

# Image Grid

Displays images in a similarity grid.

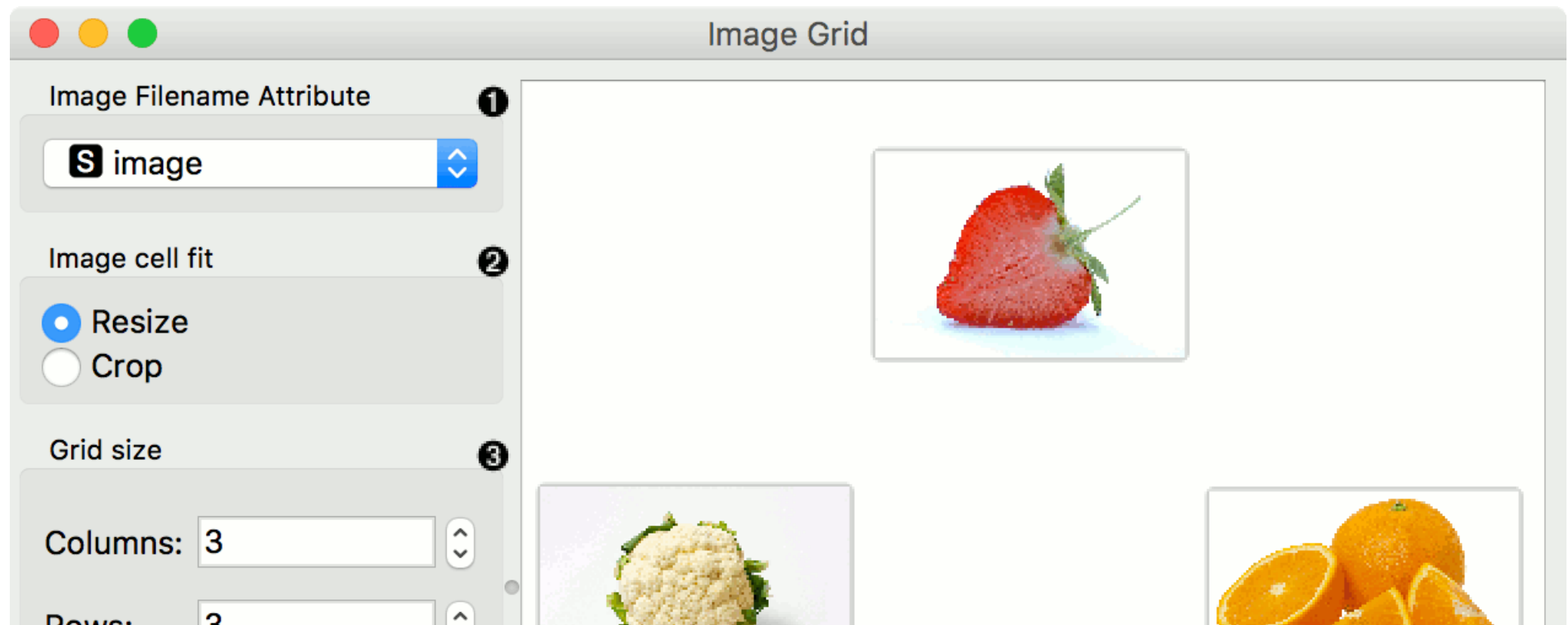
## Inputs

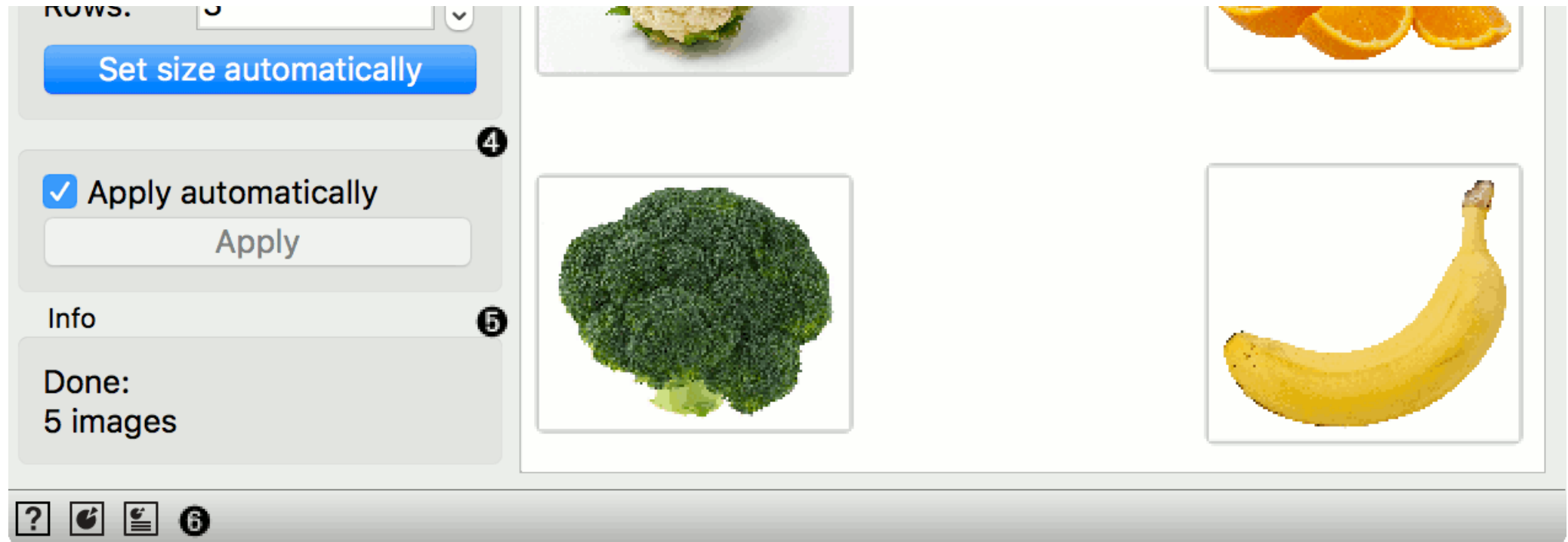
- Embeddings: Image embeddings from Image Embedding widget.
- Data Subset: A subset of embeddings or images.

## Outputs

- Images: Images from the dataset with an additional column specifying if the image is selected or the group, if there are several.
- Selected Images: Selected images with an additional column specifying the group.

The **Image Grid** widget can display images from a dataset in a similarity grid - images with similar content are placed closer to each other. It can be used for image comparison, while looking for similarities or discrepancies between selected data instances (e.g. bacterial growth or bitmap representations of handwriting).





1. *Image Filename Attribute*: Attribute containing paths to images.
2. *Image cell fit*: Resize scales the images to grid, while Crop crops them to squares.
3. *Grid size*: Set the size of the grid. Click *Set size automatically* to optimize the projection.
4. Tick the box to commit the changes automatically. Alternatively, click *Apply*.
5. Information on the input.
6. Access help, save image, and report (in that order).

## Example

**Image Grid** can be used to visualize similarity of images in a 2D projection. We have used 5 images of fruits and vegetables, namely orange, banana, strawberry, broccoli and cauliflower.

We loaded the images with **Import Images** and embedded them with Inception v3 embedder in **Image Embedding**.

Finally, we visualized the images in **Image Grid**. It is obvious that broccoli and cauliflower are much more alike than strawberry and banana.

The image displays the Orange Data Mining software interface, specifically the Image Grid widget configuration and execution windows.

**Workflow:** The workflow consists of three widgets connected in sequence: **Import Images**, **Image Embedding**, and **Image Grid**.

**Image Embedding Widget Settings:**

- Info:** Data with 5 instances. Connected to server.
- Settings:**
  - Image attribute:** image
  - Embedder:** Inception v3
  - Google's Inception v3 model trained on ImageNet.**
  - ☒ **Apply Automatically**
  - Cancel**

**Image Grid Widget Settings:**

- Image Filename Attribute:** image
- Image cell fit:** ☒ **Resize**, ☐ **Crop**
- Grid size:**
  - Columns:** 4
  - Rows:** 4
  - Set size automatically**
- ☒ **Apply automatically**
- Apply**
- Info:** Done: 5 images

**Image Grid Display:** The widget displays a grid of 5 images (as indicated by the 'Done: 5 images' status). The visible images are:

- Strawberry
- Oranges
- Cauliflower
- Broccoli
- Banana

