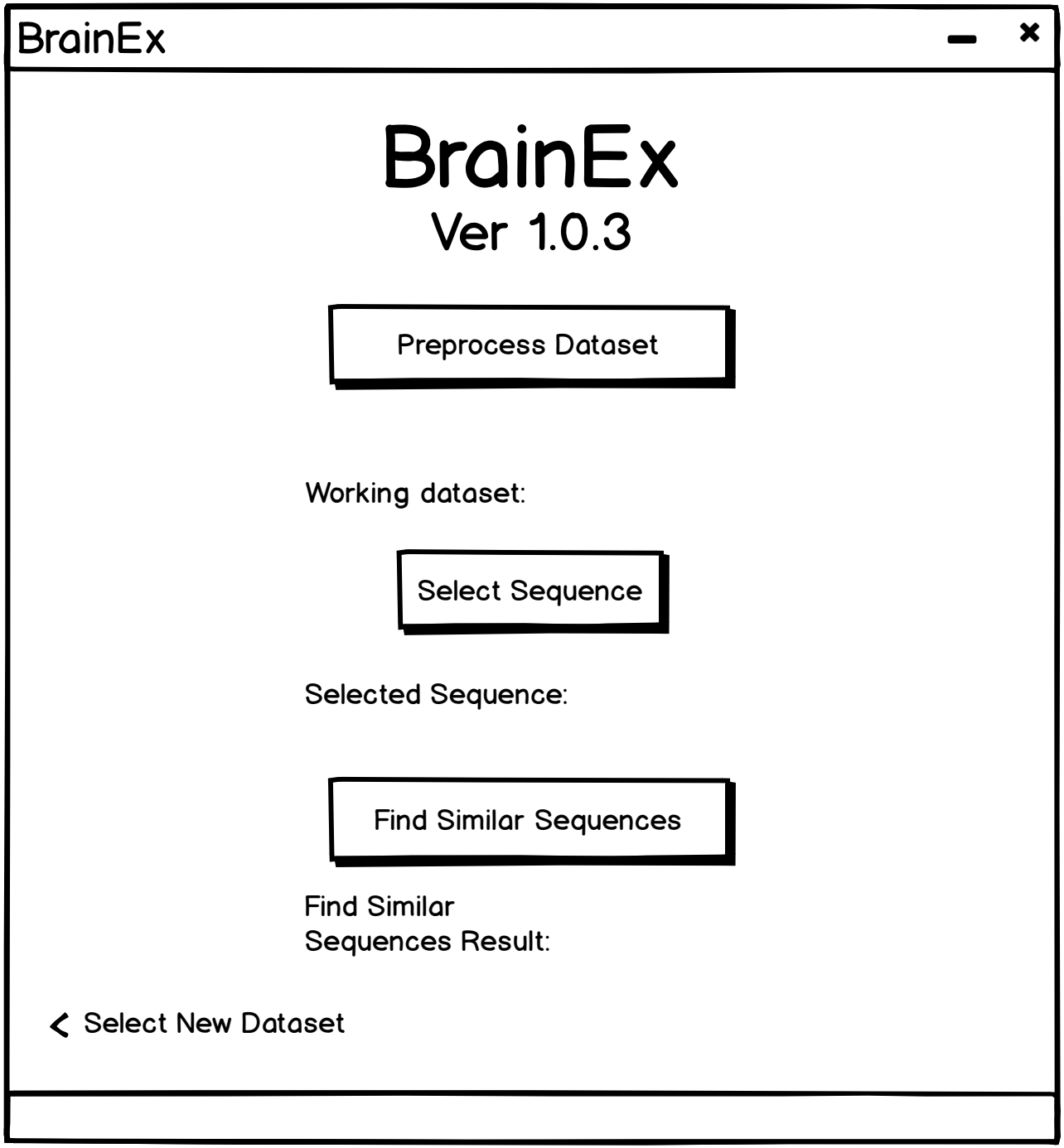


Clean "menu screen" so you can start at different points in the flow

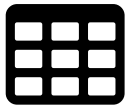
BrainEx | Menu

BrainEx Menu

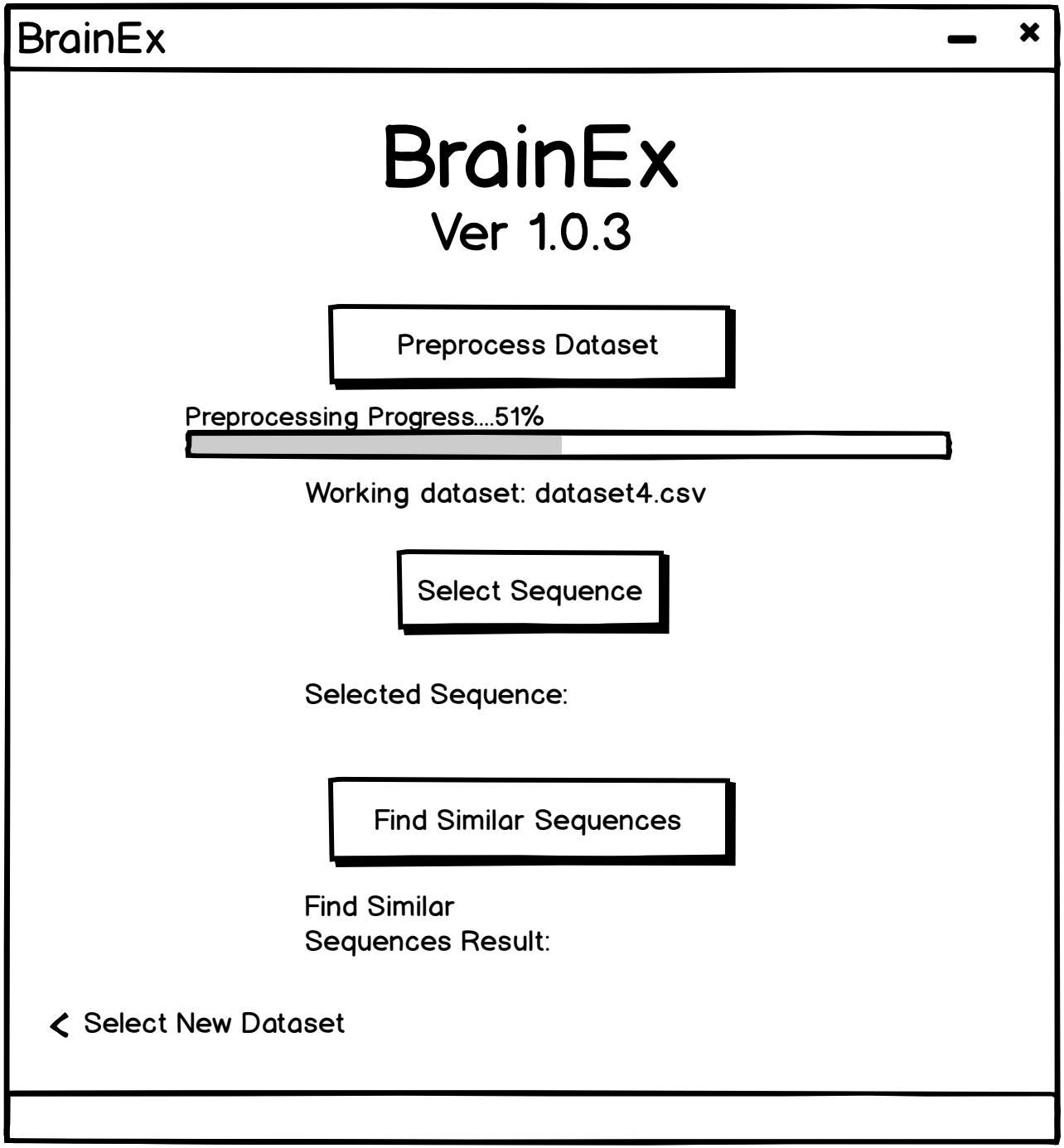
Query Finder

Dataset Explorer

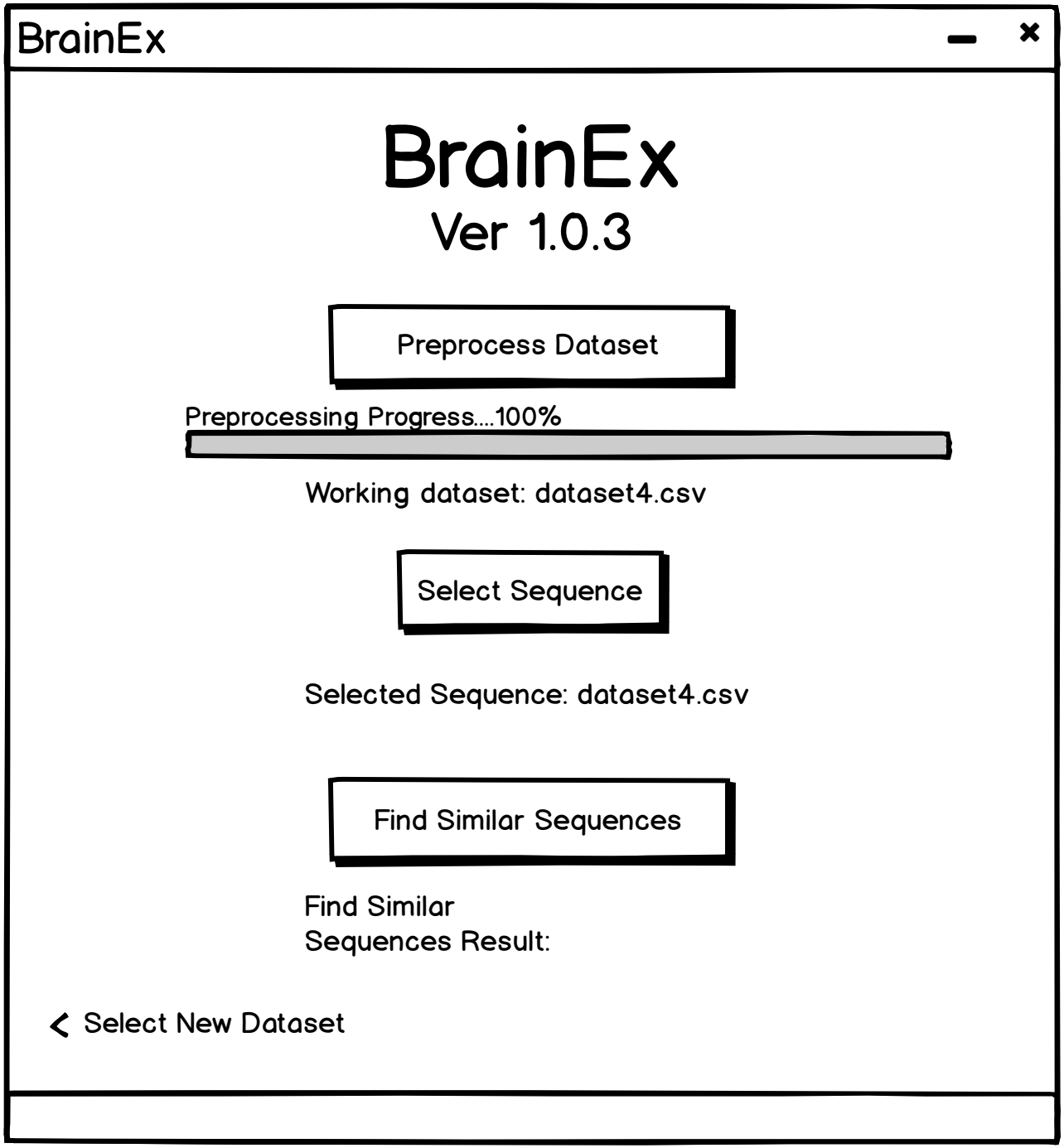
Cluster Explorer



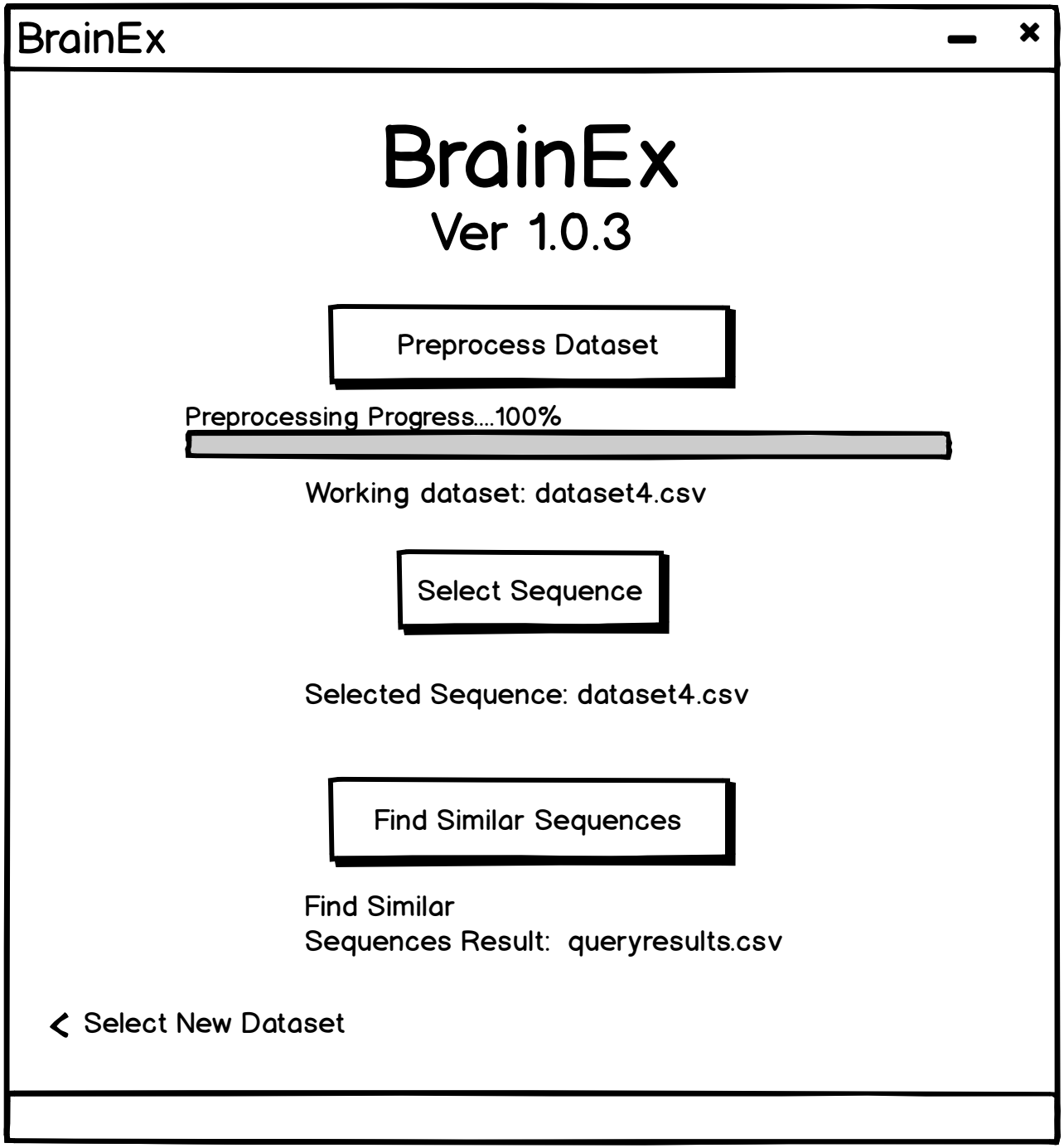
Load Another Dataset



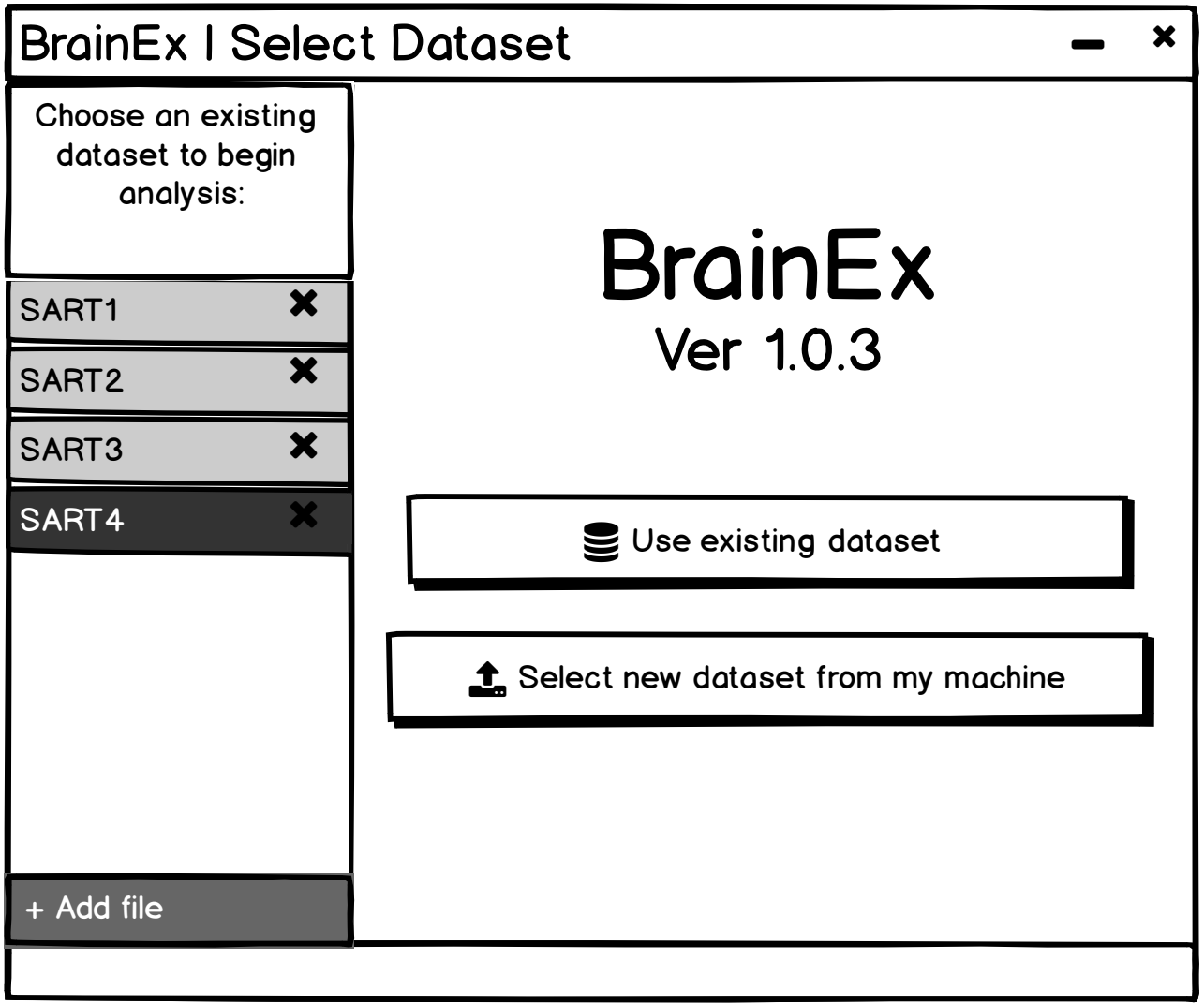
Clean "menu screen" so you can start at different points in the flow

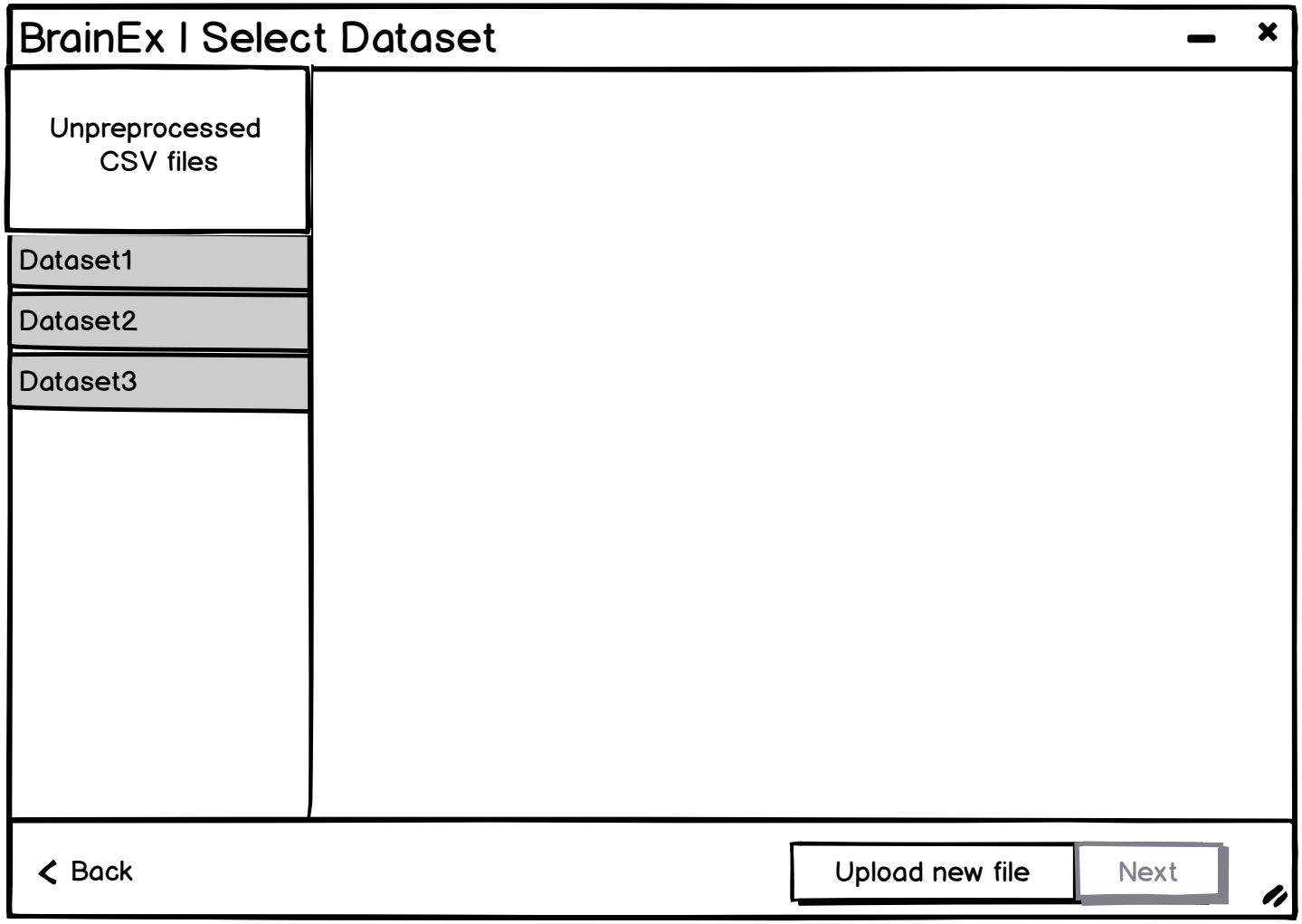


Clean "menu screen" so you can start at different points in the flow

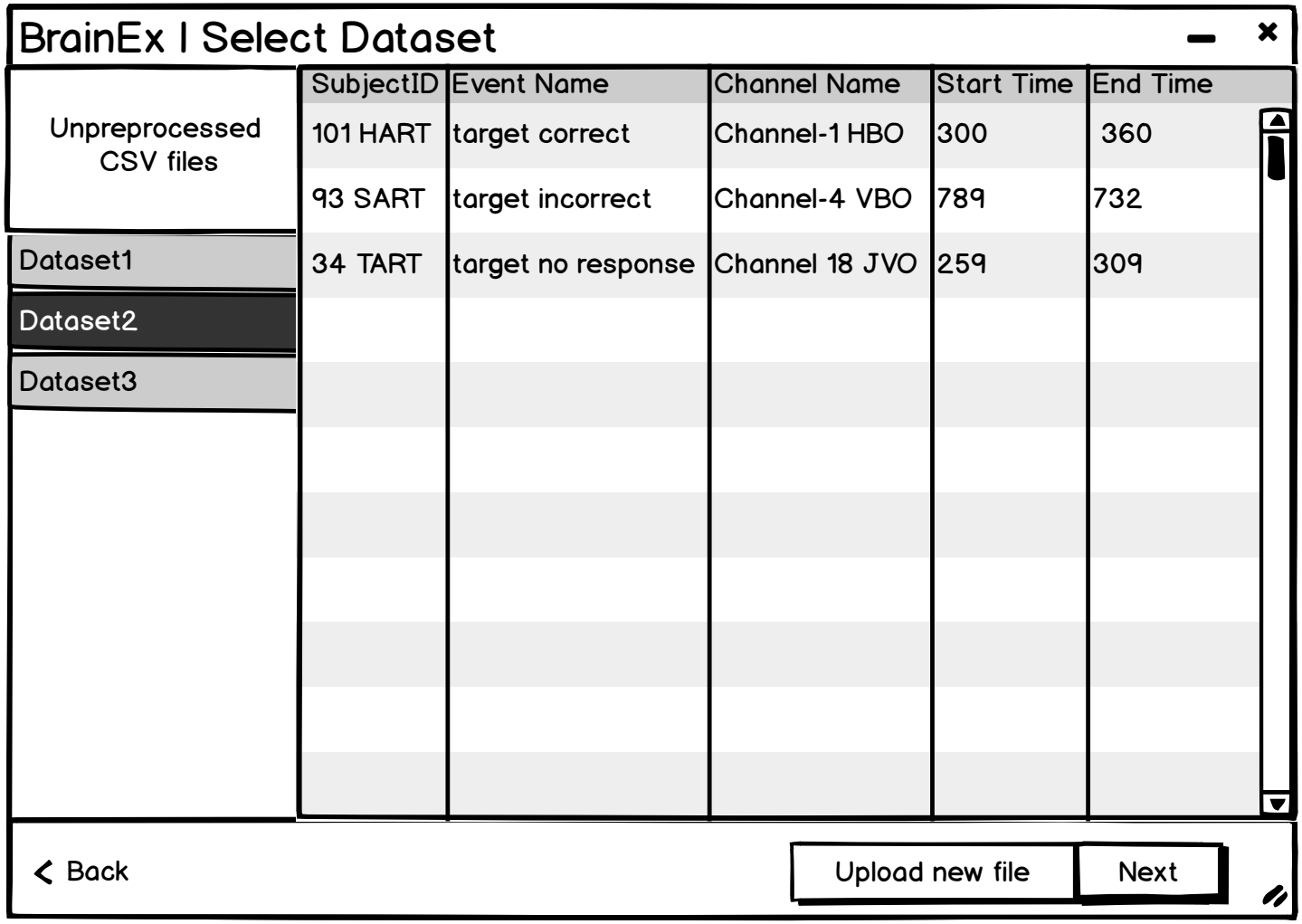


Clean "menu screen" so you can start at different points in the flow


BrainEx | Select Dataset
Choose an existing dataset to begin analysis:
SART1
SART2
SART3
SART4
+ Add file
BrainEx
Ver 1.0.3
Use existing dataset
Select new dataset from my machine

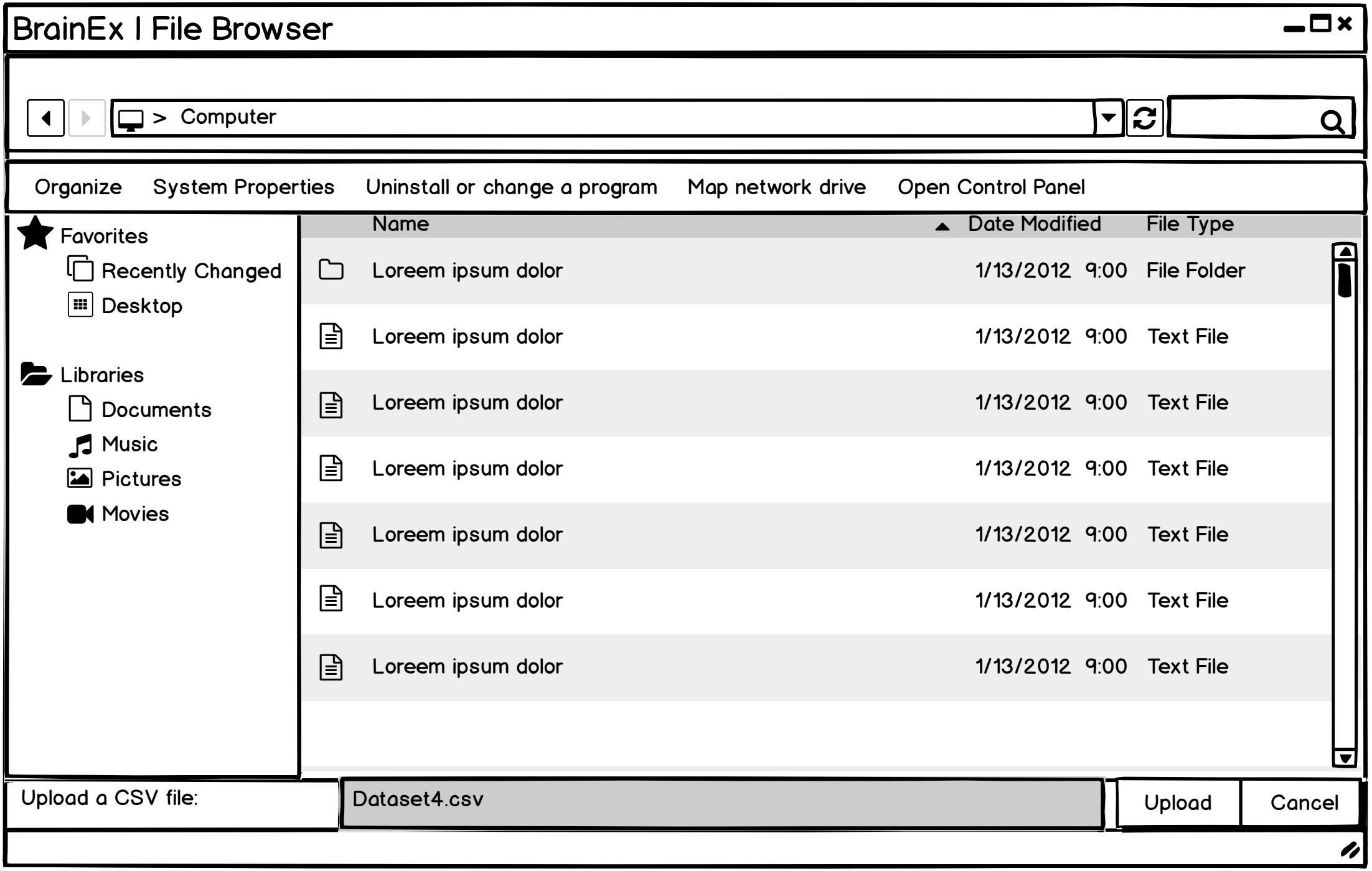


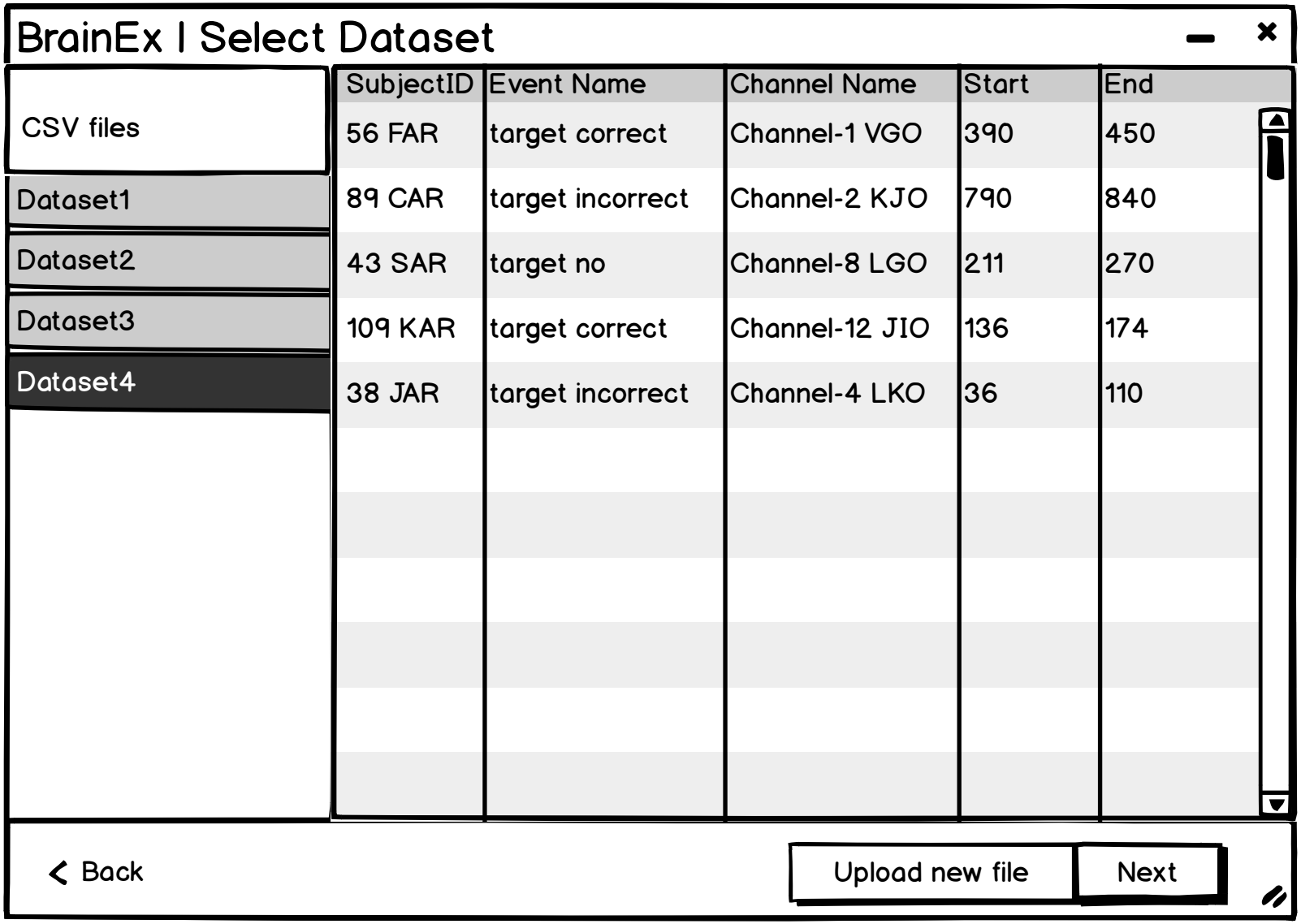
For simplicity, click on Dataset2 if you want to click on an existing dataset on the side bar

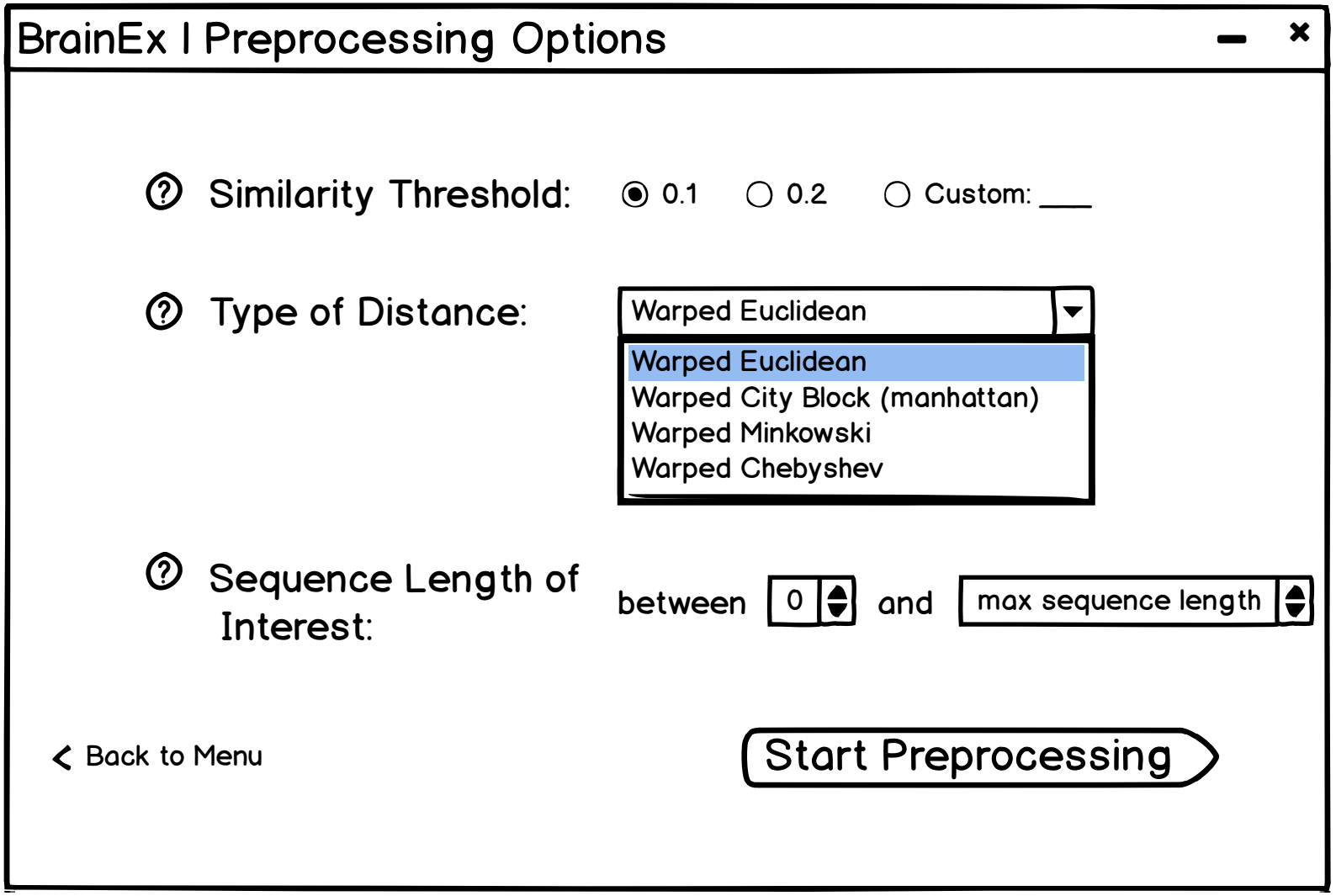


Question for Leo: Will there be a column for data shape here?

For simplicity, just click on SART2

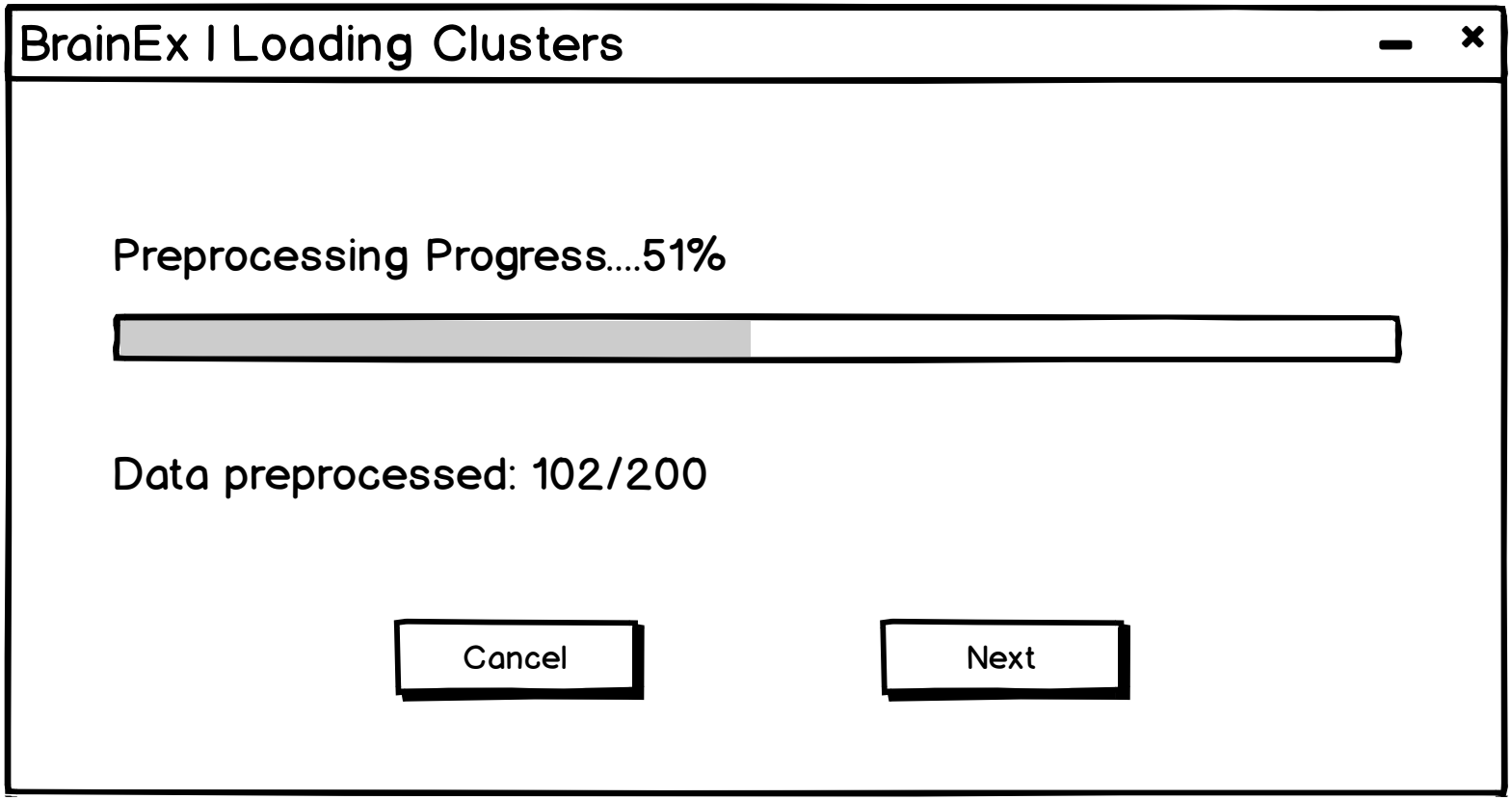

BrainEx | File Browser
> Computer
Organize
System Properties
Uninstall or change a program
Map network drive
Open Control Panel
Favorites
Recently Changed
Desktop
Libraries
Documents
Music
Pictures
Movies
Name
Date Modified
File Type
Loreem ipsum dolor
1/13/2012 9:00
File Folder
Loreem ipsum dolor
1/13/2012 9:00
Text File
Loreem ipsum dolor
1/13/2012 9:00
Text File
Loreem ipsum dolor
1/13/2012 9:00
Text File
Loreem ipsum dolor
1/13/2012 9:00
Text File
Loreem ipsum dolor
1/13/2012 9:00
Text File
Loreem ipsum dolor
1/13/2012 9:00
Text File
Upload a CSV file:
Dataset4.csv
Upload
Cancel


BrainEx I Select Dataset
CSV files
Dataset1
Dataset2
Dataset3
Dataset4
SubjectID
Event Name
Channel Name
Start
End
56 FAR
target correct
Channel-1 VGO
390
450
89 CAR
target incorrect
Channel-2 KJO
790
840
43 SAR
target no
Channel-8 LGO
211
270
109 KAR
target correct
Channel-12 JIO
136
174
38 JAR
target incorrect
Channel-4 LKO
36
110
Back
Upload new file
Next



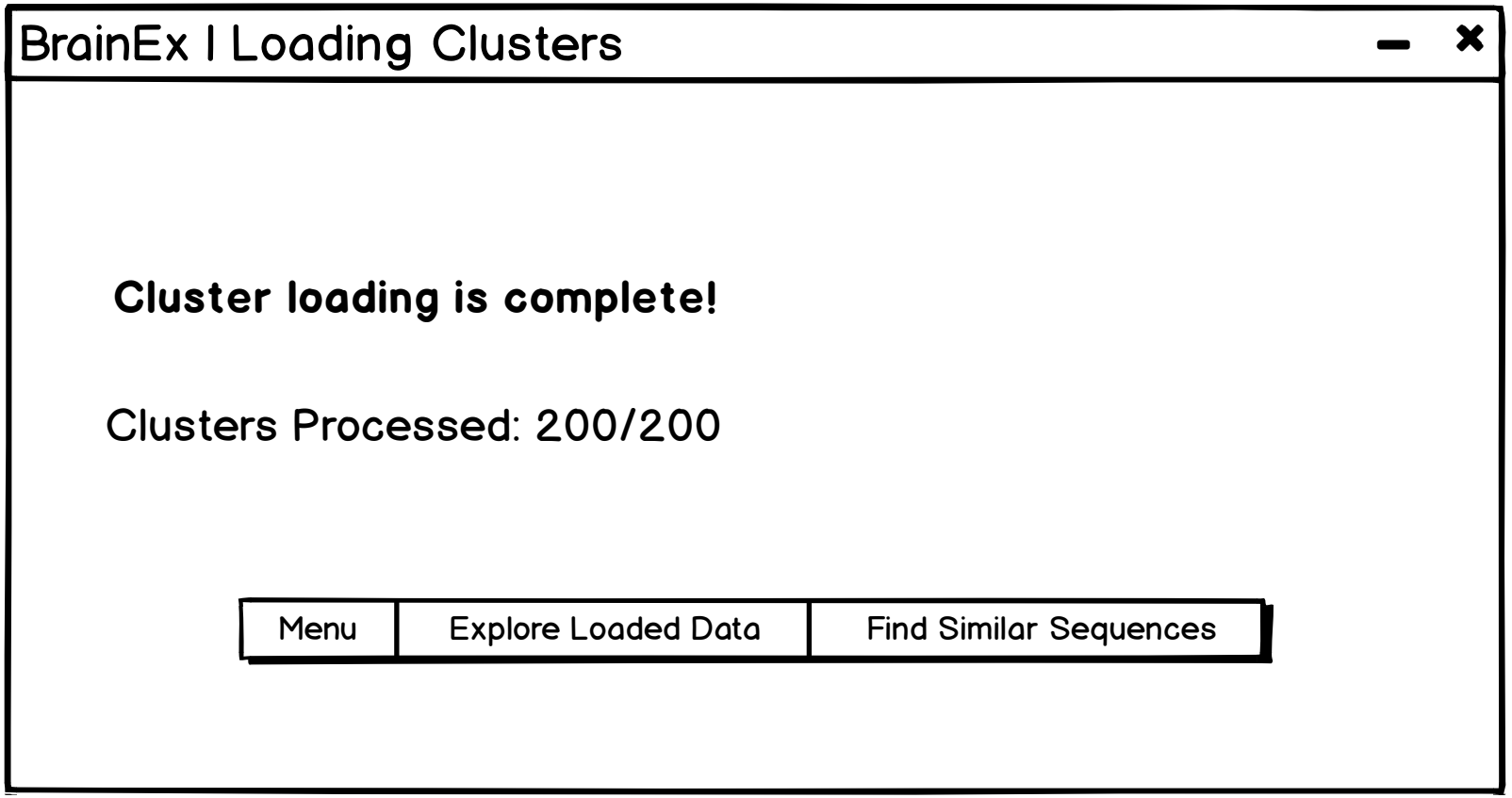
Question: what are the true names of the distances?

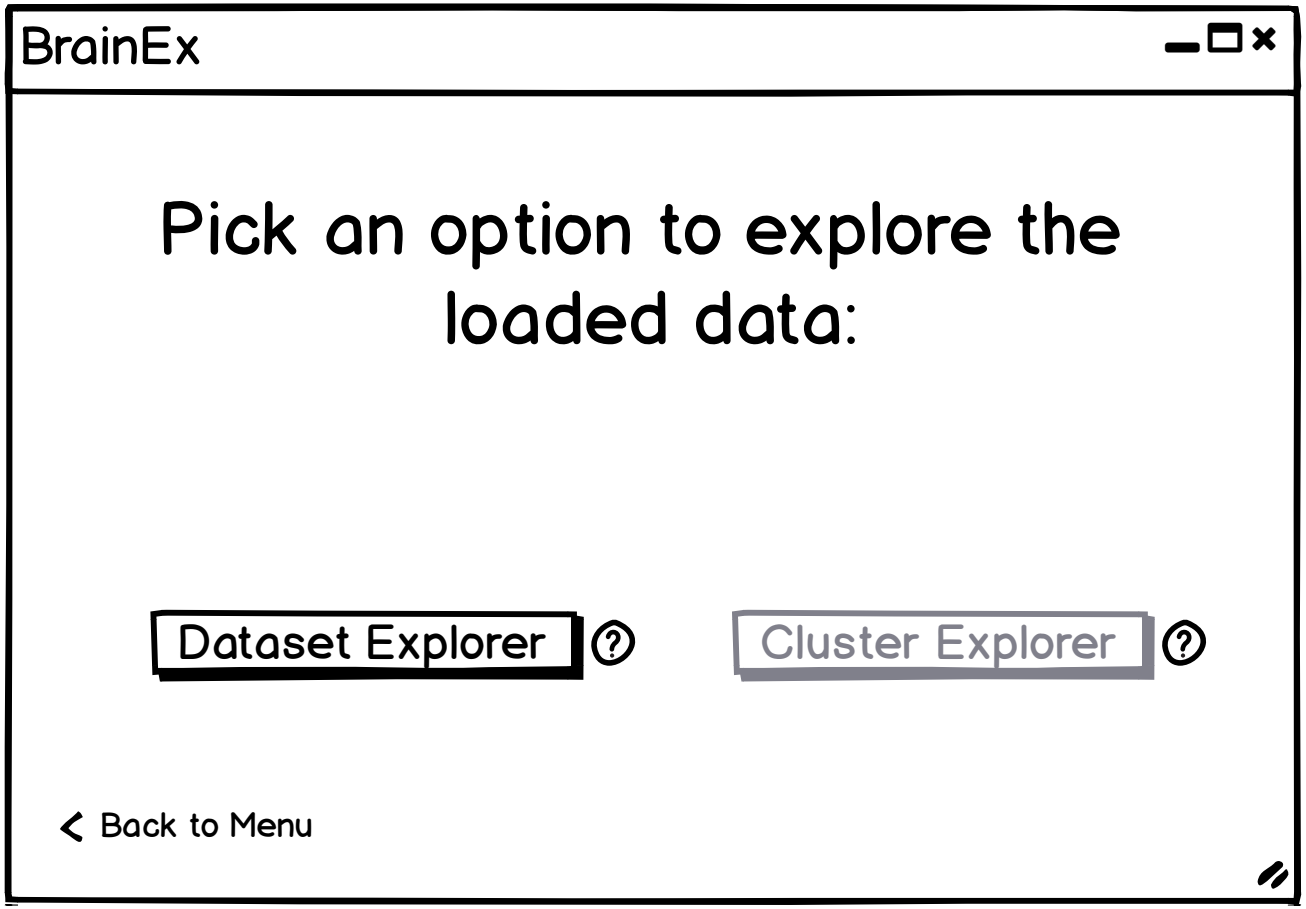
Length of interest means the number of seconds of how long the sequence lasted that the user wants to see

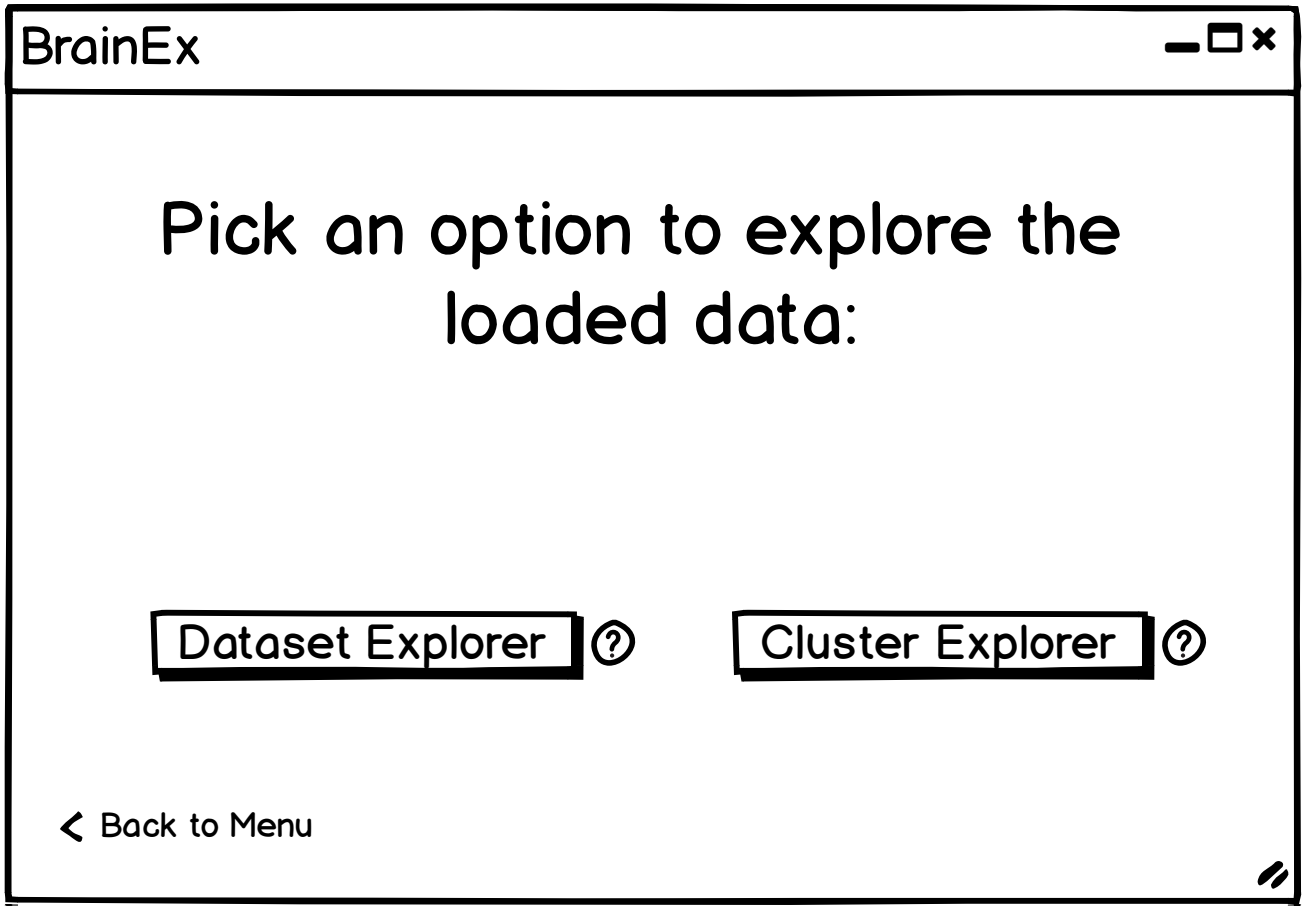


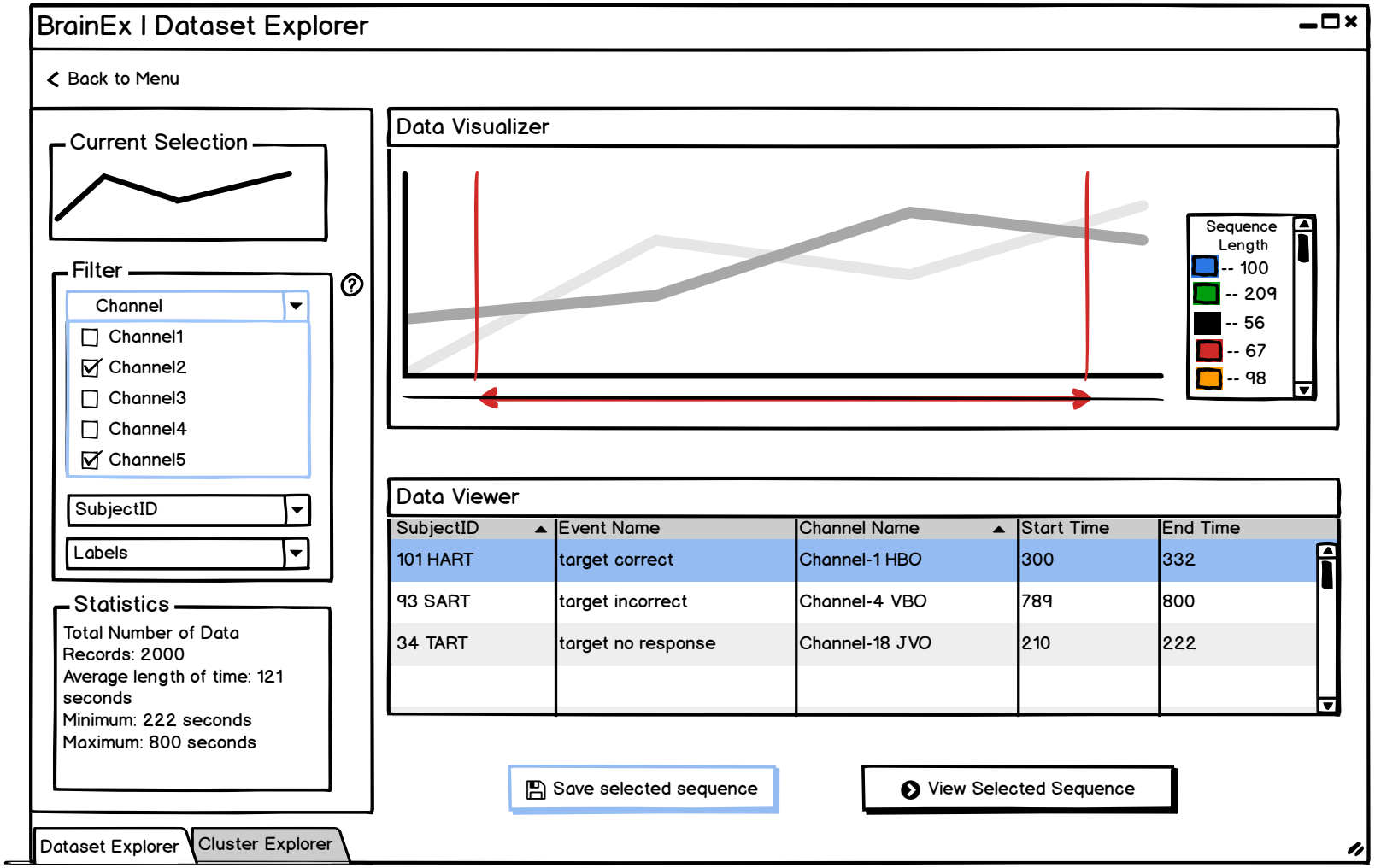
Notes:

This page is intended to automatically load and display the finished loading clusters page. However, you need to click next because of Balsamiq's (prototype website that we used for creating this mockup) limitations on transitions.


BrainEx | Loading Clusters
Cluster loading is complete!
Clusters Processed: 200/200
Menu
Explore Loaded Data
Find Similar Sequences

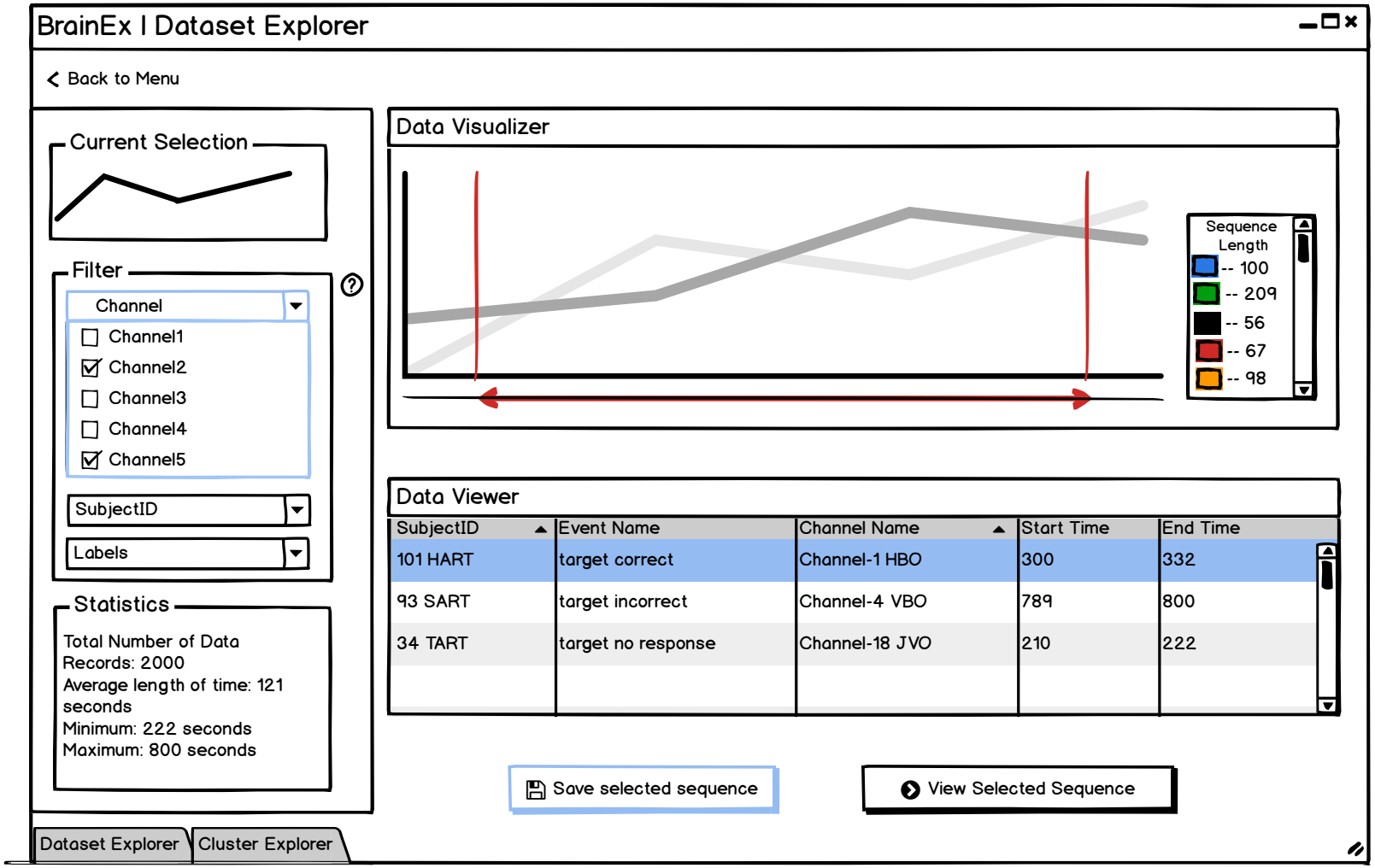

BrainEx
Pick an option to explore the loaded data:
Dataset Explorer
Cluster Explorer
Back to Menu


BrainEx
Pick an option to explore the loaded data:
Dataset Explorer
Cluster Explorer
Back to Menu



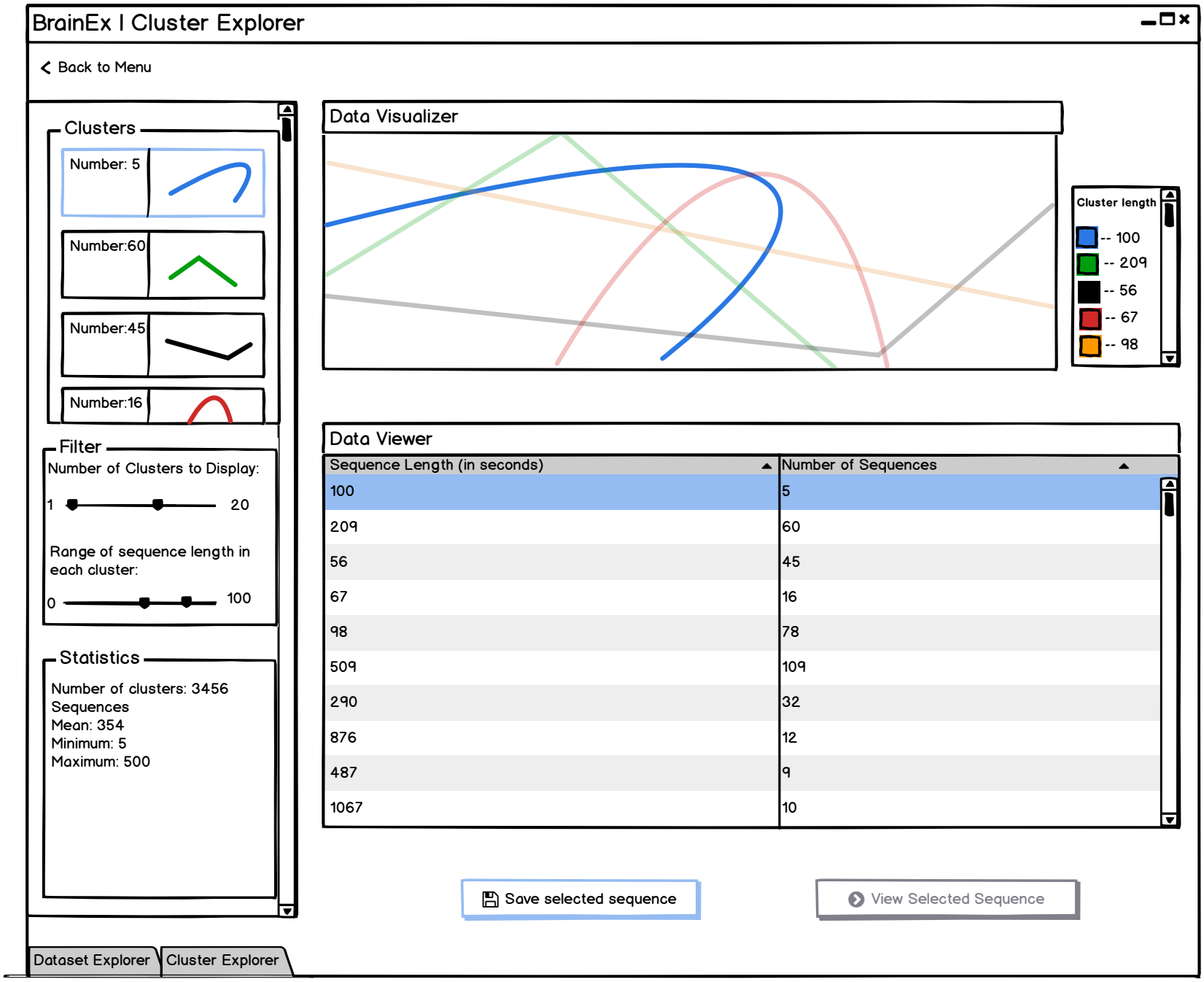
Notes:
Sort the data here in descending order of (end time - start time)
Do not show all data at once, let the user filter first and then show the data

Design Justification:
We wanted to make the screen starightforward, simple to look at and easy to navigate. Keeping these goals in mind, we put all the user parameter selections on one side (the left) and visualizations on the other (the right).
After performing necessary functions, the user can save the file and then proceed to the next step which is querying the sequence.
At the top, there is a naviagtion bar that allows the user to go to the main page as well as each of the explorer/query pages.
We chose a slider instead of brushing on chart region so it does not interfere with selecting an actual sequence from the chart.



Notes:
Sort the data here in descending order of (end time - start time)
Do not show all data at once, let the user filter first and then show the data

Design Justification:
We wanted to make the screen starightforward, simple to look at and easy to navigate. Keeping these goals in mind, we put all the user parameter selections on one side (the left) and visualizations on the other (the right).
After performing necessary functions, the user can save the file and then proceed to the next step which is querying the sequence.
At the top, there is a naviagtion bar that allows the user to go to the main page as well as each of the explorer/query pages.
We chose a slider instead of brushing on chart region so it does not interfere with selecting an actual sequence from the chart.



Notes:
Data Visualizer will display the user specified amount of cluster representatives
Data Table will have length (time) of sequences and number of sequences
There will never be a cluster with the same length so can just use length as unique cluster ID -> this is false
There can be multiple clusters with the same length as long as they are not similar in shape
All sequences in a cluster will have the same length
Selecting cluster and representaive will highlight it on the data visualizer graph

Filters:
Number of clusters (top 15 or 20)
Range of length (slider)

Statistics:
Show the cluster with the most/least sequences
Show the top 3/least 3 with the greatest/least length of sequences

Question:
How do we decide how many representatives to display to the user (maybe ask to input a number from 1-10) and on what basis (show representatives of the top 10 clusters with most data points)?
If we have 30,000 clusters, how do we filter them down to approx 20? Should we ask for user input or another screen?
How to identify each cluster? Should we assign an id to each?

Design Justification:
To keep the UI simple, this cluster explorer screen as well as the rest of the explorer/query finder screens have the same layout with user inputs on the left and visualizations on the right
The view data shapes area displays the data shape of the representative of each cluster which would make it simpler for the user to view and easier to pick which area to investigate more
The number of sequences in each cluster is displayed as the label for the view data shapes area to make it easier for users to view that information. The filters are meant to allow the user to narrow down the number of clusters to view at a time

BrainEx | Cluster Explorer

< Back to Menu

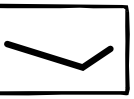
Current Selection

Clusters

Number: 5

Number: 60

Number: 45



Number: 16

Filter

Number of Sequences from this Cluster to Display:

1 — 20

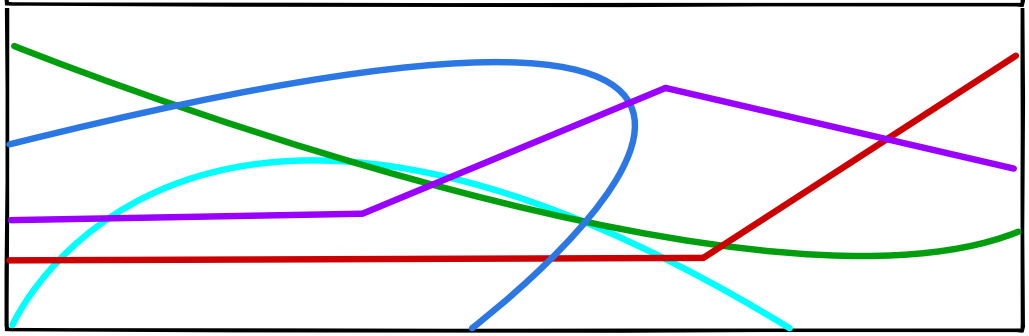
Range of sequence length:

0 — 500

Statistics

Number of clusters: 3456
Sequences
Mean: 354
Minimum: 5
Maximum: 500

Data Visualizer



Legend

-- 100
-- 100
-- 100
-- 100
-- 100

Data Viewer

SubjectID	Event Name	Channel Name	Start Time	End Time	Sequence Length (in seconds)
101 HART	target correct	Channel-1 HBO	300	400	100
93 SART	target incorrect	Channel-4 VBO	789	889	100
34 TART	target no response	Channel-18 JVO	210	310	100
101 HART	target correct	Channel-1 HBO	350	450	100
93 SART	target incorrect	Channel-4 VBO	675	775	100

Back | Save selected sequence | View Selected Sequence

Dataset Explorer | Cluster Explorer

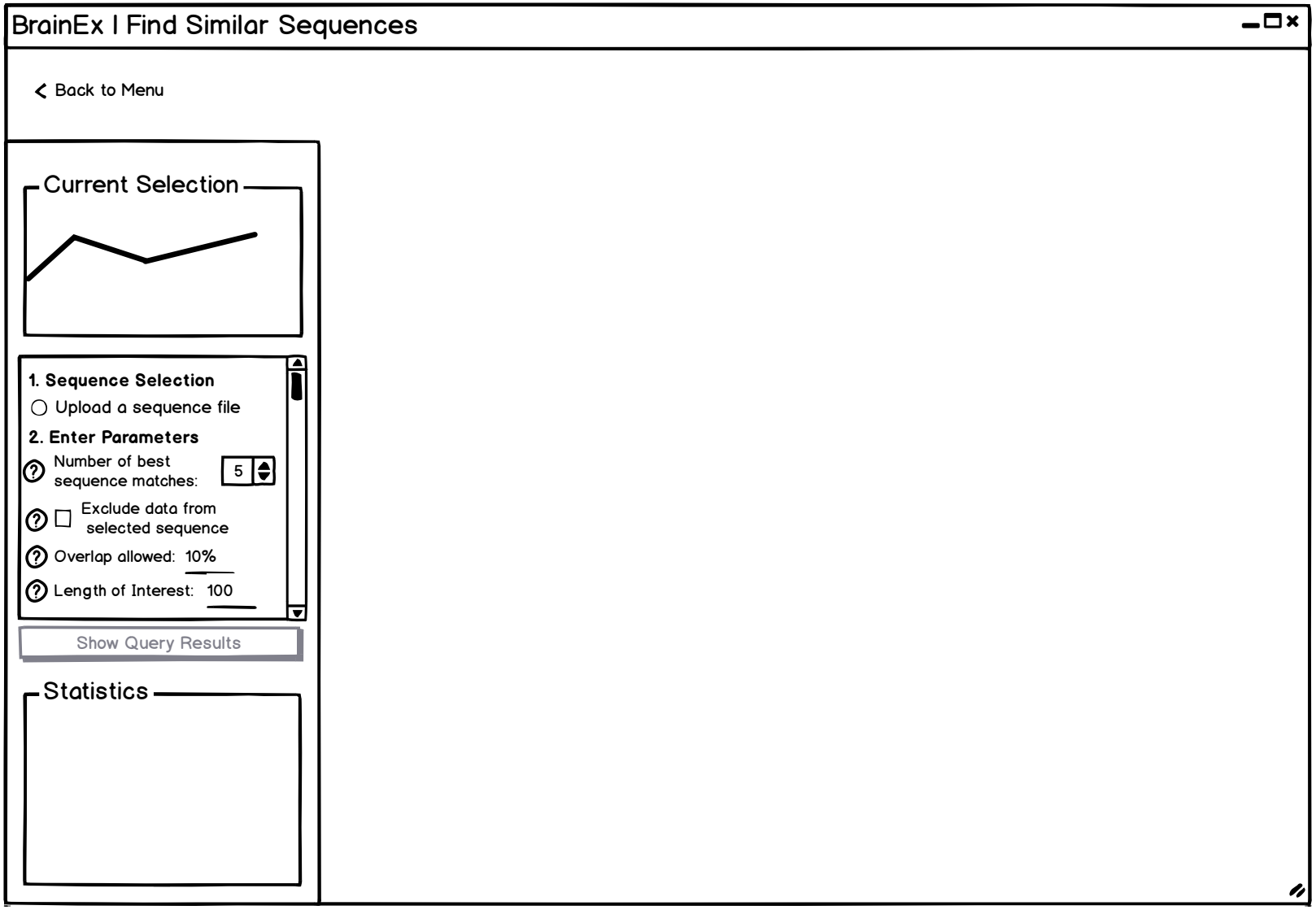
Notes:
Data Visualizer will display the sequences in the cluster selected
Data Table will have data information for each sequence in the cluster selected

Design Justification:
In order to make the cluster explorer more understandable and easy to use, we have a graph that displays the current user selection at the top of the screen.
The user can filter some options and select the number of sequences to view in the cluster as well as the range of the sequence length. This part is to allow the user to narrow down the number of sequences to view at a time

Question: If each sequence in one cluster has the same length, how do we identify?

Is sequence length end-start time?

Doesn't the graph need a slider?



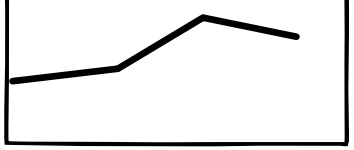
Notes:
Show query result is disabled on this page because parameters have not been entered.
Gray out selection if selection not made in cluster explorer/dataset explorer.

Design Justification:
The input required for query is setup as a menu with a scrollbar because we are trying to make sure users put in the information in order, but user testing showed that accordion menus are ineffective.

BrainEx | Find Similar Sequences

< Back to Menu

Current Selection



1. Sequence Selection

- ○ Upload a sequence file
- ○ Use selection from dataset explorer

2. Enter Parameters

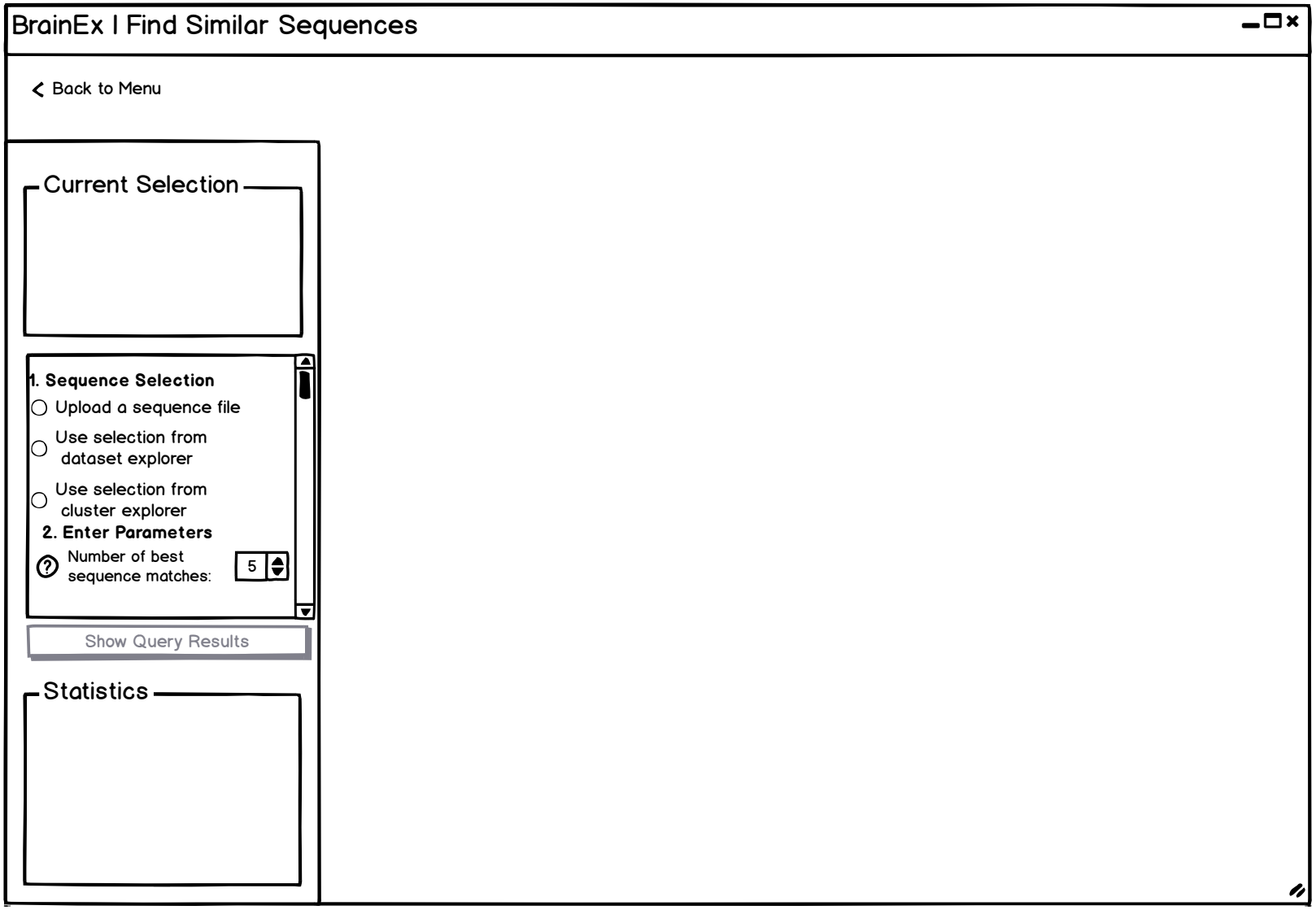
- (?) Number of best sequence matches: 5
- (?) ☐ Exclude data from selected sequence
- (?) Overlap allowed: 10%

Show Query Results

Statistics

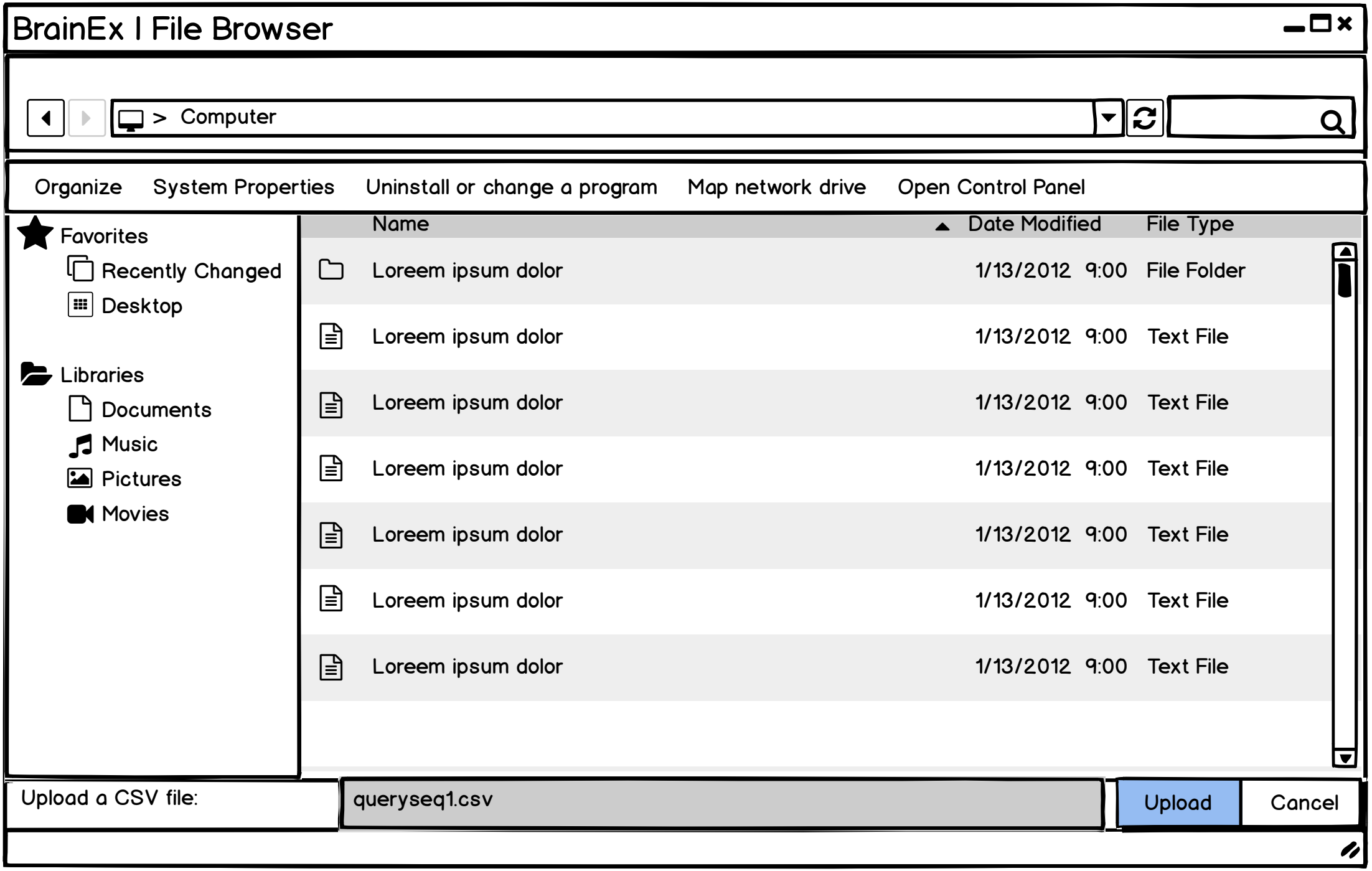
Notes:
Show query result is disabled on this page because parameters have not been entered.
Gray out selection if selection not made in cluster explorer/dataset explorer.

Design Justification:
The input required for query is setup as a menu with a scrollbar because we are trying to make sure users put in the information in order, but user testing showed that accordion menus are ineffective. The length of interest field is hidden on this page for space reasons.



Notes:
Show query result is disabled on this page because parameters have not been entered.
Gray out selection if selection not made in cluster explorer/dataset explorer.

Design Justification:
The input required for query is setup as a menu with a scrollbar because we are trying to make sure users put in the information in order, but user testing showed that accordion menus are ineffective. The exclude queried sequence, overlap, and length of interest fields are hidden on this page for space reasons.


BrainEx | File Browser
> Computer
Organize
System Properties
Uninstall or change a program
Map network drive
Open Control Panel
Favorites
Recently Changed
Desktop
Libraries
Documents
Music
Pictures
Movies
Name
Date Modified
File Type
Loreem ipsum dolor
1/13/2012 9:00
File Folder
Text File
Upload a CSV file:
queryseq1.csv
Upload
Cancel

BrainEx | Find Similar Sequences

< Back to Menu

Current Selection

1. Sequence Selection

- (•) Upload a sequence file
- ( ) Use selection from dataset explorer
- ( ) Use selection from cluster explorer

2. Enter Parameters

(?) Number of best sequence matches: 5

Show Query Results

Statistics

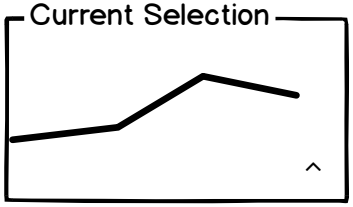
Notes:
Show query result is disabled on this page because parameters have not been entered.
Gray out selection if selection not made in cluster explorer/dataset explorer.

Design Justification:
The input required for query is setup as a menu with a scrollbar because we are trying to make sure users put in the information in order, but user testing showed that accordion menus are ineffective. The exclude queried sequence, overlap, and length of interest fields are hidden on this page for space reasons.

BrainEx | Find Similar Sequences

< Back to Menu

Current Selection



1. Sequence Selection

- (•) Upload a sequence file
- ( ) Use selection from dataset explorer
- ( ) Use selection from cluster explorer

2. Enter Parameters

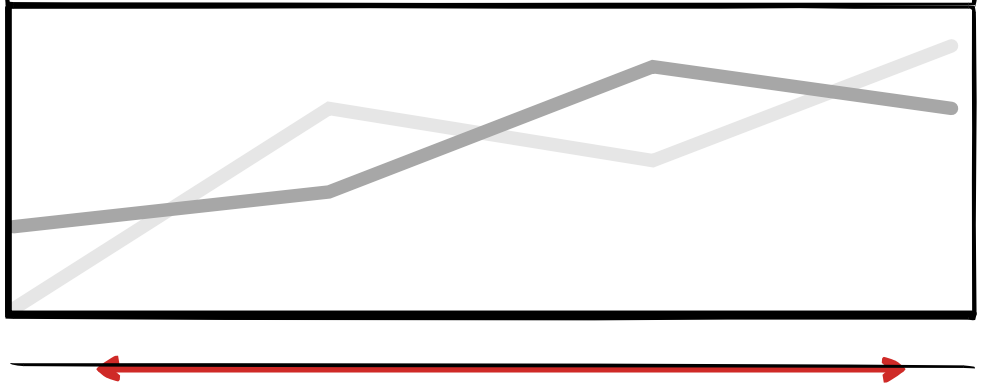
Number of best sequence matches: 5

Show Query Results

Statistics

Similarity
Mean: 67%
Standard Deviation: 3.2
Variance: 10.24

Data Visualizer



Similarity

Most Similar

Least Similar

Data Viewer

SubjectI	Best	Overla	Similarit	Event Name	Channel	Start	End
101 HART	5	20%	65%	target correct	Channel-1 HBO	300	9000
93 SART	6	40%	75%	target incorrect	Channel-4 VBO	789	45756
34 TART	4	50%	85%	target no	Channel-18 JVO	210	45900
101 HART	2	36%	95%	target correct	Channel-1 HBO	300	9000
93 SART	3	48%	55%	target incorrect	Channel-4 VBO	789	45756

Save sequence results

Notes:
Data Table: Best matches, overlap, similarity (95% similar), subject ID, channel, start, end
Visualization: data points in each explorer are displayed in graph (same as graph in cluster explorer copy)

Design Justification:
The input required for query is setup as a menu with a scrollbar because we are trying to make sure users put in the information in order, but user testing showed that accordion menus are ineffective. The exclude queried sequence, overlap, and length of interest fields are hidden on this page for space reasons.

Question:
Takes time to extract things from results and require more functionality on backend. What if i want to see top 5, middle 3, bottom 3? (talk this over with Leo about feasibility of our current idea, but Rodica brought up a good point on being able to select specific sequences that are not adjacent in the table/ranking)