Tags are also used by the rules system.

A place in the forest Show on Timeline | Show on Map | Settings | Delete

Awayplace

Properties

Currently, no properties are set.

A location should be a real place that you want your players to visit. It can be indoors or outdoors. A location can be recognised by geographical areas, augmented reality markers, or RFID tags.

Areas | Assets | Rules

No areas are connected with this location

Add areas

Click here to change areas and assets associated to the location.

Click here to view areas, assets, and rules associated to the location

'**Settings**' allows you to connect areas and assets to your location. You can't create them here (use the 'Sourcebook' for that). Rules are created in a separate rules editor.

'**Show on Timeline**' shows an overview of all in-game events that have happened at this place.

'**Show on Map**' will show all areas that you have associated to this location.

People

Use the 'People' area to organize players, roles, and in-game characters.

Typically, you will want to create one "role" for every type of player you want to have in the game. In a soccer team, you would create one role for outfielders and another one for the goalie, for example. You might also want to keep track of non-player roles, characters in the game that are not played by the players.

You might also use 'people' to describe entirely fictional characters, as well as keep track of information about your actual players, such as their mobile phone number.

The screenshot shows the 'People' management interface for 'The Tutorial Game'. The interface includes a top navigation bar with 'Game', 'Locations', 'People', and 'Items'. A 'Create new person' button is visible. A filter bar indicates 'You currently have 0 filters active for people'. An 'Act on selection' button is also present. The main content area shows 'Showing all people.' and a list item for 'GPSwearer' with a 'GPS' tag and a description: 'People in this role carry a GPS to recognise in-game areas.' The right sidebar contains an 'Orchestration' section with a 'show: All Events' dropdown.

Click here to get to a list of all people in the game

Click here to create a new player, player role, or in-game character

You currently have 0 filters active for people

Act on selection

Select a subset of all people.

Do something to the selected people, such as send them a message.

Creating a person

To create a new person in the game, click on 'Create person' in the people overview. As discussed previously, the people can be player roles, in-game characters, and players; it all depends on what game you are constructing. Here, we describe how to add a *player role*. As usual, you start by giving the role a name and a short description, and tag it with some useful keywords.

The figure to the right shows the result of creating a person. Note the *device code*. If you are using the location box, the player who plays in this role should log onto their phone using this code.

At the bottom of the person overview, there are three information pages for this person. Clicking on them will display the *areas*, *assets*, and *rules* that are associated to the person location. The 'areas' can be AR markers and RFID tags that have been connected to the role (a player may for example be wearing them on his or her clothes). The 'assets' are texts, sounds, and images related to the person, and the rules are rules that apply to this person.

'Settings' allows you to connect areas and assets to your person. You can't create them here (use the 'Sourcebook' for that). Rules are created in a separate rules editor.

Make sure to hand out the right technology to people playing in a technology-specific role!

The player with this role should use this device code to log into his or her phone.

The screenshot shows the 'GPSwearer' interface. At the top left, the name 'GPSwearer' is displayed next to a 'GPS' icon. To the right, there are links for 'Settings' and 'Delete'. Below the name, there is a 'Properties' section with a dashed border and the text 'Currently, no properties are set.' Underneath, a note states 'People in this role carry a GPS to recognise in-game areas.' At the bottom, there are three tabs: 'Areas', 'Assets', and 'Rules'. Below these tabs, a message reads 'No areas are connected with this person' and an 'Add asset' button is visible. On the right side, a 'Device code: 4371993' is displayed, with the code circled in red. Below this, a green notification box says 'You have created GPSwearer'. Underneath, there is an 'Orchestration:' section with a 'show:' dropdown menu set to 'All Events'.

Items

Use the 'Item' area to organize real-world and virtual objects that you want in your game. If the players are to find a book and carry it around, it is a typical item. But you might also use 'Items' to keep track of things like teams and winning conditions.

Creating an item

To create a new item in the game, click on 'Create item in the Item overview. Give your item a name and a useful description.

You can recognize real-world items by RFID tags and AR markers. Click on 'settings' and then on 'area' to connect a tag or an area to the item.

The screenshot shows the 'The Tutorial Game' interface. At the top, there is a navigation bar with 'My GameCreator | Settings | API doc' and 'Annika | Sign Out'. Below this is a secondary navigation bar with 'sourcebook', 'scenario', 'runtime', and 'organize'. The main navigation bar includes 'Game', 'Locations', 'People', and 'Items' (which is circled in red). A search bar is located to the right of the main navigation. The main content area is titled 'Items' and features a 'Create new item' button (circled in red). Below this, there is a filter bar indicating 'You currently have 0 filters active for items' and an 'Act on selection' button. The text 'Showing all items.' is displayed. A list item is shown with the title 'A shoe' and the category 'Treasure', followed by the description 'Items are typically things in the real world that the players can carry around.' Red annotations with arrows point to the 'Items' menu item, the 'scenario' button, and the 'Create new item' button. The annotations include the text: 'Click here to get a listing of all game items', 'Click here to create a new game item', and 'Items are found under scenario'.

The Sourcebook

The sourcebook is used to organize the real-world and media content in your game. You can also use the 'Ideas' part to organize game ideas that haven't found their place in the game yet.

Under 'Assets', you collect in-game information about

- things in the real world that the technology can recognize, such as areas, RFID tags, and visual markers.
- output media: sound files, images, texts, and 3D models.

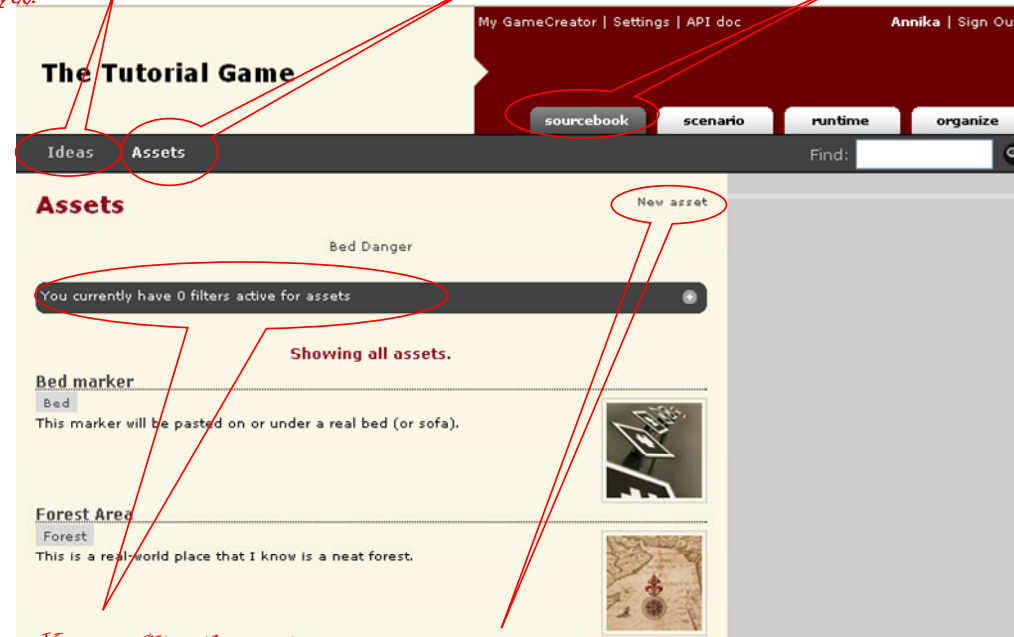
Every box uses its own set of technologies to recognize things in the real world. If you have the Augmented Reality box you can add information about visual 'markers' here. In the Location box, you will instead work with RFID tags and real-world geographical areas that can be recognized by a GPS reader.

The Gamecreator system does not know which box you have, so all asset types are always available. You have to keep in mind what your actual hardware can handle. But sometimes it makes sense to create an asset even if the box hardware cannot handle it. In particular, it is often useful to place a game location in a special geographical area, even if the players are not carrying GPS.

Use the 'ideas' WIKI to organise game ideas that haven't made it into your game yet.

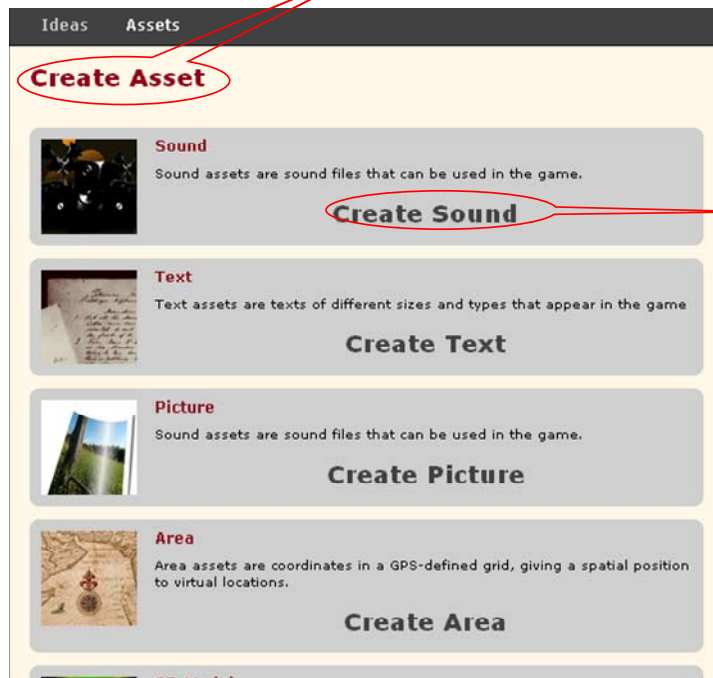
'Assets' organise both real-world assets and media.

Click here to get to the sourcebook.



You can filter the asset overview.

Click here to add an asset.



You can always create any type of asset, even if your box hardware can't handle it.

Click here to create an asset of this type.

The location box handles

- **Sounds:** streams sound to the mobile phone
- **Texts:** short text can be displayed on the mobile phone
- **Pictures:** very small pictures can be displayed on the mobile phone
- **Areas:** The game will notice when GPS-equipped players enters an area – if it is outdoors and in GPS coverage.
- **RFID tags:** The game will notice when a glove-equipped player reads an RFID tag.

The Augmented Reality box handles

- **Sounds**
- **3D models:** simple 3D models can be uploaded to the device and displayed over markers.
- **AR markers:** the device camera can recognize AR markers.

In the current version of the augmented reality box, the system can only handle pre-defined markers.

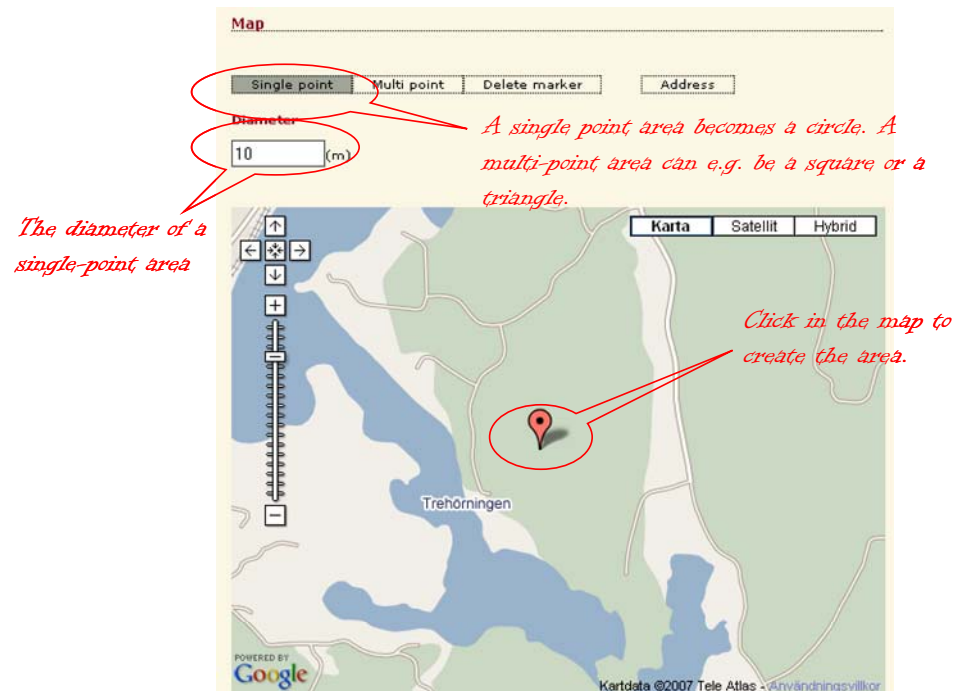
Adding an Area Asset

Start by giving the area a name and a short description. Then *scroll down* to plot it out in the real world

Gamecreator uses Google Maps to plot out real world places. This works everywhere in the world, but navigation is a bit difficult – you must first center your desired location in the middle of the screen and then zoom in. You can choose between a map image and a satellite image of your area.

Once you have found your place on the map, select the shape of your area. It can either be ‘single-point’, which makes it circular, or ‘multi-point’ which makes it possible to create a polygon (e.g. a triangular or square) area with straight edges. For single-point areas, you must also select the size. When using GPS, the size shouldn’t be smaller than 10m.

Click on ‘create area’ when you are done.



Adding an Augmented Reality marker asset (AR box only)

To create a Marker asset for the Augmented Reality box, click on 'New asset' in the asset overview and select 'Create Marker'.

The AR system can't recognize just any image as a marker. The installation CD contains a set of working markers as image files that you can print out or show on screen. Select the desired marker in the 'Files' field. It can be useful to also use it as a 'Descriptive picture'.

To scale the 3D model correctly, the system also needs to know how large the printed (or displayed) 3D marker will be in the real world.

Create Marker

Basics

Marker

Descriptive Picture:

Marker ID:

Diameter (in mm):

Tags

Adding a sound asset

Select 'new asset' in the asset overview, and select 'Create Sound'. You can now upload the sound file that you want to use. The result will look something like this. Note the media player, which allows you to listen to the sound directly in Gamecreator.

Adding a text asset (Location box only)

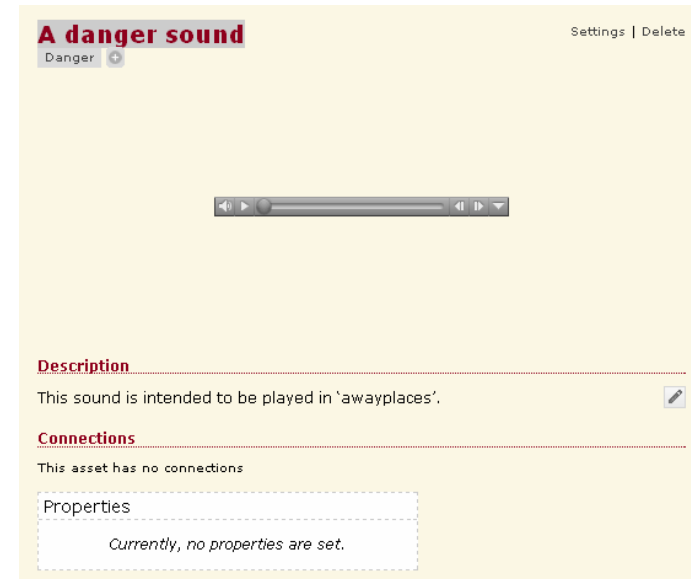
Select 'new asset' in the asset overview, and select 'Create Text'. Type the text directly into the window. Think of its length – the phone device can only display short texts.

Adding an image asset (Location box only)

Select 'new asset' in the asset overview, and select 'Create Image'. Upload the image you want to use.

Adding a 3D model Asset (AR box only)

Select 'new asset' in the asset overview, and select 'Create 3D Model'. You can upload both the actual 3D model, and a descriptive image to show in the asset overview.



Connecting assets to locations, items and people

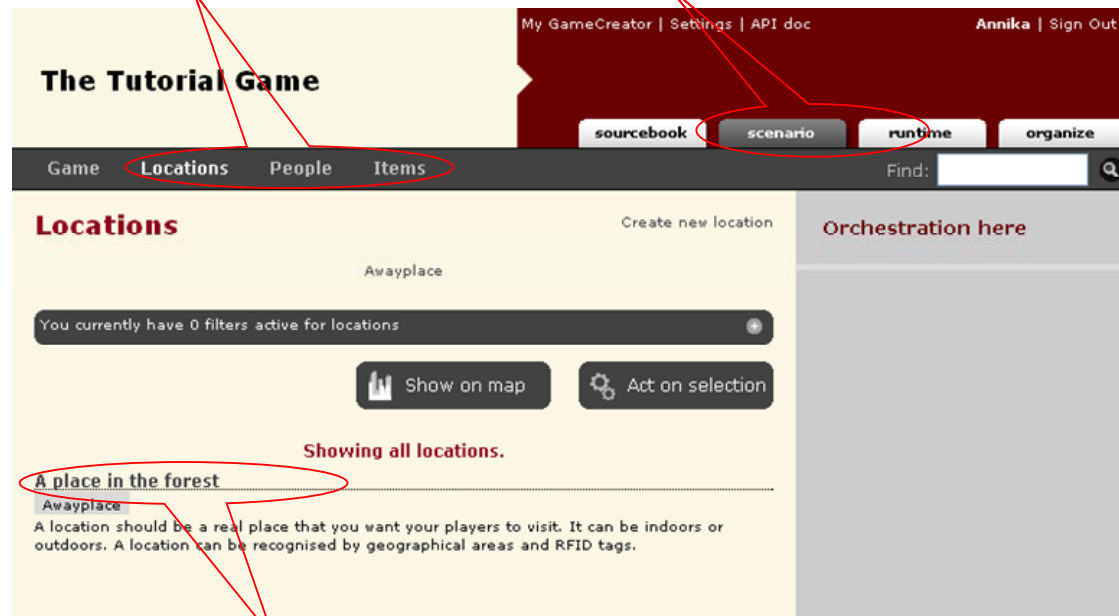
To use assets in the game they need to be connected to your in-game locations, items and people. This is done in the *Scenario* part of Gamecreator.

To connect an asset to an in-game object, first navigate to the object.

- Click on 'Scenario' to get to the overview of the in-game objects.
- Click on Locations, People, or Items depending on which type of object you want to work with.
- Locate and click the object you want to change.
- Click on 'Settings'. Here, you can connect the object to the real-world areas, RFID tags and AR markers that are used to recognize it. You can also connect it to output media; texts, images, sounds, etc.

Click on the object type you want to add an asset to.

Click on 'Scenario' to get to the overview of your in-game objects..

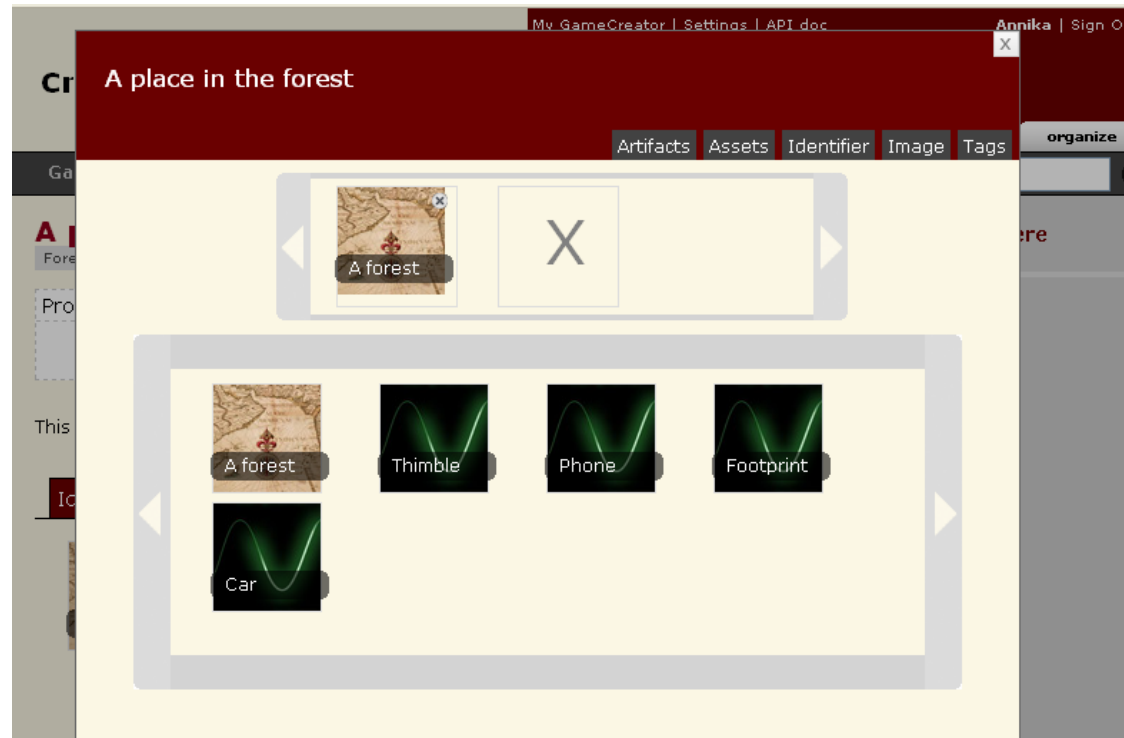


Select the object you want to add an asset to.

Settings for Locations, People and Items

Each in-game object has a group of 'Settings'.

- **Artifacts** are item objects that are associated to a location or a person.
- **Assets** are media assets that can be output as a result of events affecting a location, person, or item.
- **Identifier** are RFID tags, GPS areas, and AR markers that can be used to identify this location, person, or item.
- **Image** is an image that is used in the system to represent the in-game object.
- **Tags** is a list of keywords used to organize the content of Gamecreator. You use tags to search for the object. They are also used in orchestration (e.g. to send the same message to all people tagged with a specific tag), and in creating rule sets.

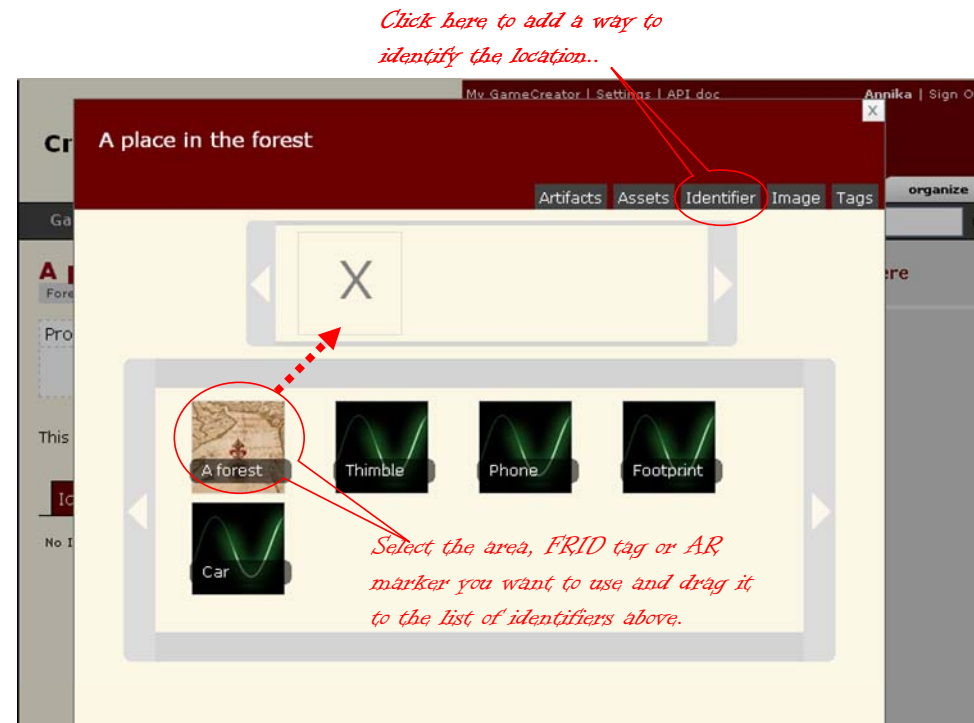


Connecting a real-world area to a Location

To connect a real-world area to a game location, you must first have created a real-world area in the Sourcebook.

Navigate to the location (you find it under 'Scenario') and click on 'Settings'.

Click on 'Identifier' to associate a real-world asset to your location. Select the area you want to use to recognize this location. Drag it to the box marked with an X above. This will be a list of identifiers.



The result of adding an identifier is shown to the right. A new box marked 'X' will appear beside the selected area. You can have up to three different ways to identify the same location.

You can also select an RFID tag or an AR marker as ways to recognize a location.

Connecting an RFID tag to a Location

To connect an RFID tag to a location, you must first have added the RFID tag to the Sourcebook. Navigate to the location and click on 'Settings'. Click 'Identifier' to add a way to identify this location and drag the RFID tag to one of the identifier slots.

Connecting an AR marker to a Location

To connect an AR marker to a location, you must first have added the AR marker to the Sourcebook. Navigate to the location and click on 'Settings'. Click 'Identifier' to add a way to identify this location and drag the AR marker tag to one of the identifier slots.

Connecting an RFID tag or AR marker to a person

The system can recognize a person by an AR marker or an RFID tag that is placed on the person. To connect a marker or a tag to a person, you must first have added the tag or marker that you want to use to the Sourcebook.

If you have done this, navigate to the person (you find it under ‘Scenario’) and click on ‘Settings’.

Click on ‘Identifier’ to associate a real-world asset to your person. Select the RFID tag or AR marker that you want to use to recognize this person and drag it to one of the Identifier slots.

Tagging real-world players can be difficult, especially if they have a reason for hiding from other players. Think of inventive ways to do this! Maybe you want to put an AR marker on the back of their shirt?

Connecting an RFID tag to an item

The system can recognize an item by an RFID tag that is placed on the item. To connect a marker or a tag to an item, you must first have added the tag or marker that you want to use to the Sourcebook.

If you have done this, navigate to the item (you find it under ‘Scenario’) and click on ‘Settings’.

Click on ‘Identifier’ to associate a real-world asset to your item. Select the RFID tag or marker that you want to use to recognize this item and drag it to one of the Identifier slots.

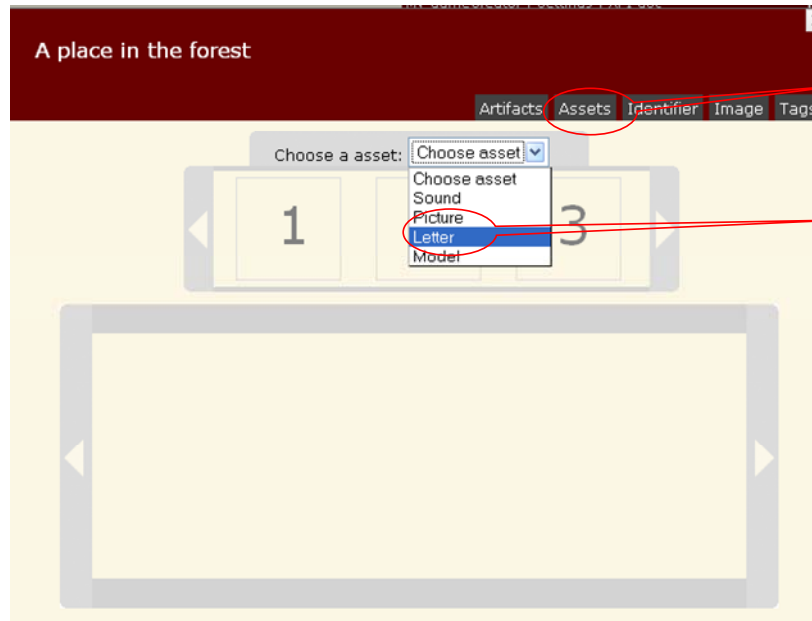
RFID tags are easy to hide and difficult to find. Depending on your game, you might want to put them in clearly visible places or hide them inside objects.

AR markers can be hidden in many interesting ways. You might for example print them in books and newspapers, or display them on a screen...

Connecting media assets to locations, people and items.

Media assets are sent as output from the system. Depending on which box you are using, you can use different media assets. You can associate up to three media assets to each in-game object. Use this function primarily for media assets that will be used more than once in the game.

To add a media asset, first select the location, person or item that you want to add an asset for. Click on 'settings' and then on 'assets' to add an asset. Select the media type that the asset has.



Click on 'asset' to add a media asset to the object.

Select the media type.



Then drag the asset into one of the asset slots.

Select the media asset that you want to add and drag it into one of the slots.

The rules editor

The rules editor is the most complicated part of Gamecreator. But without a rules editor, Gamecreator would not be able to support any interesting games, so hang on!

The rules decide what will actually happen in the system when people read tags or AR markers, and visit areas. Assume for example that you want the first person that visits a location to get extra points. You can write rules for that. Or, assume that you want people to get a clue only if they both are at the right location and have earlier found the right object (and read its RFID tag). You can write rules for that too.



To access the rules editor, click on 'Runtime' and then click 'Rules'.

All rules belong to places, people, or items in the game. Rules that apply to **locations** are used when people or items enter or leave in-game locations. Rules that apply to **persons** are used when people do something, like, when they meet other people. Rules that apply to **items** are used when items are moved or handed over between people, or otherwise manipulated.

Before you can start to create rules, you must create rule sets!! These are used to organize the rules into groups that apply to only some of the objects of a specific type.

Creating a rule set

Before you can start to create rules, you must create one or several *rule sets*.

Each set of rules apply only to some of the objects: to *some* locations, *some* people, or *some* items. Each set of rules will only apply to the objects tagged with *one specific keyword*.

Click on 'create rule set' to create a new set of rules. As usual, give it a name and a short description. Then type your keyword in the keyword slot.

You can only create one rule set for each keyword. Before you can create the rule set you must check that it is the only rule set for the keyword. Click on 'Check availability'. You will also see how many objects that already are tagged with this keyword.

Click on 'Create' to create the rule set.

The screenshot shows the 'Create Location rule set' interface. At the top, the title is 'Create Location rule set'. Below it, the 'Basics' section is visible. A text input field contains 'Away locations'. Below this is a rich text editor with a toolbar and the text: 'These rules apply to places that are not the players' home base. The rule set will only apply to locations that are tagged with the tag 'Awayplace'. To the right of the text editor, a red callout bubble says: 'This set of rules will only apply to locations tagged with 'Awayplace''. Below the text editor is a section titled 'Which keyword does this set belong to?'. It contains two input fields: 'Awayplace' and 'Check availability'. Both fields are circled in red. Below these fields is a yellow warning box that says: 'This keyword is available but is used by 1 location. Click here to cancel this and go to a list of the tagged objects.' To the right of the warning box is a 'Create' button, also circled in red. A red callout bubble points to the 'Create' button with the text: 'Click here to create the rule set.' Another red callout bubble points to the 'Check availability' button with the text: 'Before the rule set can be created you must check that there is no other rule set for the same keyword.'

Events

A core concept in the rules editor is in-game events. Events are things that happen in the real world that the game system is able to know something about. The system is for example able to recognize when a player uses the RFID glove to read an RFID tag, or uses the Augmented Reality device to look at an AR marker, or enters an in-game area carrying a GPS.

But the rules are not about such technology events: the rules deal with locations, people and items. This makes it possible to create games that use the same technology in many different ways. On page 35 you find a list of all in-game events that can be used in the rules, as well as a description of how they are generated.

Creating a rule

Navigate to a rule set that you already have created. To get to a rule set, click on 'Runtime' and then on 'Rules'. Select the object type that your rule will be about and then select a rule set for the right keyword.

Right now, you should be looking at a screen displaying an empty rule set. To create a rule, click on 'Create new rule'.

The screenshot shows the GameCreator interface for 'The Tutorial Game'. The top navigation bar includes 'sourcebook', 'scenario', 'runtime', and 'organize'. The 'runtime' button is circled in red. Below it, a secondary navigation bar has 'Devices', 'Rules', 'Events', and 'Timeline'. The 'Rules' button is also circled in red. The main content area is titled 'Rule sets' and lists three categories: 'Location' (with 'Awayplace' as a keyword), 'Person' (with 'Test' as a keyword), and 'Item' (with 'Test' as a keyword). The 'Location' category is circled in red. Red handwritten annotations with arrows point to the 'runtime' button, the 'Rules' button, and the 'Location' category. The annotations read: 'First click on runtime to get to the rules editor', 'And then on 'Rules'', and 'Select the object type you want to create a rule for'. The top right of the interface shows 'My GameCreator | Settings | API doc' and 'Annika | Sign Out'.

Create rule under the set Away locations

Basics

Play the danger sound

This rule will trigger when somebody enters an "Awayplace" location.

The rule applies when a player enters a location.

For which events and which people this rule apply

Event: **onLocationEvent**

Person: **All persons**

Create

The rule applies when a player enters a location.

It applies to everybody, and not to a specific player role.

Click here to create the rule.

The result of creating a rule is shown to the left. This rule will trigger whenever the system detects that a person is at a location tagged with 'Awayplace. But so far it does not actually do anything.

You must first select what kind of event will trigger the rule. Some events are only available for some of the object types, e.g. 'OnLocationEvent' which means that a player is entering at an in-game location.

In the table on page 35 you find all types of events that can trigger rules as well as how they are generated.

Rules can apply to all persons, or to players in specific roles. Typically you will want to select 'All persons' here.

Play the danger sound

Back to Away locations | Delete this rule

Rule set: Away locations (Location)

Event: onLocationEvent

Person command: person(all)

This rule will trigger when somebody enters an "Awayplace" location.

Conditions

Add conditions here!

Choose type of condition

Add condition

Actions

Add actions here!

Choose type of action

Add action

The rule applies when any player arrives at an 'Away' location.

You can add conditions here. The rule will apply only if all conditions are true.

Describe what should happen here.

Adding effects to rules

When a rule triggers, you typically want it to have some kind of effect. There are two types of effects. The system can output some kind of media to the players, and it can also change a property maintained by the system (e.g. to count the number of visits to a location).

Click on 'Choose type of action' to add an effect to a rule. A scroll down menu is shown where you can select between different possible effects. Select 'Play sound'. Now, click on 'add action' to add the effect to the rule.

Every rule can have several different effects. You can always add actions to a rule later.

The screenshot shows a rule configuration page for "Play the danger sound". At the top, it says "Rule set: Away locations (Location)", "Event: onLocationEvent", and "Person command: person(all)". Below this, it states "This rule will trigger when somebody enters an 'Awayplace' location." There are two sections: "Conditions" and "Actions". The "Conditions" section has a header "Add conditions here!" and a dropdown menu "Choose type of condition" with an "Add condition" button. The "Actions" section has a header "Add actions here!" and an "Add action" button. A dropdown menu "Choose type of action" is open, showing options: "Choose type of action", "Call URL", "Play sound", "Set asset property", "Set item property", "Set location property", "Set person property", "Show text", and "Choose type of action". Red annotations include: a callout pointing to "Play sound" with the text "Select 'Play sound' as the effect."; a callout pointing to the "Choose type of action" dropdown in the actions section with the text "Click 'choose type of action' to create an effect."; and a callout pointing to the "Add action" button with the text "Click here to add the 'play sound' effect to the rule."

When you have selected an effect, you set a set of properties for the effect. For example, when you select 'Play sound' you also get to select who will hear the sound and what sound should be played.

While you are adding or changing a condition or an effect, the bottom bar of the work area is shown in red. This means that it has not been saved yet. When the condition or effect has been saved, the bar turns grey.

On page 38 you find a complete table of all effects that rules can generate.

The screenshot shows a rule configuration interface for a rule named "Play the danger sound". At the top right, there are links for "Back to Away locations" and "Delete this rule". The rule details are as follows:

- Rule set:** Away locations (Location)
- Event:** onLocationEvent
- Person command:** person(all)

Below this, a text box states: "This rule will trigger when somebody enters an 'Awayplace' location." There is a "Conditions" section with a red border and the text "Add conditions here!". Below this is a dropdown menu labeled "Choose type of condition" and an "Add condition" button.

The "Actions" section is also highlighted with a red border. It contains a single action named "1. ShowSound". This action has two dropdown menus: "Event invoker" (set to "Person") and "Sound" (set to "A danger sound"). A "Save" button is located to the right of the "Sound" dropdown. Below the "ShowSound" action is a "Play sound" dropdown and an "Add action" button.

Red annotations with arrows point to the "Event invoker" dropdown, the "Sound" dropdown, the "Save" button, and the bottom bar of the "ShowSound" action configuration area.

The event invoker is the person who entered the location.

Select from a list of all sound assets.

Click on 'save' to save the action.

This bar is red if an action has been changed and not saved.

Adding conditions to rules

If you want to limit when a rule applies, you must add extra conditions to it. To add a condition, first select the rule you want to add a condition to, and then click on 'choose type of condition'. You will see a scroll-down menu with all possible types of conditions. Select one of them and click 'Add condition'.

Gamecreator currently supports checking *properties*. Before you can add conditions to a rule, you must define the properties that you want the rules to check. (This is done under Settings.) In this example, we will check a property for the current location.

The screenshot shows the configuration for a rule named "Play the danger sound". The rule set is "Away locations (Location)", the event is "onLocationEvent", and the person command is "person(all)". The rule description is "This rule will trigger when somebody enters an 'Awayplace' location." Under the "Conditions" section, a modal window titled "1. LocationProperty" is open. It has two dropdown menus: "Location" with "Active location" selected, and "Property" with "Number of visits" selected. Red annotations with arrows point to these dropdowns, with text: "Select either the active location, or another specific location." pointing to the "Location" dropdown, and "Choose from a list of all location properties." pointing to the "Property" dropdown. A "Save" button is at the bottom right of the modal. Below the modal, a dropdown shows "Location has property" and an "Add condition" button is to its right.

This screenshot shows the same rule configuration interface as the previous one, but with the "Choose type of condition" dropdown menu open. The menu lists several options: "Choose type of condition", "Asset has property", "Item has property", "Location has property" (which is highlighted in blue), "Percentage chance", "Person had item", "Person has item", "Person has property", "Person has visited location", "Person is at location", and "Time is between". An "Add condition" button is visible to the right of the menu. Below the menu, the text "s here!" is partially visible, and an "Add action" button is at the bottom right.

When adding a condition, you first get to select which object you want to check the property for. Typically you will want to select the 'active object', that is, the object that triggered the rule. But you can also check a property for any other named object.

Choose the property you want to check from a scroll-down menu. You can then compare the property to a fixed value.

In the table on page 37, you find all types of conditions that rules can have.

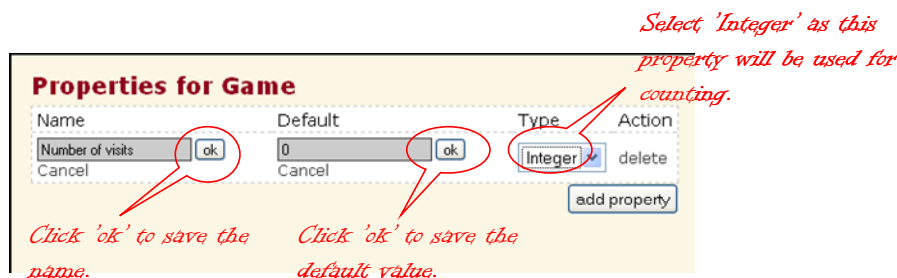
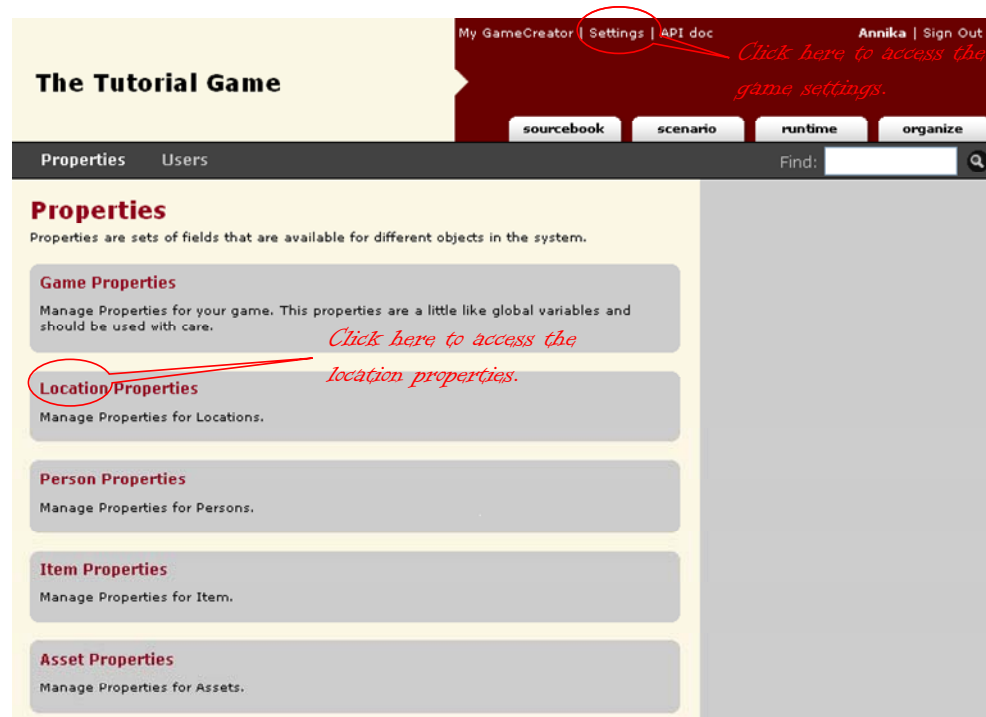
Properties

To keep track of things that change, game objects can have *properties*. If we want the system to count how many times a location has been visited, or which person possesses a certain game item, then we have to tell the system how to do that.

Note that there is very little that the system knows of on its own – we have to tell it what to keep track of, and when.

To add properties, click on ‘Settings’ (it’s up in the middle top menu) to access the overall game settings. Here, you can add properties to the game as such, as well as to locations, persons, items and assets.

Select the type of object you want to add a property to. In the example, we add a property to locations.



Type in a name for the property. You can also select whether the property value should be an integer (a number) or a string (a text) and set a ‘Default’ value for the property. Don’t forget to click ‘ok’ for both the name and the value! All objects of this type will now get this property. Its value will initially be set to the **Default** value.

Click on ‘add property’ to add more properties to the object type.

Game Mastering with Gamecreator

This function is under development and not available for the AR box! Use it with care.

This tutorial has focused on using Gamecreator to author a new game. With the location box it is also possible to use Gamecreator to monitor and govern a running game.

Event timeline

The event timeline shows an overview of all events that have occurred in the game. You can click on events to see some more information about them, and scroll in the timeline with the scroll bars on the bottom of the timeline.

All events are shown in the current version. In coming versions it will also be possible to filter the events.



Filters and manual actions

In the 'scenario' part of Gamecreator, you can select subsets of the locations, items, and people, and do things to them manually. You can for example send text messages to all players, or set/reset a property value for all locations or a single location. This functionality is particularly useful to start and end a game session.

Change the rules

You can change a game as it is running, by e.g. adding and deleting rules. Use this with care; you will probably introduce more problems than you fix.



Tips and tricks

Before starting a game session, check the value of all properties! Gamecreator does not automatically reset property values. Once you start to test your game the property values will start to change.

You can create people and items that are not real! It is often useful to represent in-game characters as persons, even if they don't run around in the real world. You can also use 'Items' to keep track of things like teams, winning conditions, and scores.

Event Table

This table lists all in-game events that the system is able to recognize, which box they apply to and how they are generated.

Event name	Applies to	Which box	How is this event generated
onLocationEvent	Locations	Location, AR	
offLocationEvent	Locations	Location, AR	
onItemEvent	Items	Location, AR	Location: A player uses the RFID glove to read an in-game RFID tag. AR: A player uses the magic lens device to view an AR marker.
offItemEvent	Items		Location: Generated immediately after reading an RFID tag. AR: Generated immediately after reading an AR marker.
onGeoPointEvent	Items	Location	Generated every time a device reports a new geographic position.
onLookEvent	Locations, Items	AR	Generated by viewing a marker connected to the item
onPropertyChangeEvent	Locations, Items, People	Location, AR	Generated when an object property changes value.
onDeviceEvent	Locations, Items	Location	Generated when a device is turned on.
offDeviceEvent	Locations, Items	Location	Generated when a device is turned off.

Conditions

The conditions in a rule decide if the effect should happen or not.

Condition name	Which box	Parameters	What is tested
Asset has property	AR, Location	Property name, fixed value, type of comparison	The value of the property is compared to the fixed value
Item has property	AR, Location	Property name, fixed value, type of comparison	The value of the property is compared to the fixed value
Location has property	AR, Location	Property name, fixed value, type of comparison	The value of the property is compared to the fixed value
Person has property	AR, Location	Property name, fixed value, type of comparison	The value of the property is compared to the fixed value

Effects Table

This table lists every that can happen as a result of a Gamecreator rule.

Effect name	Which box	Parameters	What will happen
Show text	Location	Choose which test to show. Choose who will see the text: <ul style="list-style-type: none">- The person who triggered the event- A named person	Location: A short text is displayed on the mobile phone screen. The text stays on the screen until another text or an image needs to be displayed.
Play sound	Location, AR	Choose with sound to play. Choose who will hear the sound: <ul style="list-style-type: none">- The person who triggered the event- A named person	Location: A sound is output at the phone. The sound is played once. AR: A sound is output at the ultra-mobile PC. The sound is played once.
Set asset property	Location, AR	Choose which asset to change the property for. Choose the property. Choose how to change its value.	Change the value of a property for a specific asset. You can use this to count up and down, or to set a fixed (text or number) value.
Set item property		Choose which item to change the property for. Choose the property. Choose how to change its value.	Change the value of a property for a specific item. You can use this to count up and down, or to set a fixed (text or number) value.
Set location property		Choose which location to change the property for. This	Change the value of a property for a specific location. You can

		<p>can be</p> <ul style="list-style-type: none"> - The current location - A specific location <p>Choose the property. Choose how to change its value.</p>	<p>use this to count up and down, or to set a fixed (text or number) value.</p>
Set person property		<p>Choose which person to change the property for. This can be</p> <ul style="list-style-type: none"> - The person who triggered the event - A specific person <p>Choose the property. Choose how to change its value.</p>	<p>Change the value of a property for a specific person. You can use this to count up and down, or to set a fixed (text or number) value.</p>