Project with Orange3

- This Project with Orange3 about cluster image and Machine Learning

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- For this Project, I need to set image.
- I search for a lot, but I could not find the image dataset so I search on Google and download image.
- My Data file (data) has 104 images.
- And download 2 images for end step.

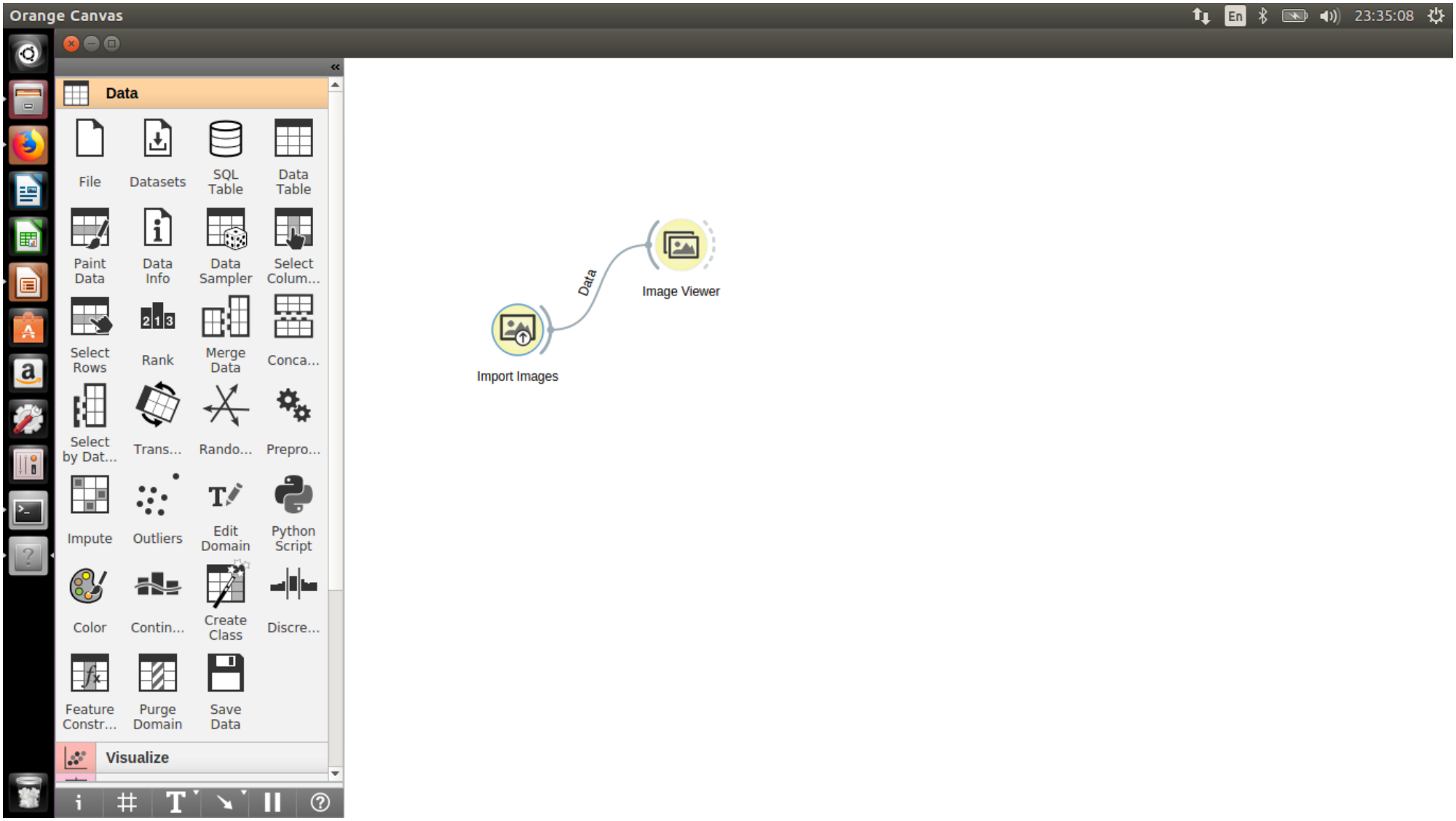
Step for work:

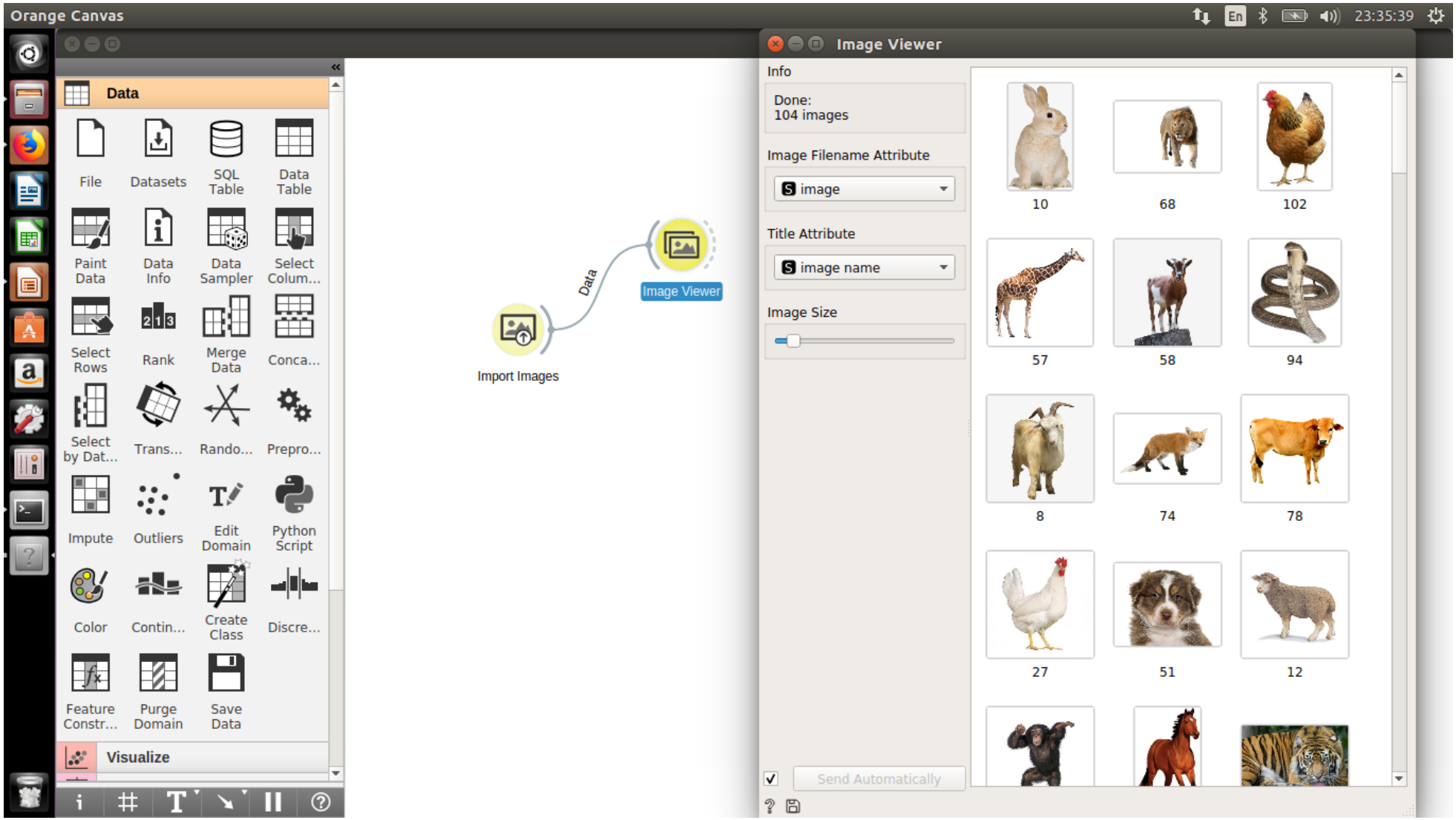
- 1. Open Orange3
- 2. Select “Image Import” then load data file.

  3. Conect to “Image Viewer”.

  you select “Image Viewer” and see images.

  (Like the figure next page.)

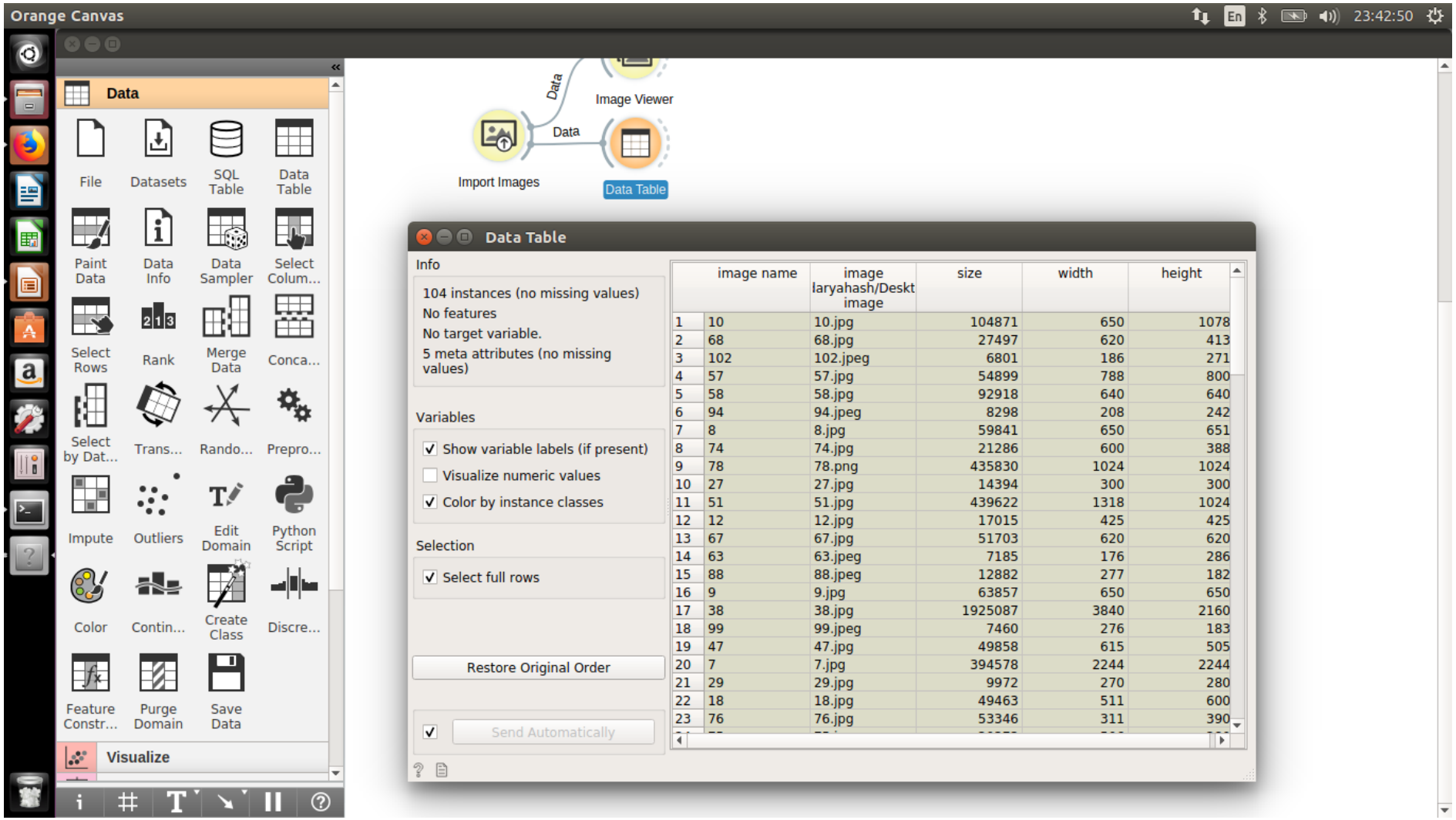

Orange Canvas
23:35:08
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Data
Image Viewer
Import Images


Orange Canvas
23:35:39
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Data
Image Viewer
Import Images
Image Viewer
Info
Done:
104 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
Send Automatically
10
68
102
57
58
94
8
74
78
27
51
12

- Connect to “Data Table”

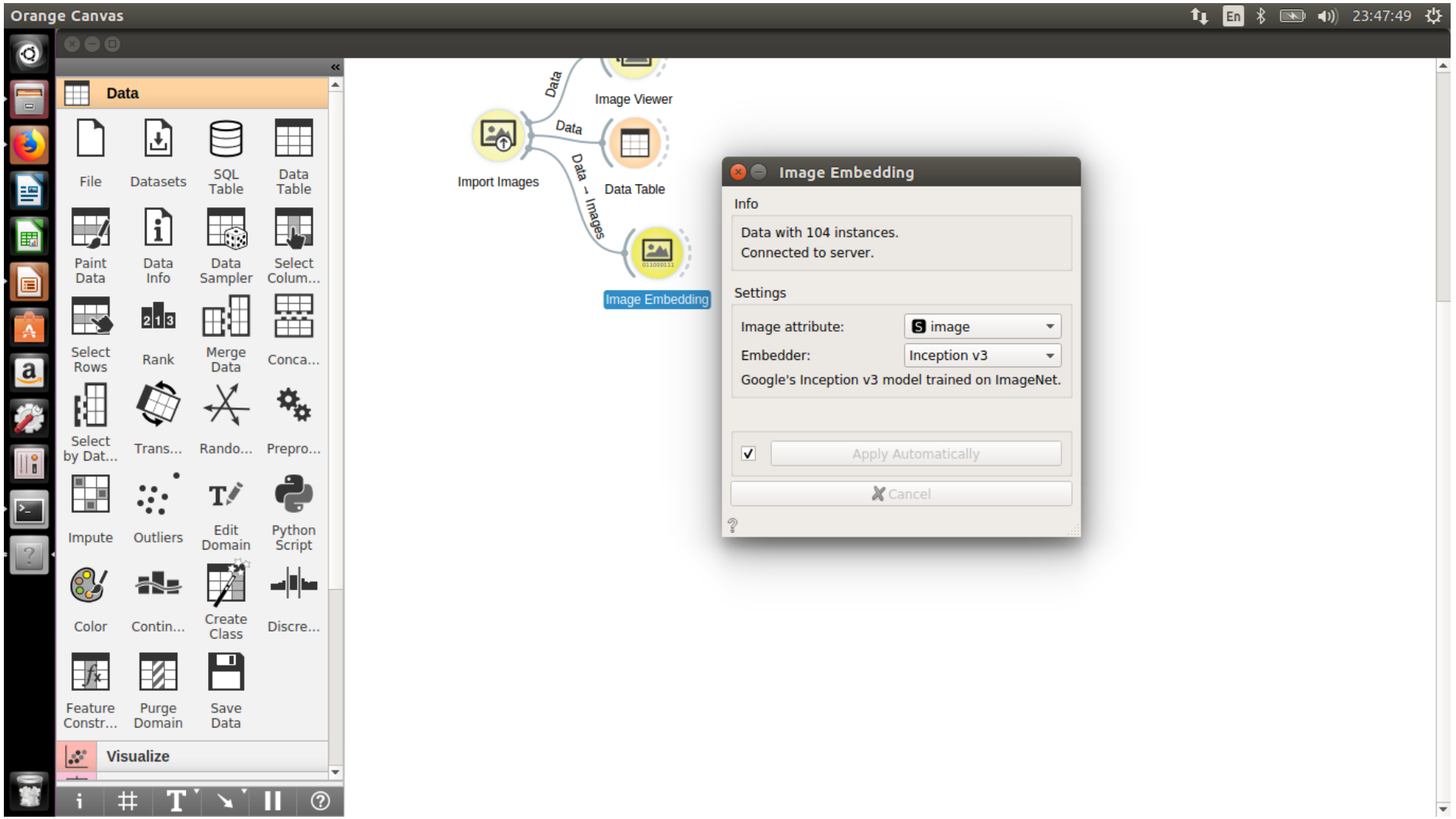
  You can see table of data image.

  (Like the figure next page.)

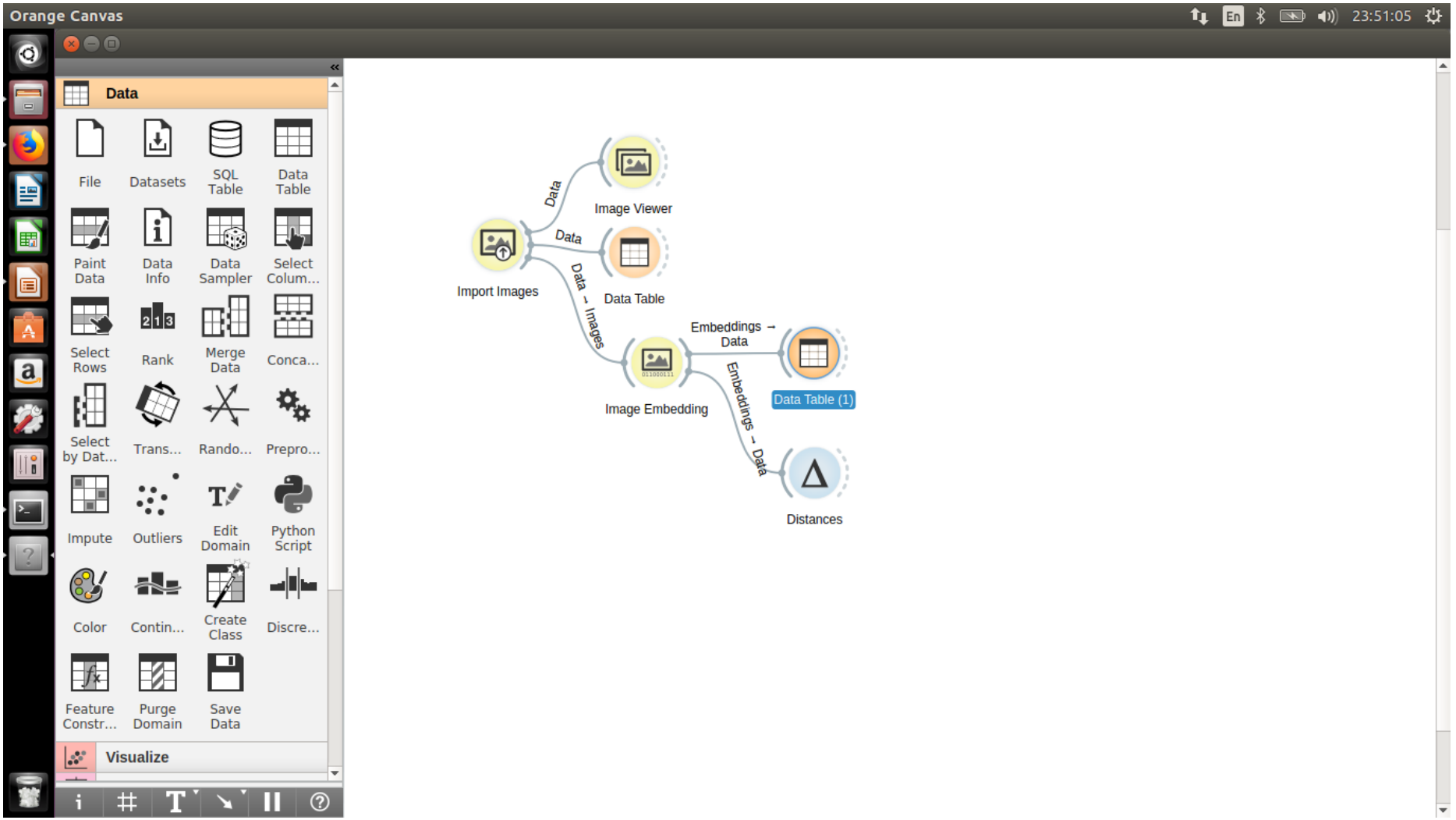

Orange Canvas
En
23:42:50
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Data
Image Viewer
Data
Import Images
Data Table
Data Table
Info
104 instances (no missing values)
No features
No target variable.
5 meta attributes (no missing values)
Variables
Show variable labels (if present)
Visualize numeric values
Color by instance classes
Selection
Select full rows
Restore Original Order
Send Automatically
image name
image laryahash/Deskt image
size
width
height
1 10 10.jpg 104871 650 1078
2 68 68.jpg 27497 620 413
3 102 102.jpeg 6801 186 271
4 57 57.jpg 54899 788 800
5 58 58.jpg 92918 640 640
6 94 94.jpeg 8298 208 242
7 8 8.jpg 59841 650 651
8 74 74.jpg 21286 600 388
9 78 78.png 435830 1024 1024
10 27 27.jpg 14394 300 300
11 51 51.jpg 439622 1318 1024
12 12 12.jpg 17015 425 425
13 67 67.jpg 51703 620 620
14 63 63.jpeg 7185 176 286
15 88 88.jpeg 12882 277 182
16 9 9.jpg 63857 650 650
17 38 38.jpg 1925087 3840 2160
18 99 99.jpeg 7460 276 183
19 47 47.jpg 49858 615 505
20 7 7.jpg 394578 2244 2244
21 29 29.jpg 9972 270 280
22 18 18.jpg 49463 511 600
23 76 76.jpg 53346 311 390

- Connect to “Image Embedding” wait until load image in “image Embedding”, you can use type embedding.

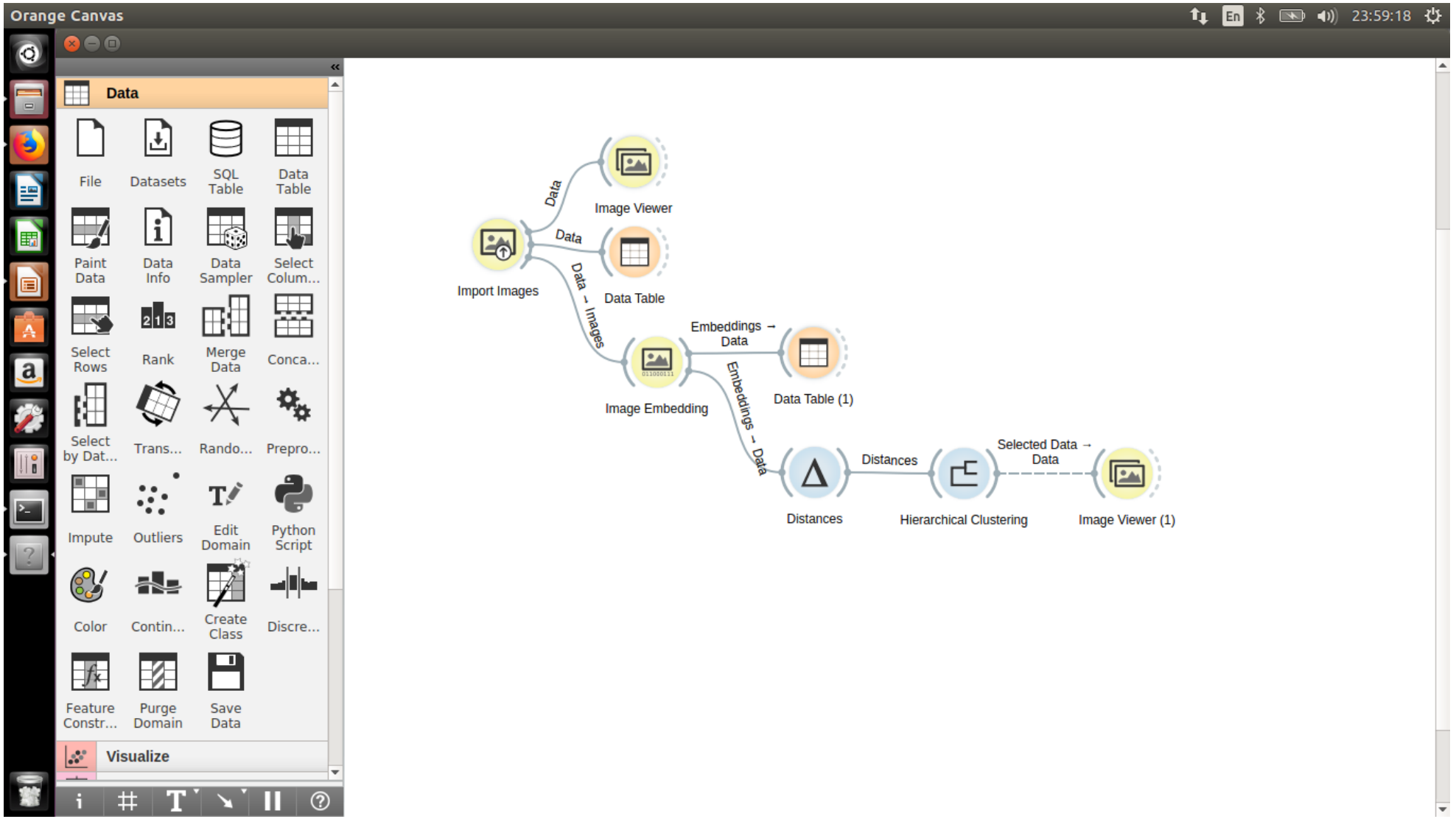
  (Like the figure next page.)

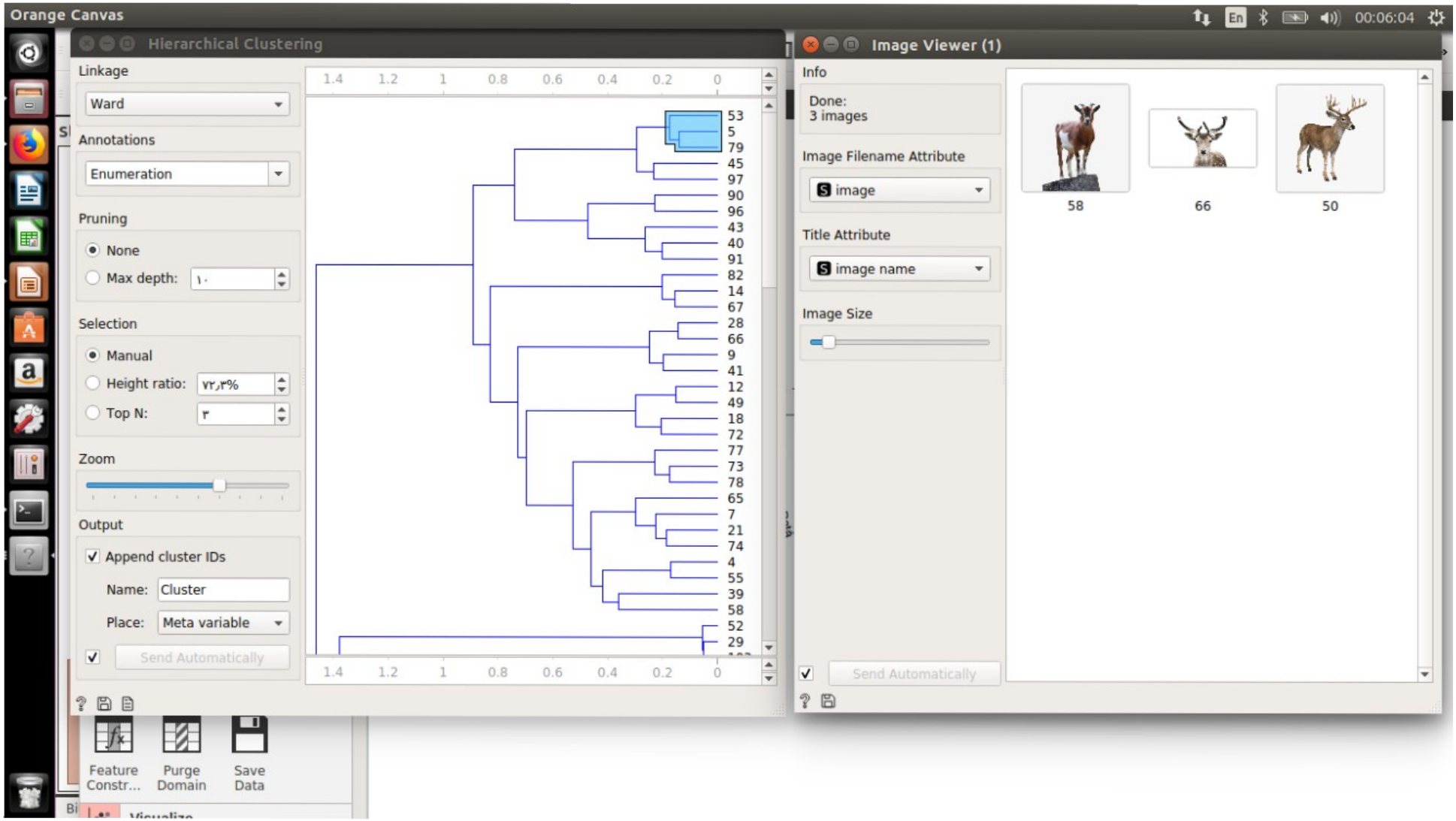

Orange Canvas
23:47:49
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Import Images
Image Viewer
Data Table
Image Embedding
Data
Data
Data → Images
Image Embedding
Info
Data with 104 instances.
Connected to server.
Settings
Image attribute:
image
Embedder:
Inception v3
Google's Inception v3 model trained on ImageNet.
Apply Automatically
Cancel

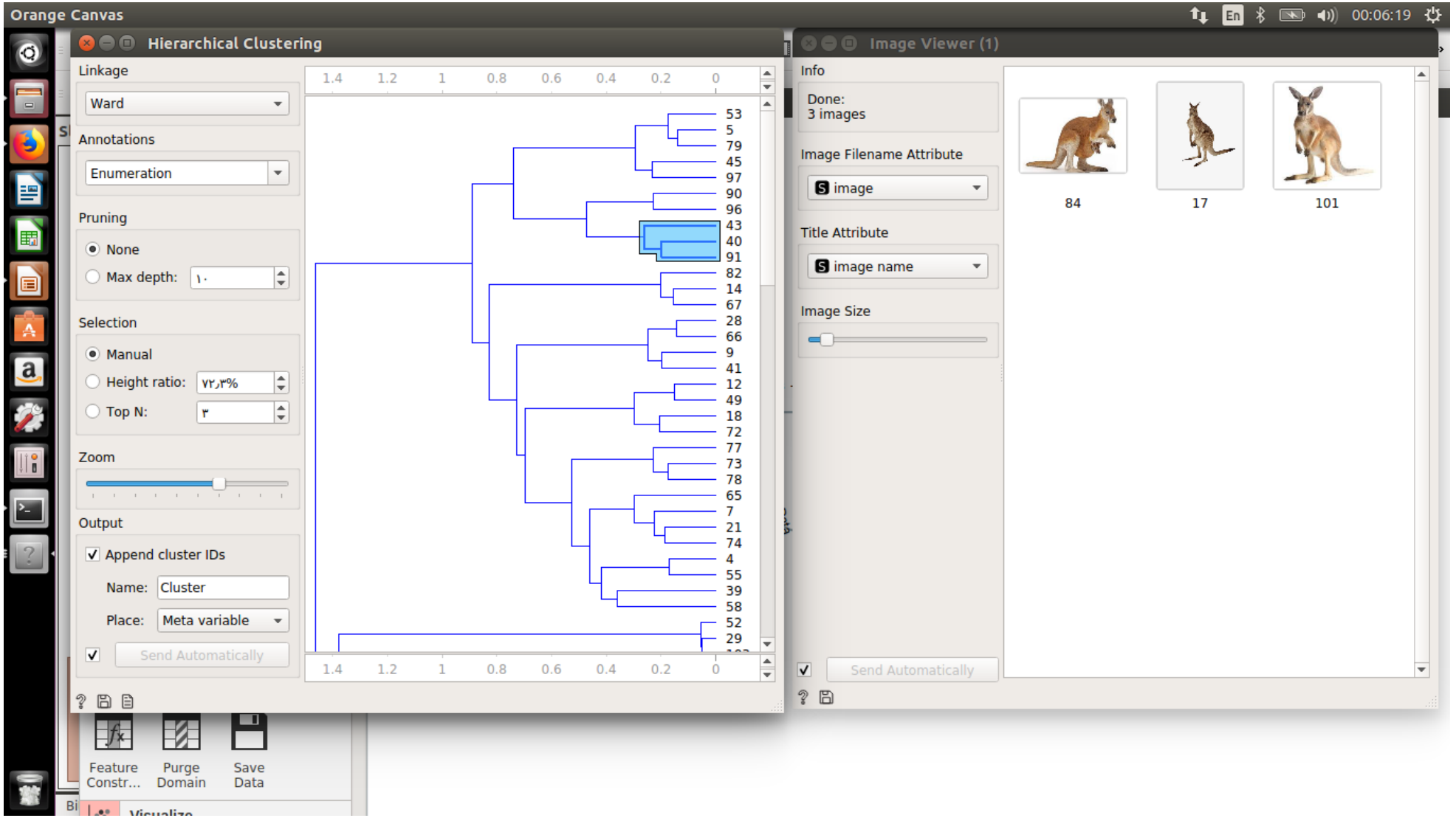
- Connect to “Data Table”.
- Connect to “Distance”. (Like the figure next page.)

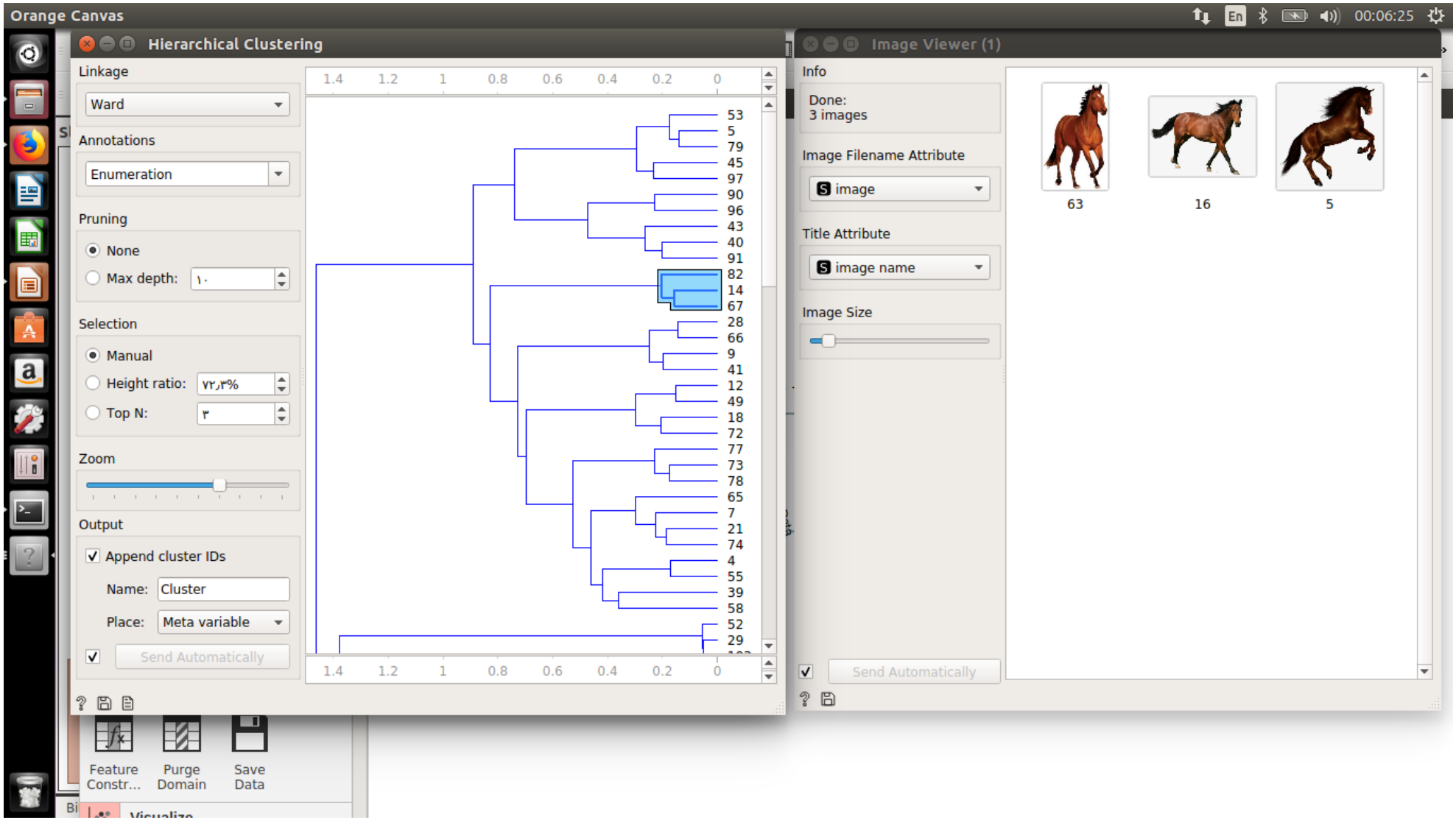

Orange Canvas
23:51:05
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Import Images
Data
Image Viewer
Data
Data Table
Data → Images
Image Embedding
Embeddings → Data
Data Table (1)
Embeddings → Data
Distances

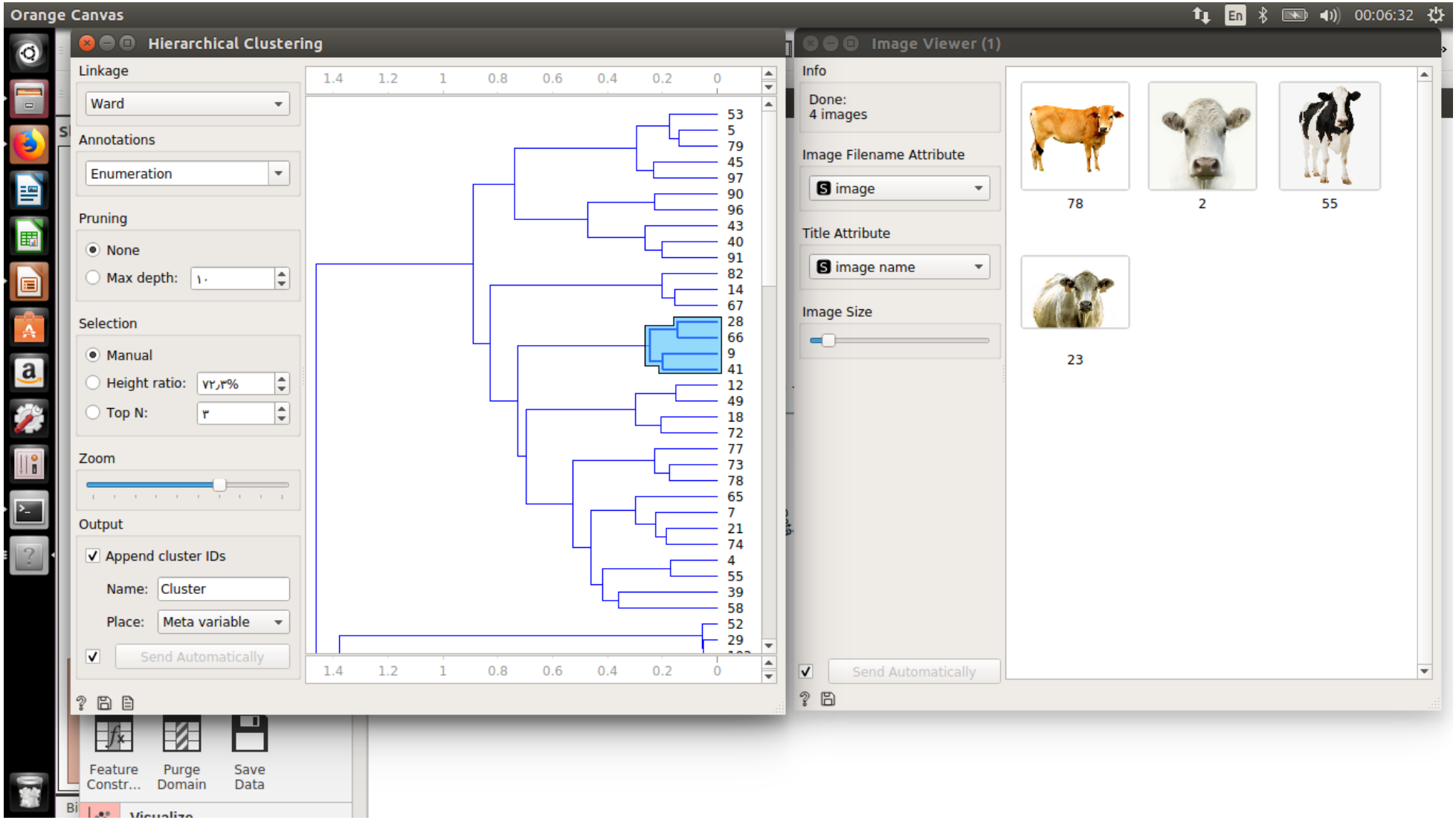
- Connect to “hierarchical Clustering”.
- Connect to “Image Viewer”. (Like the figure next page.)

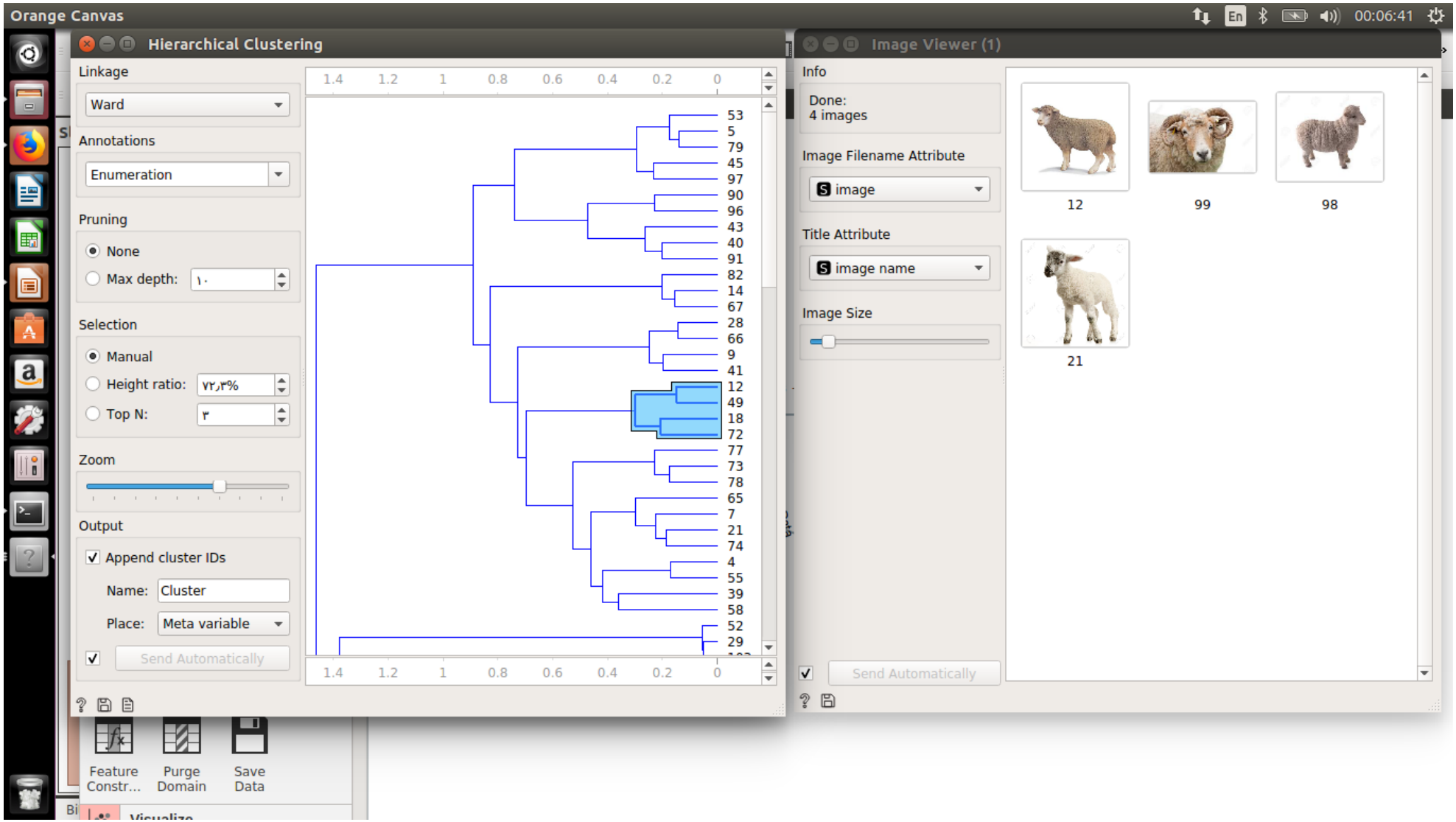

Orange Canvas
23:59:18
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Import Images
Data
Image Viewer
Data
Data Table
Data → Images
Image Embedding
Embeddings → Data
Data Table (1)
Embeddings → Data
Distances
Distances
Hierarchical Clustering
Selected Data → Data
Image Viewer (1)


Orange Canvas
00:06:04
Hierarchical Clustering
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
53 5 79 45 97 90 96 43 40 91 82 14 67 28 66 9 41 12 49 18 72 77 73 78 65 7 21 74 4 55 39 58 52 29
Feature Constr...
Purge Domain
Save Data
Image Viewer (1)
Info
Done:
3 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
Send Automatically
58
66
50

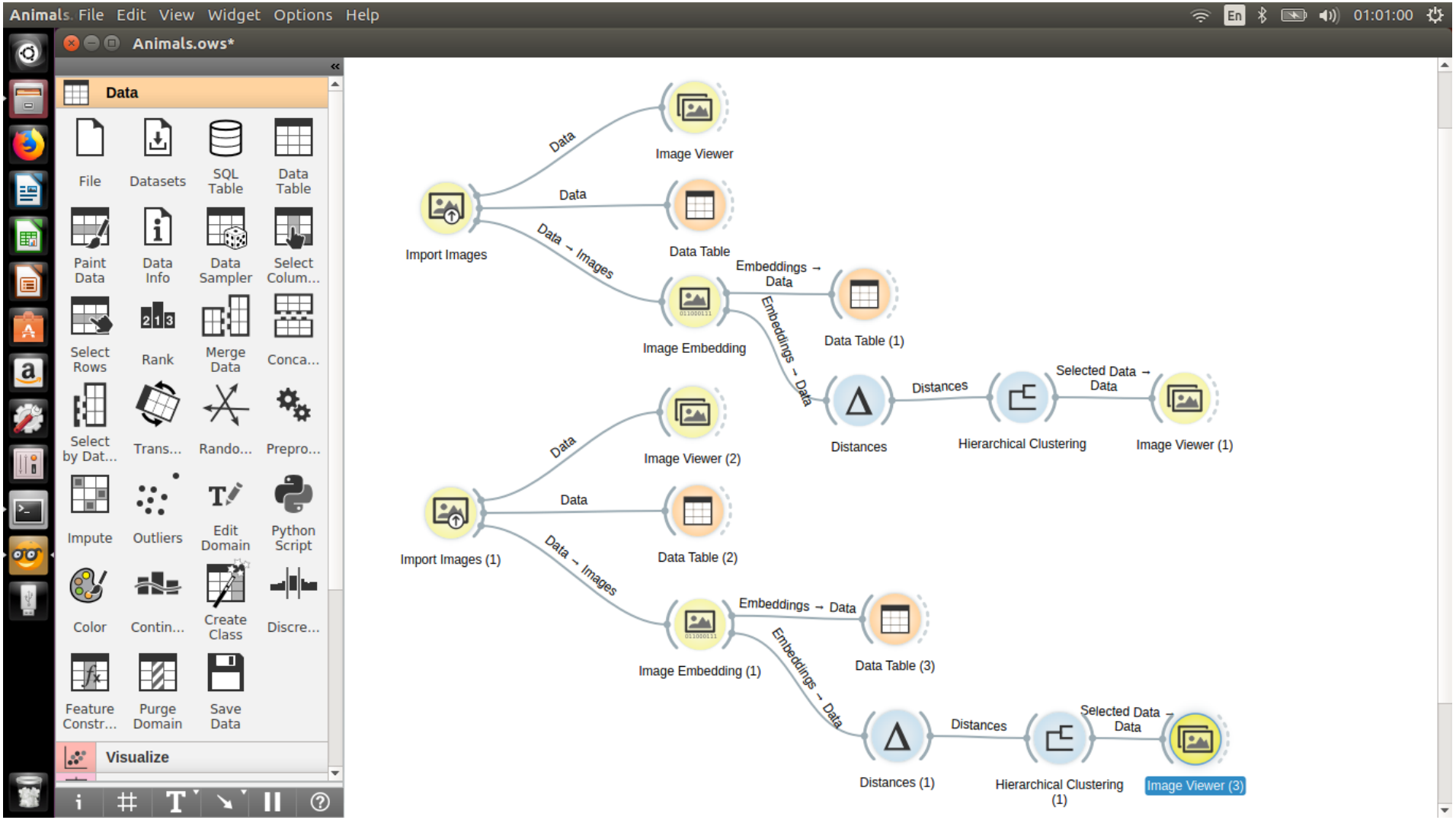

Orange Canvas
00:06:19
Hierarchical Clustering
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
53 5 79 45 97 90 96 43 40 91 82 14 67 28 66 9 41 12 49 18 72 77 73 78 65 7 21 74 4 55 39 58 52 29
Image Viewer (1)
Info
Done:
3 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
84
17
101
Send Automatically
Feature Constr...
Purge Domain
Save Data


Orange Canvas
00:06:25
Hierarchical Clustering
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
53 5 79 45 97 90 96 43 40 91 82 14 67 28 66 9 41 12 49 18 72 77 73 78 65 7 21 74 4 55 39 58 52 29
Image Viewer (1)
Info
Done:
3 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
63
16
5
Send Automatically
Feature Constr...
Purge Domain
Save Data

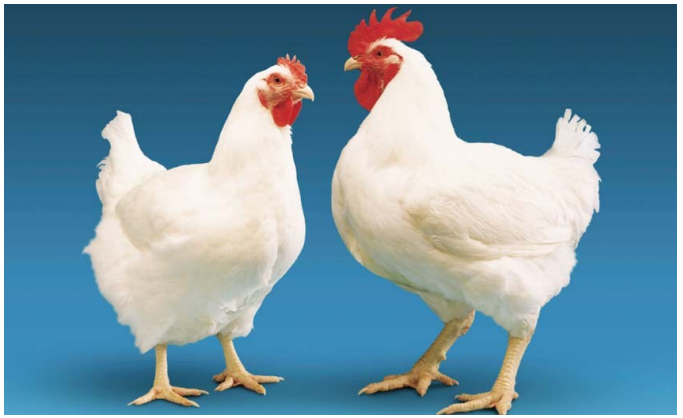

Orange Canvas
00:06:32
Hierarchical Clustering
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
53 5 79 45 97 90 96 43 40 91 82 14 67 28 66 9 41 12 49 18 72 77 73 78 65 7 21 74 4 55 39 58 52 29
Image Viewer (1)
Info
Done:
4 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
78
2
55
23
Send Automatically
Feature Constr...
Purge Domain
Save Data


Orange Canvas
00:06:41
Hierarchical Clustering
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
53 5 79 45 97 90 96 43 40 91 82 14 67 28 66 9 41 12 49 18 72 77 73 78 65 7 21 74 4 55 39 58 52 29
Image Viewer (1)
Info
Done:
4 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
12
99
98
21
Send Automatically
Feature Constr...
Purge Domain
Save Data

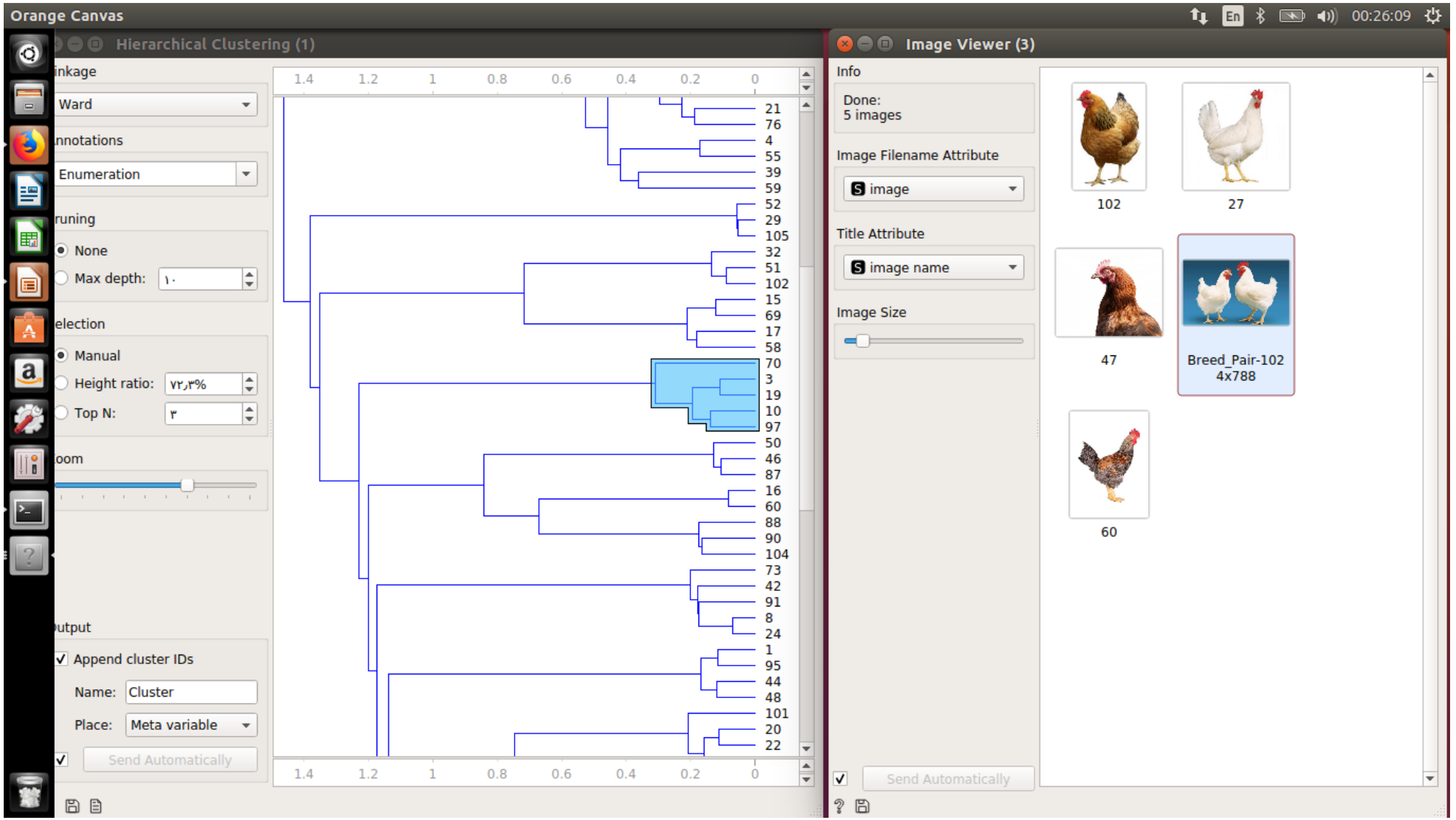
- Now add tow images in data image so has 106 images. Repeat all steps with new data images.

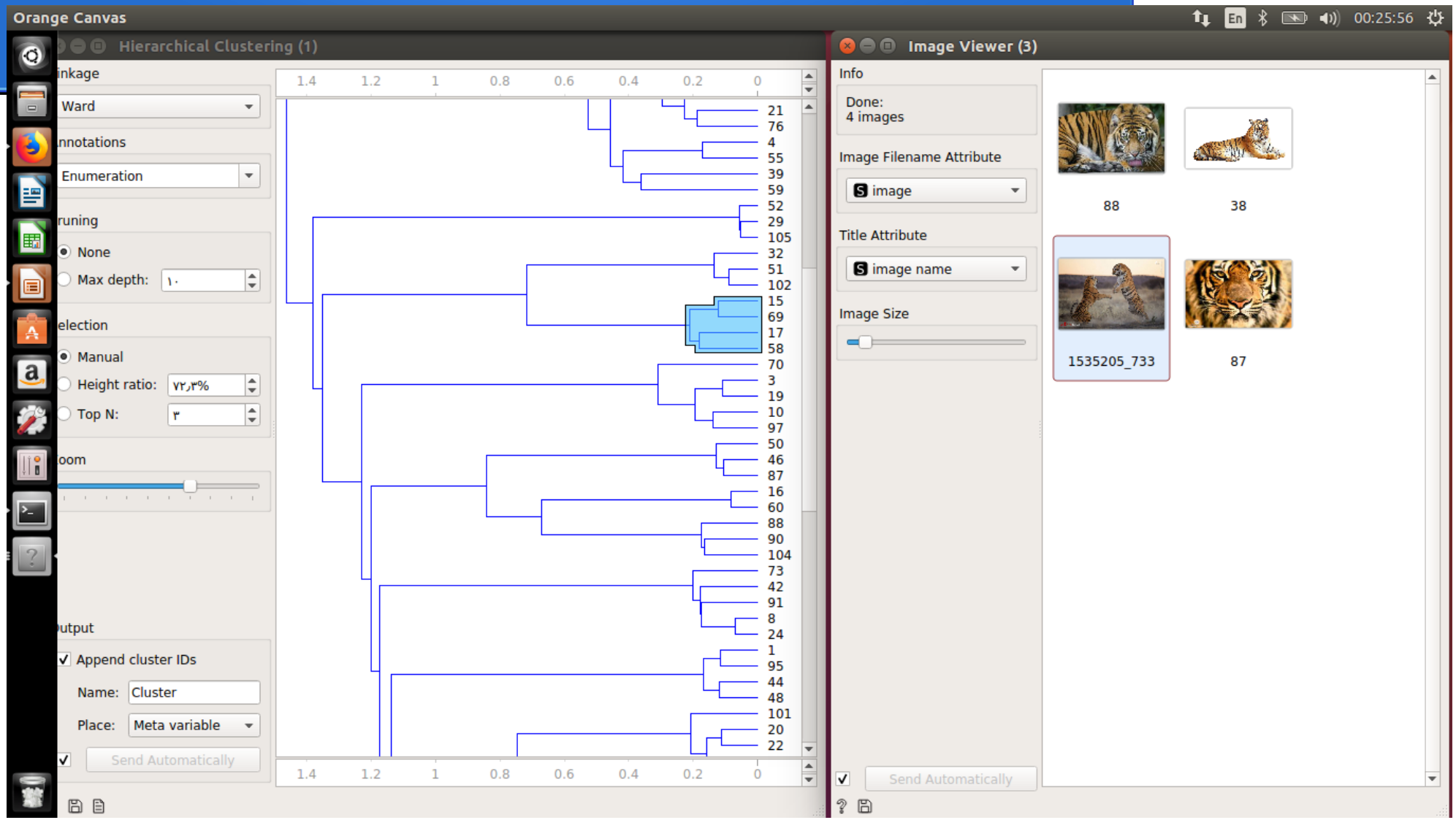

Animals File Edit View Widget Options Help
01:01:00
Animals.ows*
Data
File
Datasets
SQL Table
Data Table
Paint Data
Data Info
Data Sampler
Select Colum...
Select Rows
Rank
Merge Data
Conca...
Select by Dat...
Trans...
Rando...
Prepro...
Impute
Outliers
Edit Domain
Python Script
Color
Contin...
Create Class
Discre...
Feature Constr...
Purge Domain
Save Data
Visualize
Import Images
Data
Image Viewer
Data
Data Table
Data → Images
Image Embedding
Embeddings → Data
Data Table (1)
Embeddings → Data
Distances
Distances
Selected Data → Data
Hierarchical Clustering
Image Viewer (1)
Import Images (1)
Data
Image Viewer (2)
Data
Data Table (2)
Data → Images
Image Embedding (1)
Embeddings → Data
Data Table (3)
Embeddings → Data
Distances (1)
Distances
Selected Data → Data
Hierarchical Clustering (1)
Image Viewer (3)

- Of course, you can only load new data image without having to repeat the steps, I only want to see the difference.
- You can see below the two images that have been added.



- You can see below result new clustering that images correct clustering.


Orange Canvas
00:26:09
Hierarchical Clustering (1)
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
21 76 4 55 39 59 52 29 105 32 51 102 15 69 17 58 70 3 19 10 97 50 46 87 16 60 88 90 104 73 42 91 8 24 1 95 44 48 101 20 22
Image Viewer (3)
Info
Done:
5 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
Send Automatically
102
27
47
Breed_Pair-102
4x788
60


Orange Canvas
00:25:56
Hierarchical Clustering (1)
Linkage
Ward
Annotations
Enumeration
Pruning
None
Max depth:
Selection
Manual
Height ratio:
Top N:
Zoom
Output
Append cluster IDs
Name:
Cluster
Place:
Meta variable
Send Automatically
1.4 1.2 1 0.8 0.6 0.4 0.2 0
21 76 4 55 39 59 52 29 105 32 51 102 15 69 17 58 70 3 19 10 97 50 46 87 16 60 88 90 104 73 42 91 8 24 1 95 44 48 101 20 22
Image Viewer (3)
Info
Done:
4 images
Image Filename Attribute
image
Title Attribute
image name
Image Size
88
38
1535205_733
87
Send Automatically

Good Lock