Parameter Space Exploration for VisRSeq

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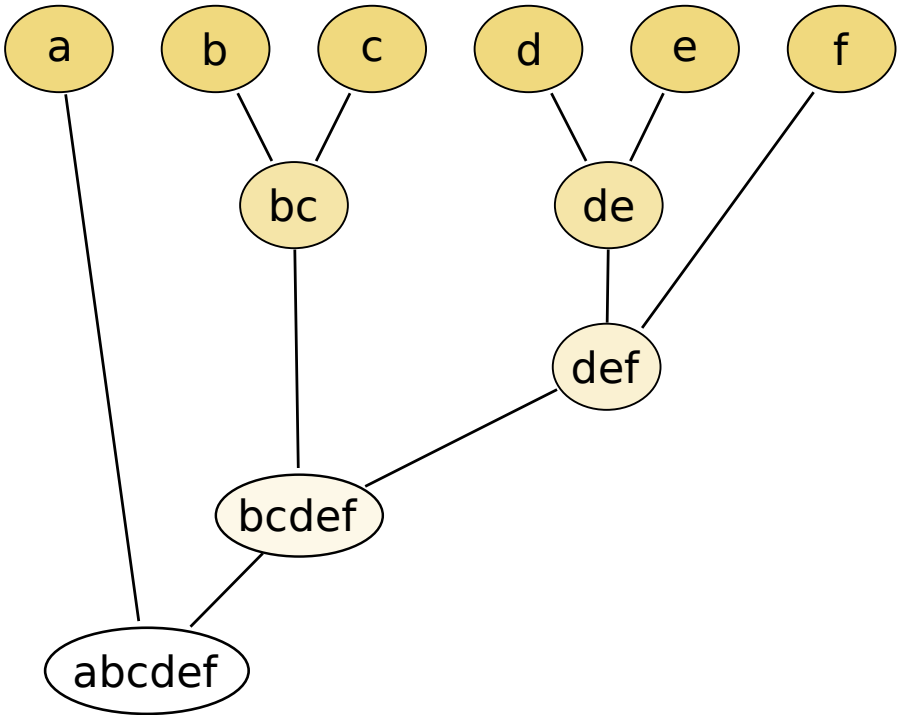
Content

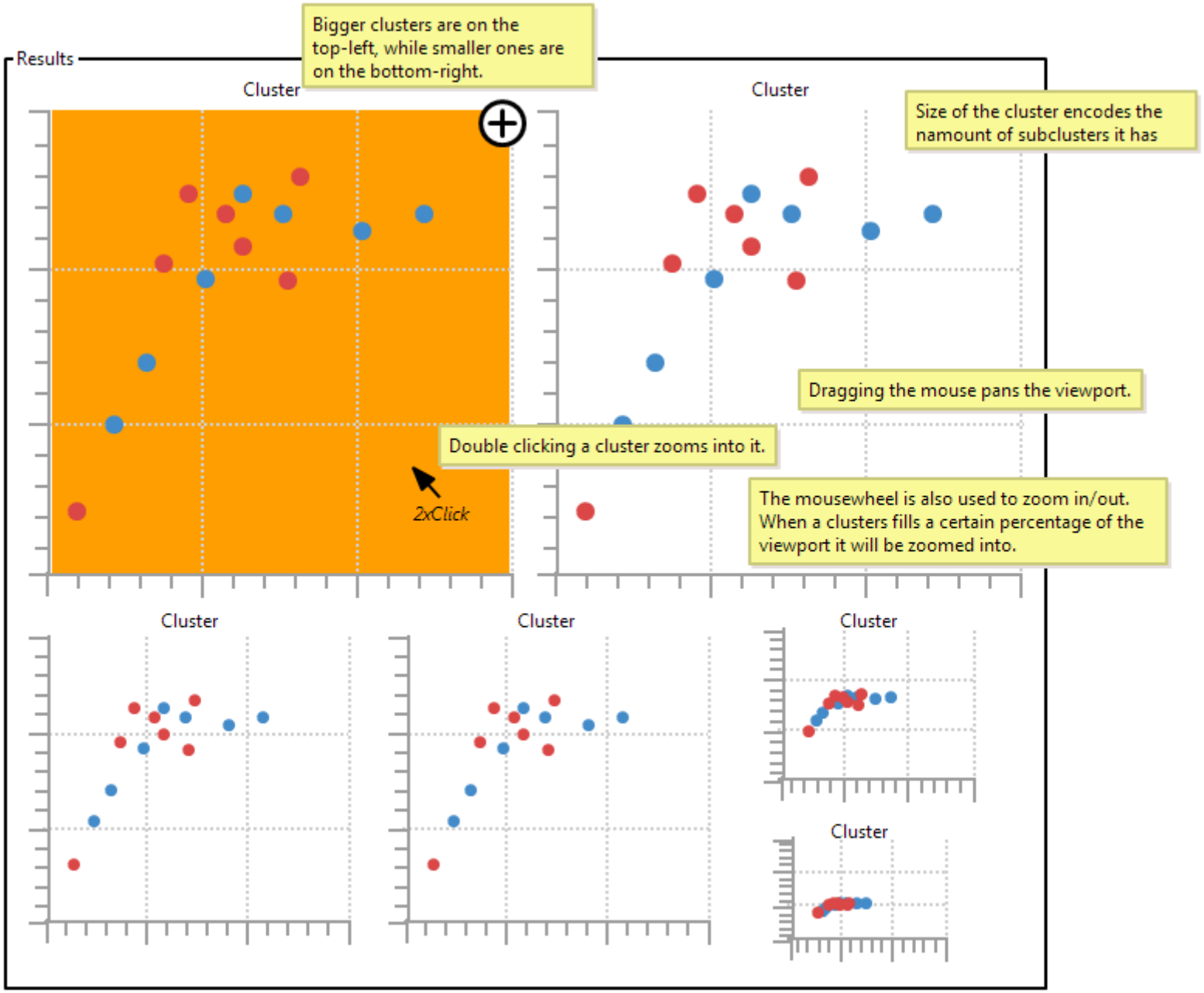
- Recap of project
- Visualization design
- Prototype

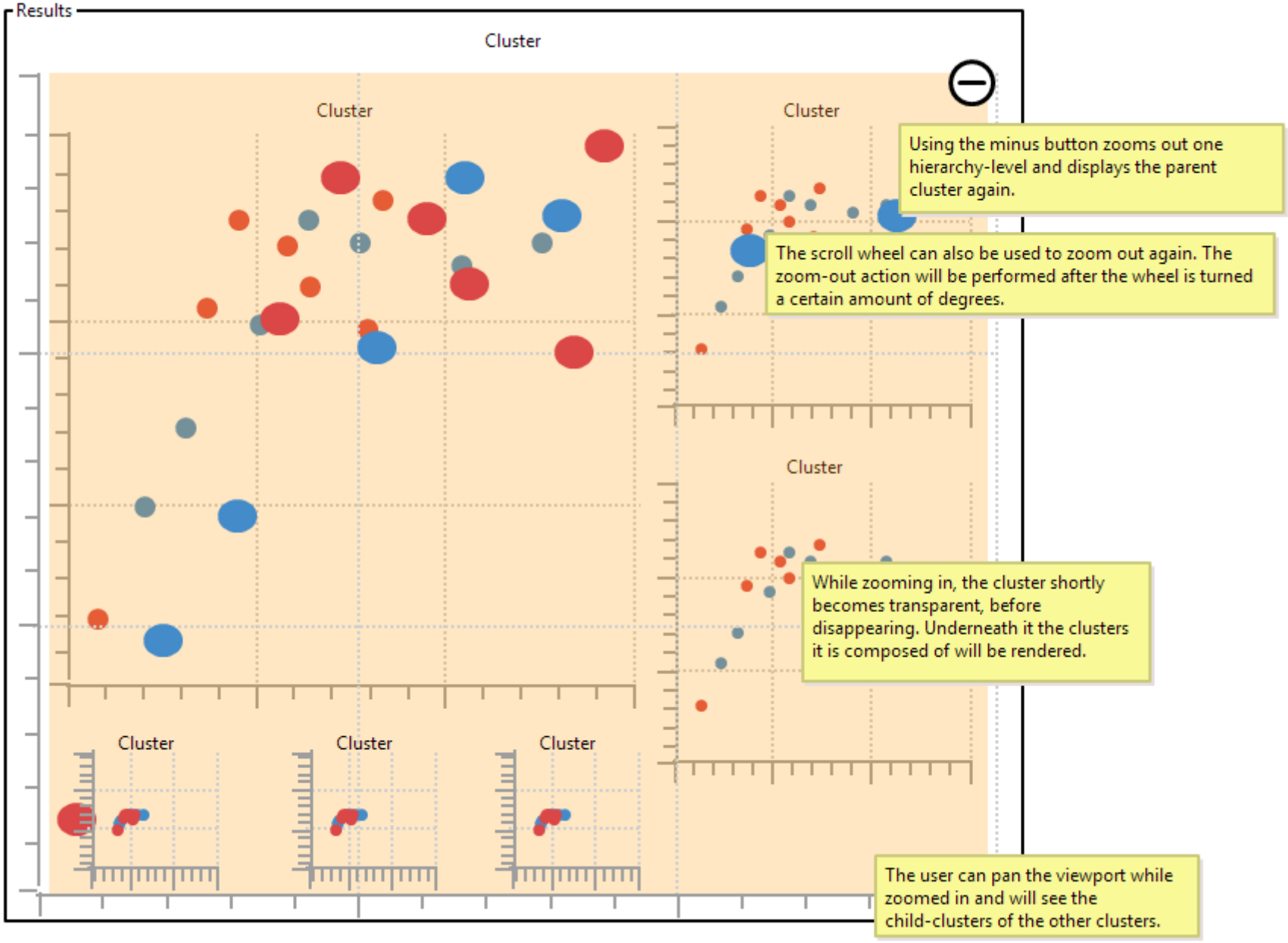
Project recap

- VisRSeq lets non-programmers use R
- VisRSeq allows only one plot at a time
- Parameter space exploration
- Clustering

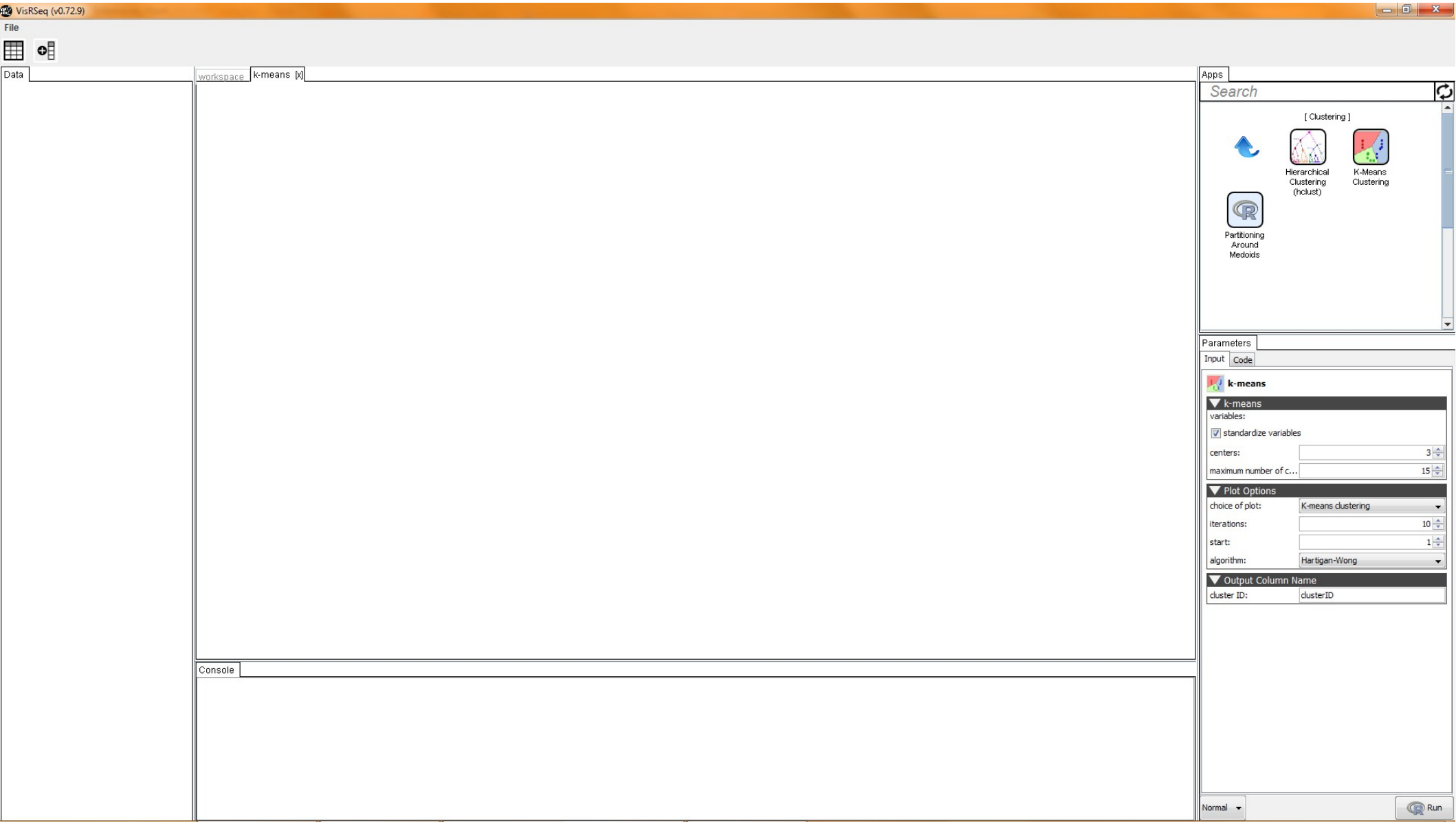
Hierarchical clustering



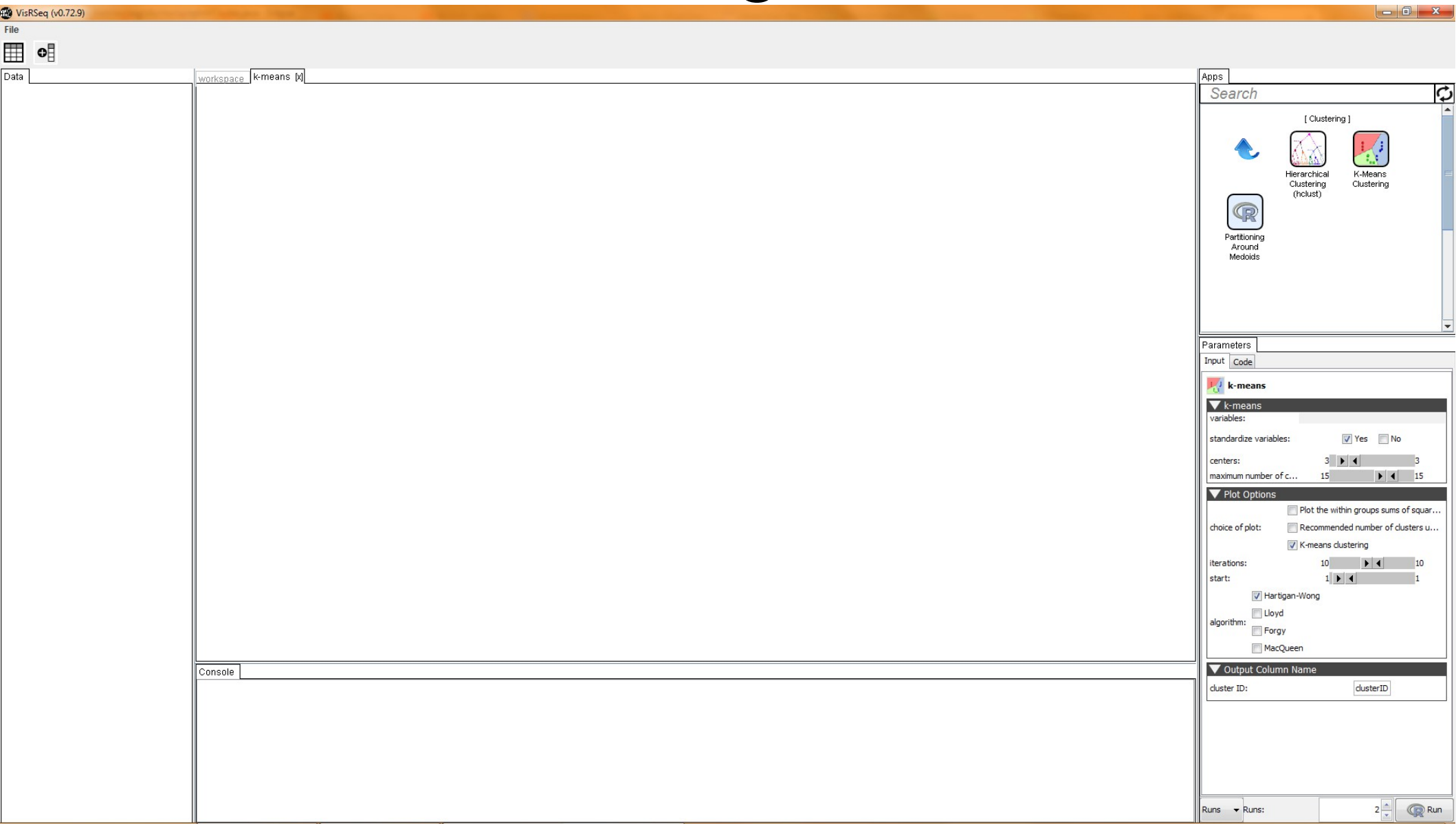

Results
Bigger clusters are on the top-left, while smaller ones are on the bottom-right.
Cluster
Cluster
Size of the cluster encodes the namount of subclusters it has
Dragging the mouse pans the viewport.
Double clicking a cluster zooms into it.
2xClick
The mousewheel is also used to zoom in/out. When a clusters fills a certain percentage of the viewport it will be zoomed into.
Cluster
Cluster
Cluster
Cluster


Results
Cluster
Cluster
Cluster
Cluster
Cluster
Cluster
Cluster
Using the minus button zooms out one hierarchy-level and displays the parent cluster again.
The scroll wheel can also be used to zoom out again. The zoom-out action will be performed after the wheel is turned a certain amount of degrees.
While zooming in, the cluster shortly becomes transparent, before disappearing. Underneath it the clusters it is composed of will be rendered.
The user can pan the viewport while zoomed in and will see the child-clusters of the other clusters.

Normal View


VisRSeq (v0.72.9)
File
Data
workspace
k-means [x]
Apps
Search
[Clustering]
Hierarchical Clustering (hclust)
K-Means Clustering
Partitioning Around Medoids
Parameters
Input
Code
k-means
k-means
variables:
standardize variables
centers:
3
maximum number of c...
15
Plot Options
choice of plot:
K-means clustering
iterations:
10
start:
1
algorithm:
Hartigan-Wong
Output Column Name
cluster ID:
clusterID
Console
Normal
Run

Ranges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Console
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Parameters
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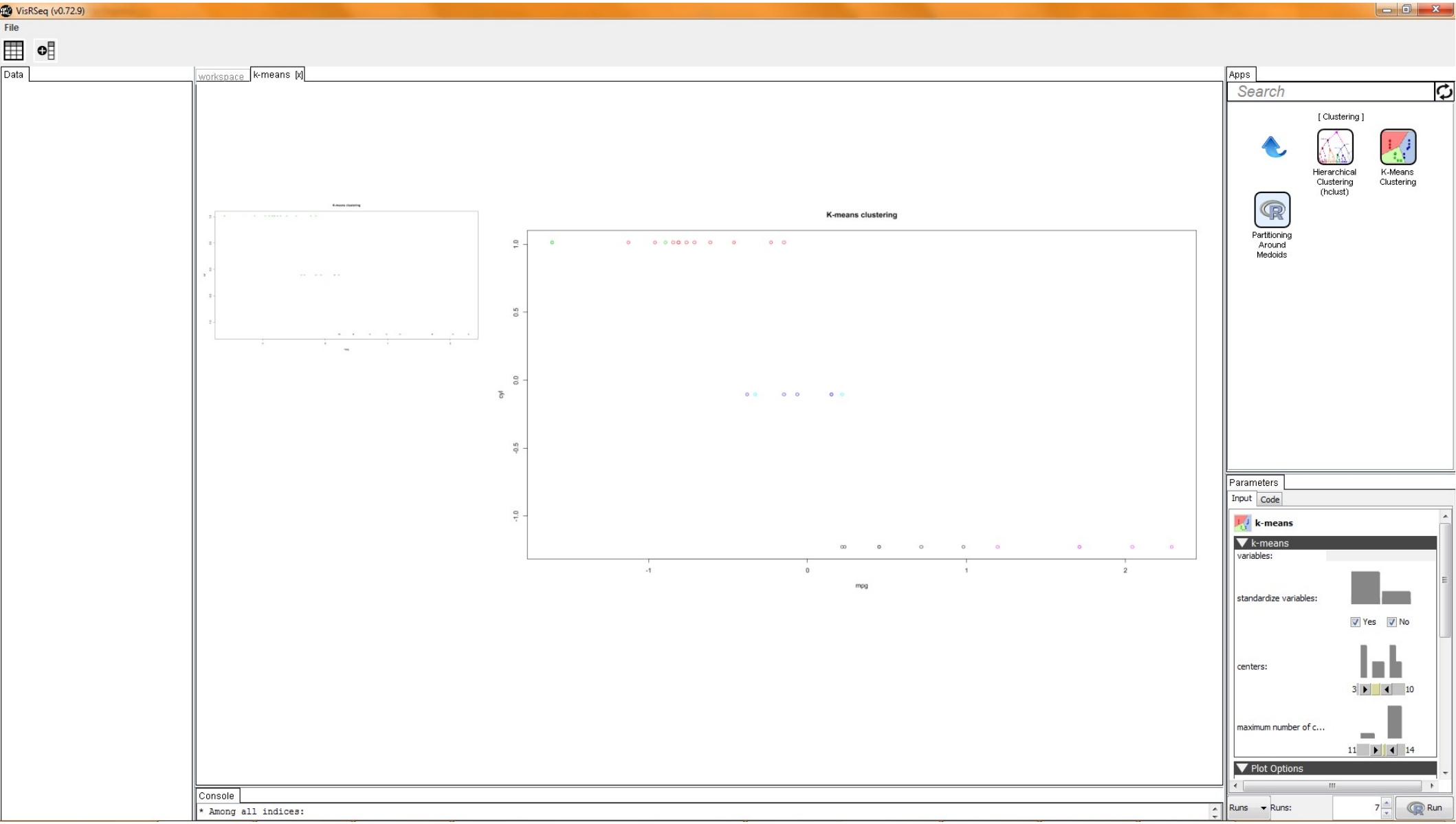
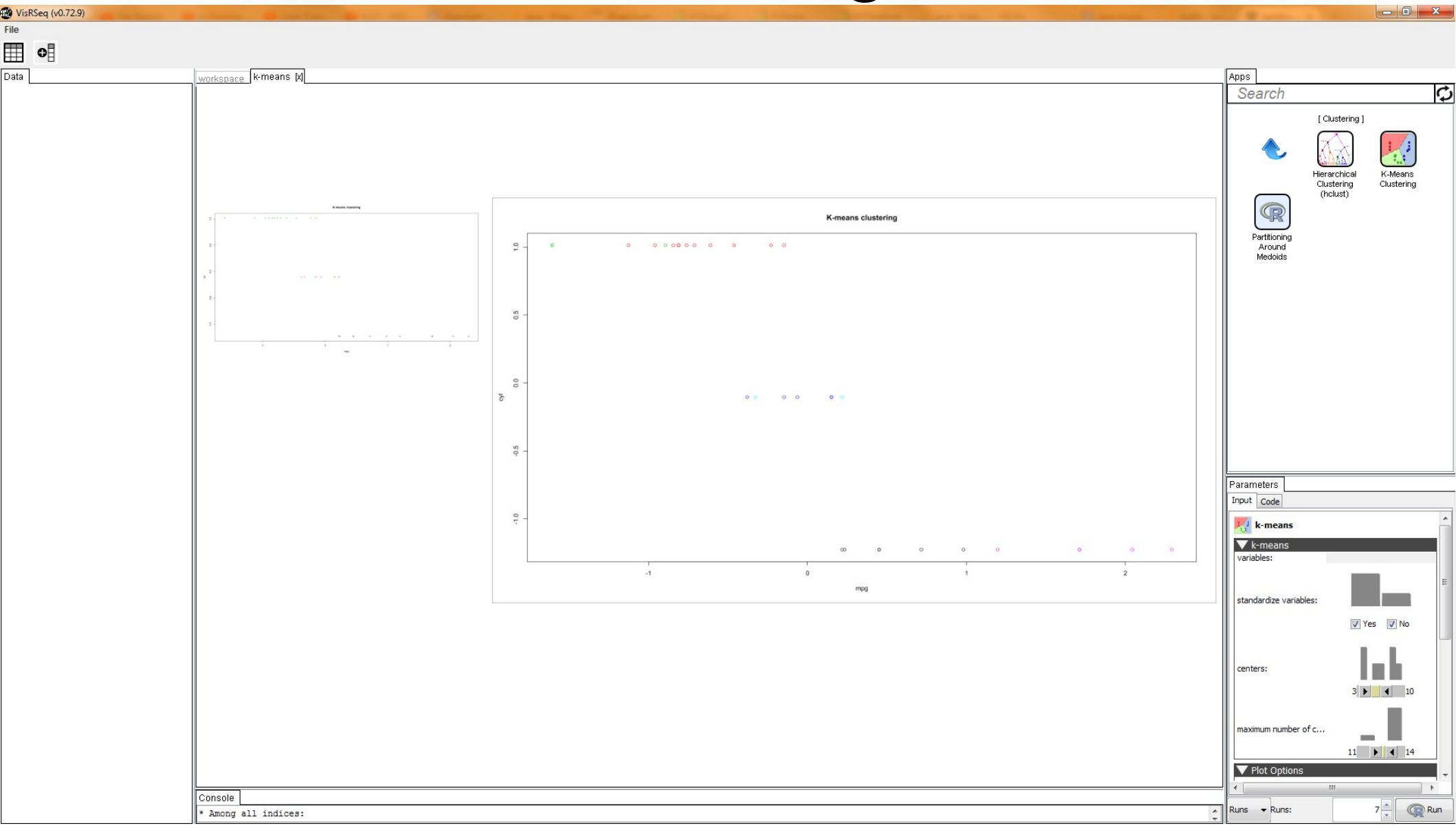
Code
k-means
k-means
variables:
standardize variables:
Yes
No
centers:
maximum number of c...
Plot Options
Plot the within groups sums of squar...
choice of plot:
Recommended number of clusters u...
K-means clustering
iterations:
start:
Hartigan-Wong
Lloyd
algorithm:
Forgy
MacQueen
Output Column Name
cluster ID:
clusterID
Runs
Runs:
Run

Distribution



Hovering


VisRSeq (v0.72.9)
File
Data
workspace
k-means [x]
K-means clustering
cyl
mpg
Apps
Search
[Clustering]
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k-means
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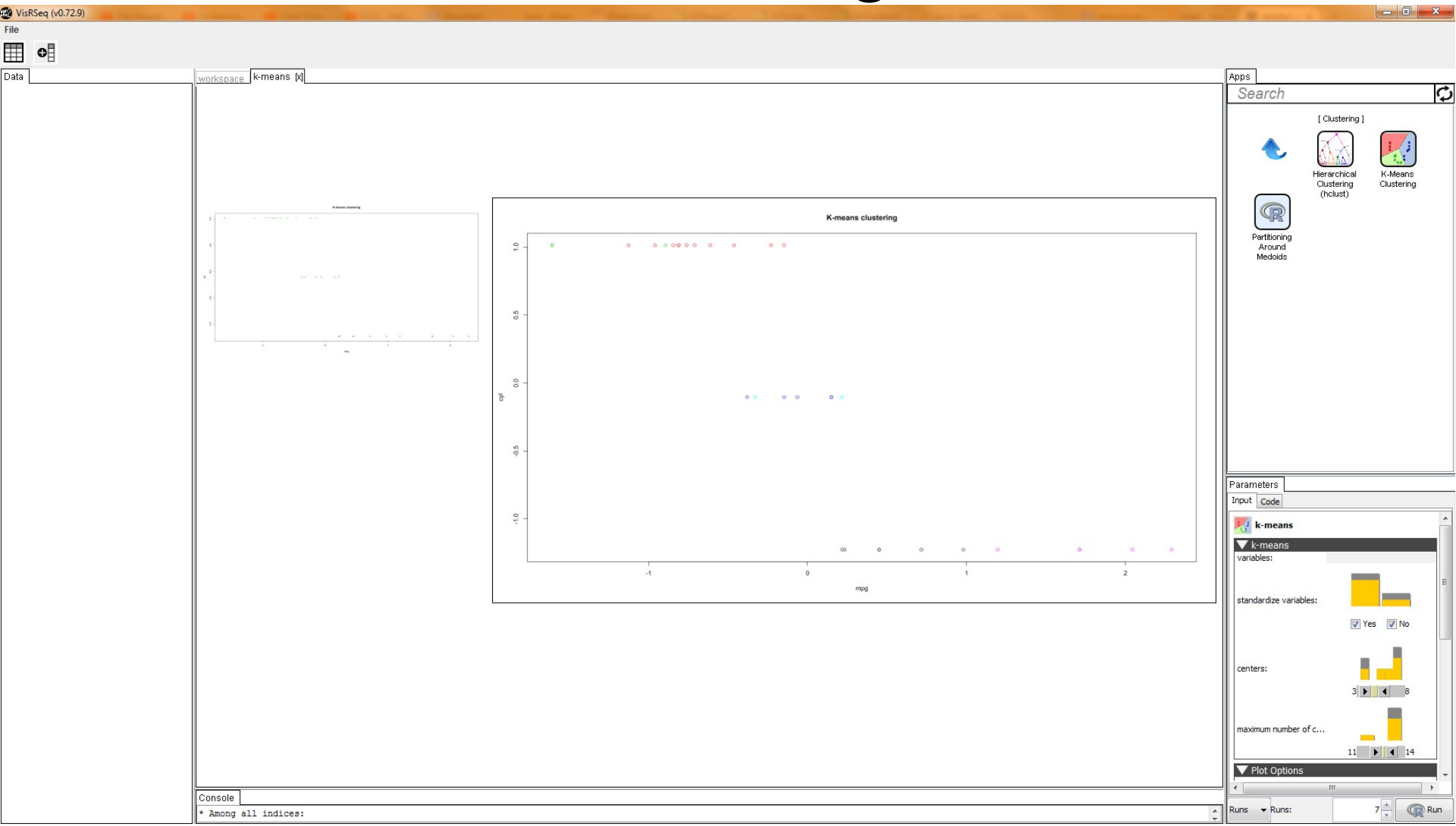
standardize variables:
Yes
No
centers:
maximum number of c...
Plot Options
Runs
Runs:
Run
Console
* Among all indices:

Selecting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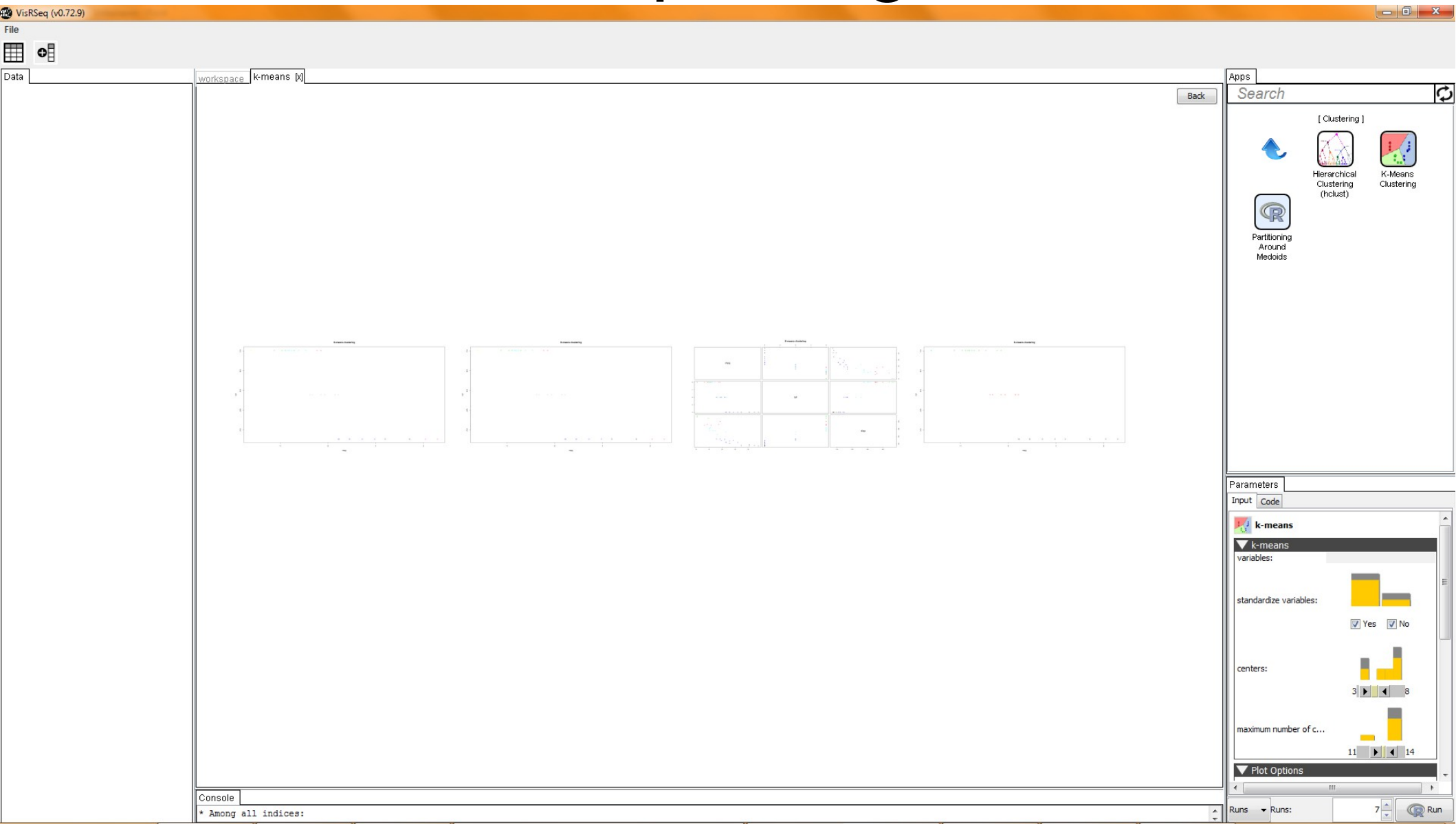
Inspecting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Back
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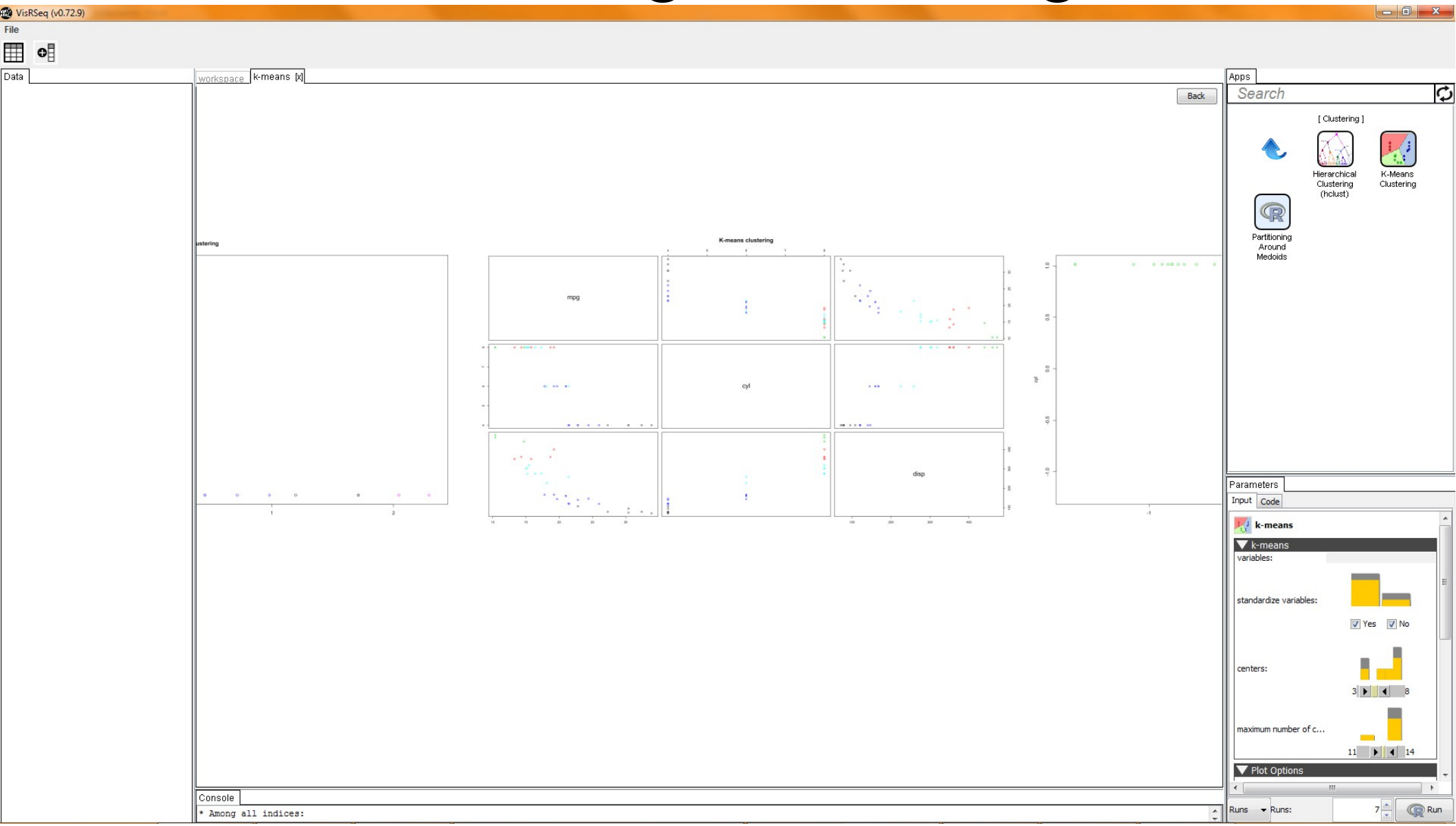
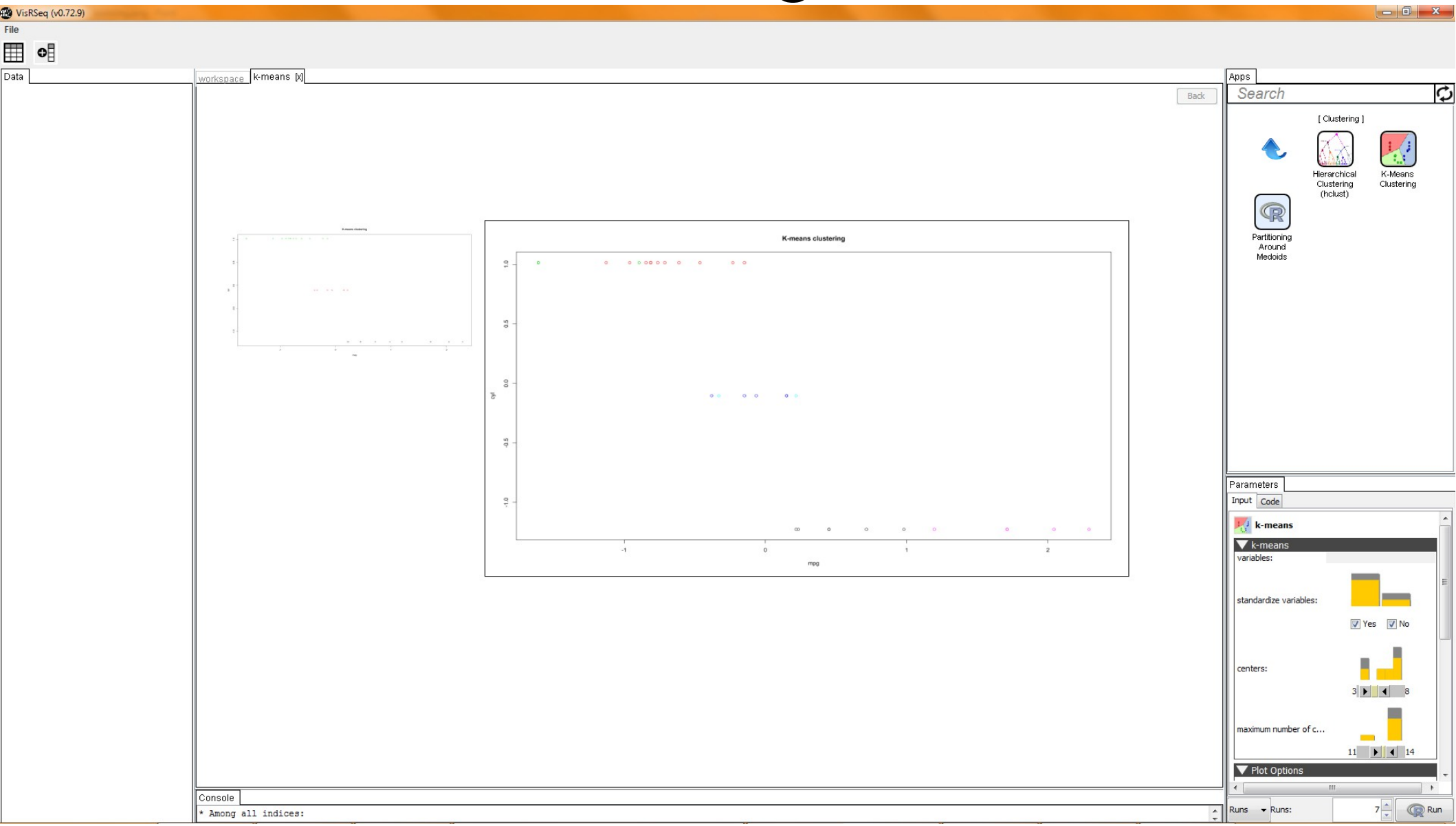
Parameters
Input
Code
k-means
k-means
variables:
standardize variables:
Yes
No
centers:
3
8
maximum number of c...
11
14
Plot Options
Runs
Runs:
7
Run
Console
* Among all indices:

Zooming & Panning



Zooming out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Plot Options
Console
* Among all indices:
Runs
Runs:
Run

Challenges

- Visual comparison of plots
- Parallelization

Thank you for your attention!