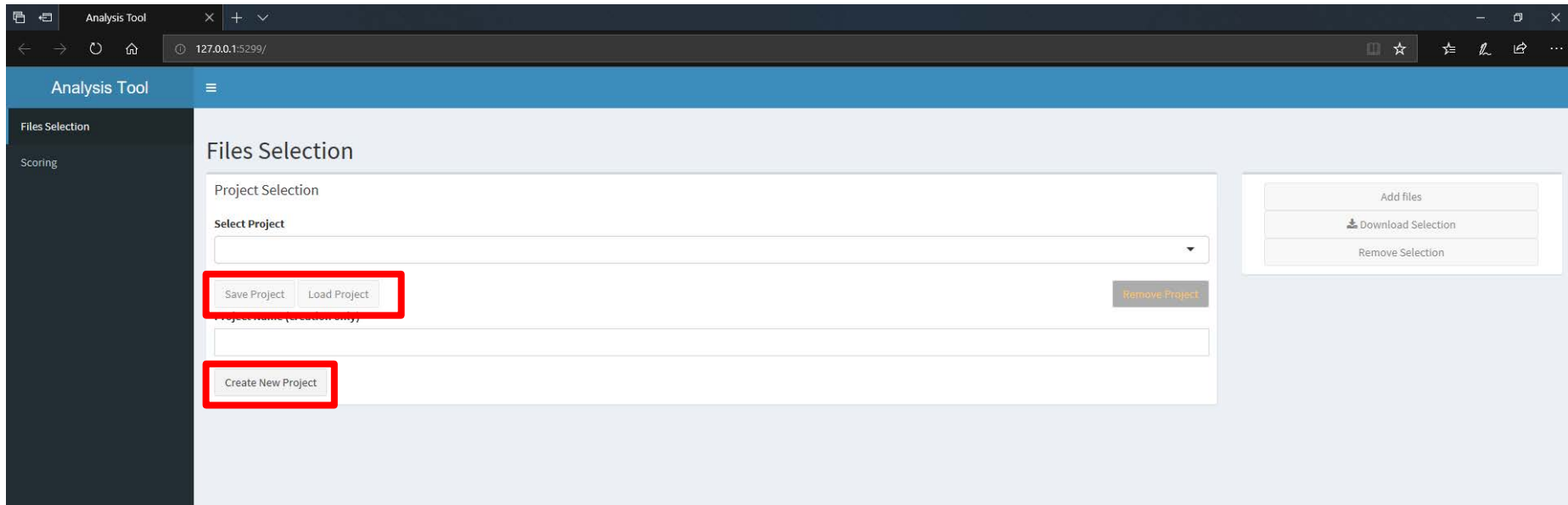


Analysis Tool

Manual



Files stored in projects:

- Local folders containing modified versions of the selected files
- **Creating a project:** Create an empty local folder
- **Load a project:** Load the files and the information of a project formerly created

SAVE THE PROJECT AFTER ADDING ALL THE FILES

Files Selection

Project Selection

Select Project

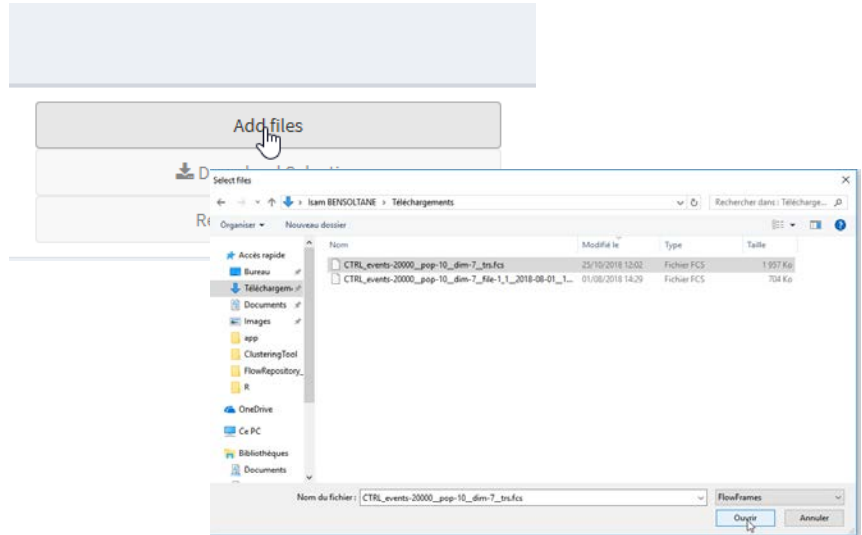
Save Project

Load Project

Project Name (creation only)

Create New Project

Creates a new project
named test



Add local files to the project:

- ENRICHED FCS FILE
- REQUIRED KEYWORDS

Use Clustering Tool or Keywords Register

CTRL_events-20000__pop-10__dim-7__trs_0

Previous Analyses Populations

Population Column
cluster

Labels Column (Mapping File)

Population 1 - Label:
1

Population 2 - Label:
2

Population 3 - Label:
3

Population 4 - Label:
4

Select
Mapping File

Population Column

cluster

PARAM_4

PARAM_5

PARAM_6

PARAM_7

time

cluster

cluster_clara.10

cluster_clara.11

Select the column containing the populations labels



Population 1 - Label:
1

Population 2 - Label:
2

Population 3 - Label:
3

Population 4 - Label:
4

Rename each population

Mapping File

	A	B
1	popID,popNAME	
2	1,pop1	
3	2,pop2	
4	3,pop3	
5	4,pop4	
6	5,pop5	
7	6,pop6	
8	7,pop7	
9	8,pop8	
10	9,pop9	
11	10,pop10	

Labels Column (Mapping File)
popNAME

OR

Or load a mapping file (.csv)
eg: scaffold node landmarks

Files Selection

Project Selection

Select Project

test

Save Project

Load Project

Remove Project

Project Name (creation only)

test

Create New Project

Add files

Download Selection

Remove Selection

CTRL_events-20000__pop-10__dim-7__trs_0

☐ Select

Mapping File

Previous Analyses

Populations

Population Column

Population 1 - Label:

Selected Files:

- Download the selected files stored in each project
- Remove all the selected files **and their information** from the project

Files Selection

Project Selection

Select Project

test

Save Project

Load Project

Remove Project

Project Name (creation only)

test

Create New Project

Add files

Download Selection

Remove Selection

CTRL_events-20000__pop-10__dim-7__trs_0

Previous Analyses

Populations

Population Column

Population 1 - Label:

☐ Select

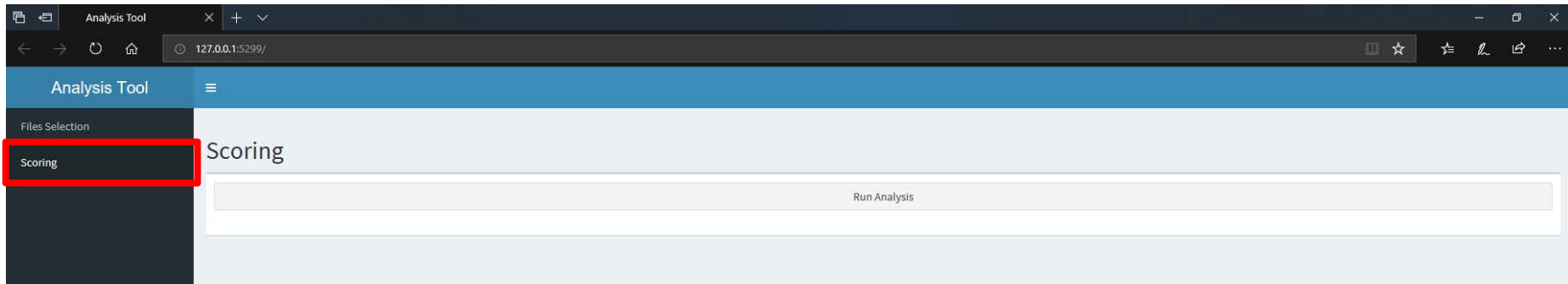
Mapping File

Save Project:

- Save all the files and their information in the folder associated with the project



Scoring Tab



Run Analysis Button:

Compute the purity, precision, recall, FG matrices and clusters information for each registered set of parameters, for each algorithm

Visualization Panel : Annotations Visualization

Annotations Visualization

F score details

Summarize table

Advanced Options

Select file

CTRL_events-20000__pop-10__dim-7__trs_1__2_3

Plot

Select Algorithm

clara

Select Run

clara: k=50, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,

Select file

CTRL_events-20000__pop-10__dim-7__trs_1__2_3

CTRL_events-20000__pop-10__dim-7__trs_1__2_3

Select a file (only one in this case)

Select an algorithm among those used on the chosen file

Select Algorithm

clara

clara

flowSOM

kmeans

Select Run

kmeans: centers=100, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

kmeans: centers=110, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

kmeans: centers=120, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

kmeans: centers=130, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

kmeans: centers=140, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

kmeans: centers=150, iterations=100, nstart=6, markers=1,2,3,4,5,6,7,,

Select a set of parameters of the chose selected algorithm

Visualization Panel : Annotations Visualization

Marker 1
PARAM_3

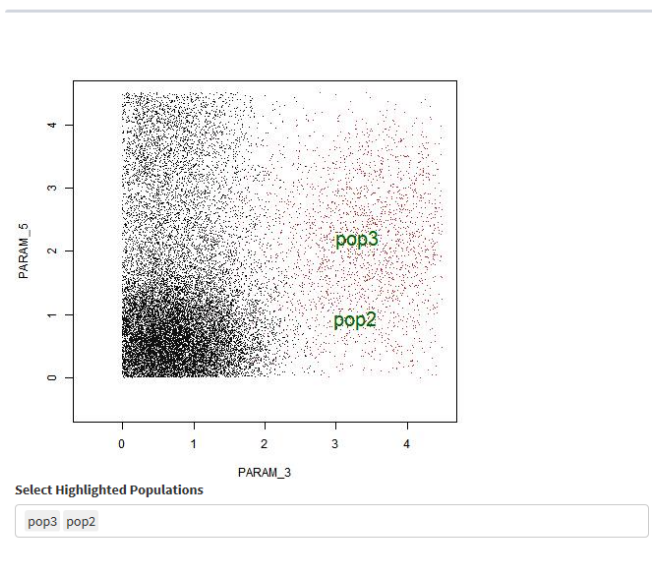
Marker 2
PARAM_5

Select file
CTRL_events-20000__pop-10__dim-7__trs_1_

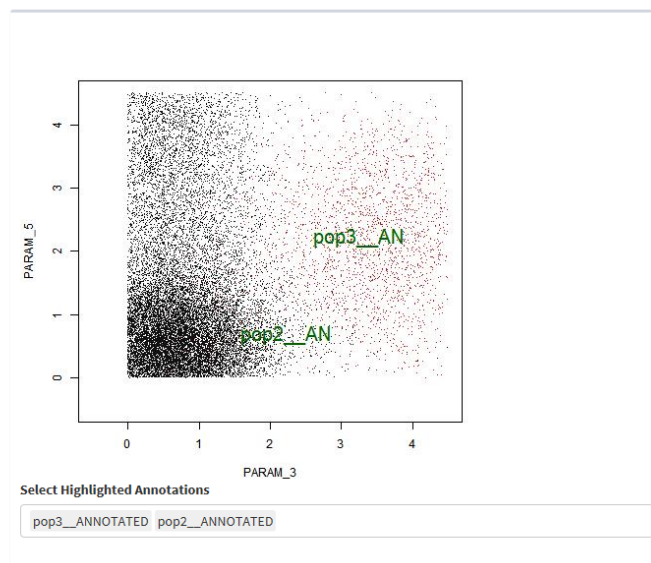
Plot

Select the markers to visualize

Plot



Selected Populations :
Markers expression



Selected Annotations :
Markers expression



Visualization Panel : F-score variations

Annotations Visualization

F score details

Summarize table

Advanced Options

Select file

CTRL_events-20000__pop-10__dim-7__file-1_1__2018-08-01__14_29_03_0_0__1_2

Select Algorithm

clara

Plot

Select Parameter

k

Select Fixed Values

Select Run

clara: k=50, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,

Select file

CTRL_events-20000__pop-10__dim-7__trs_1__2_3

CTRL_events-20000__pop-10__dim-7__trs_1__2_3

Select a file (only one in this case)

Select an algorithm among those used
on the chosen file

Select Algorithm

clara

clara

flowSOM

kmeans

Visualization Panel : F-score variations

Select Parameter

k
 samples
 sampsize
 trace
 MARKERS

Select the variable parameter



Plot

Select Fixed Values

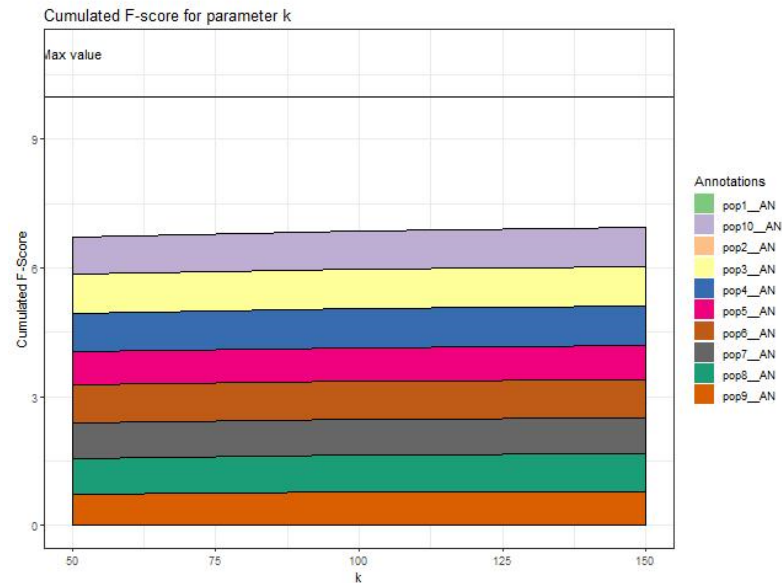
samples=5, sampsize=30, trace=0, MARKERS=1234567,

samples=5, sampsize=80, trace=0, MARKERS=1234567,

Select the values of the other parameters

Evolution of the F-score of all populations:

- Depending on the values of the **variable parameter**
- Each population is identified by a color
- The maximum value of the cumulated F-score is the number of populations



Visualization Panel : F-score variations

Select Run

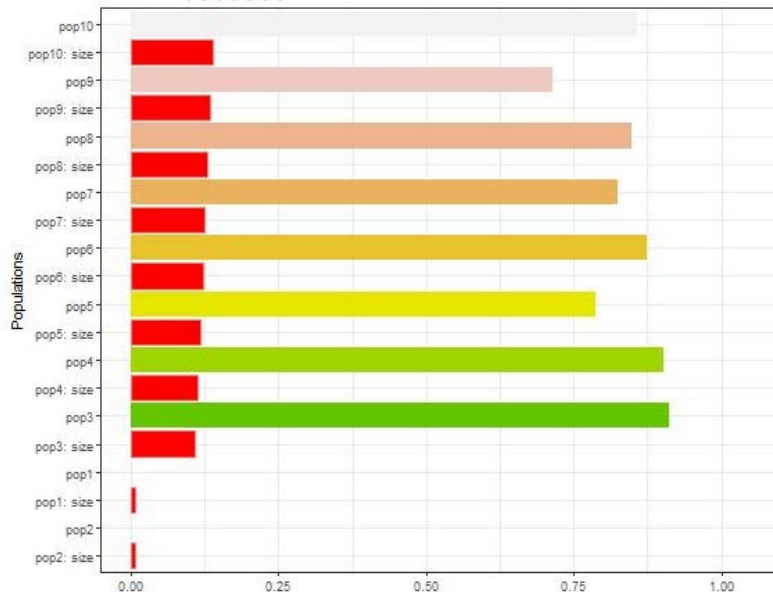
clara: k=50, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,|
 clara: k=50, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,
 clara: k=100, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,
 clara: k=150, samples=5, sampsize=80, trace=0, markers=1,2,3,4,5,6,7,,

Select a set of parameters



Plot

RUN - clara: k=50, samples=5, sampsize=80, trace=0,
 markers=1,2,3,4,5,6,7,



- F-Score of each population for the selected set of parameters
- The relative size gives the ratio $\frac{\text{size of population}}{\text{number of events in the file}}$



Scoring Tab

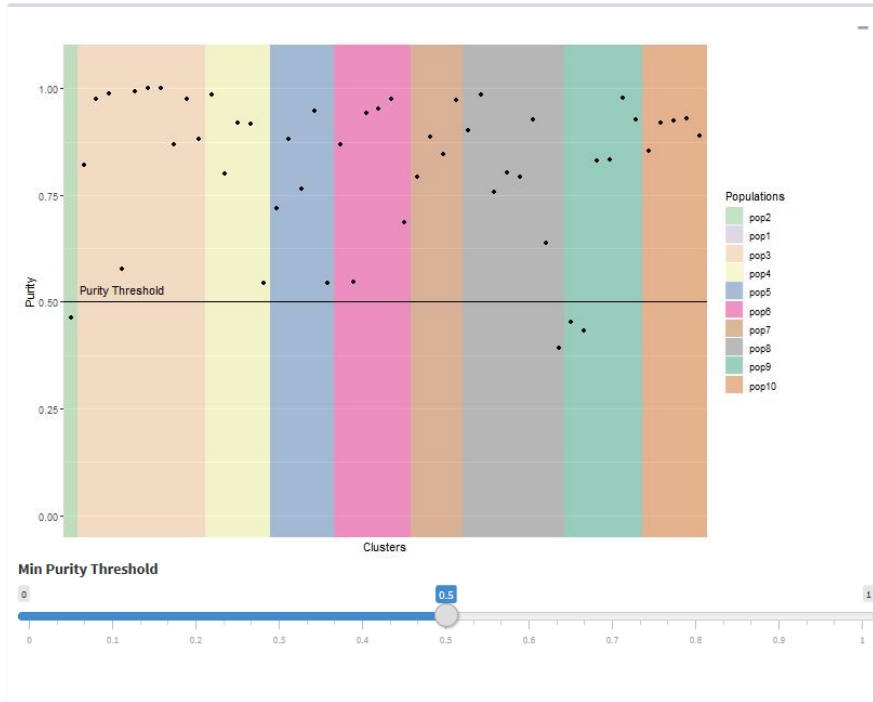
Visualization Panel : Summary table

Annotations Visualization											
F score details											
Summarize table											
Advanced Options											
Plot											
FILE	Markers: 1,2,3,4,5,6,7, Parameters: k-50,samples-5,sampsize- 80,trace-0,	Markers: 1,2,3,4,5,6,7, Parameters: k-100,samples-5,sampsize- 80,trace-0,	Markers: 1,2,3,4,5,6,7, Parameters: k-150,samples-5,sampsize- 80,trace-0,	Markers: 1,2,3,4,5,6,7, Parameters: xgrid- 20,ygrid-20,	Markers: 1,2,3,4,5,6,7, Parameters: xgrid- 20,ygrid-30,	Markers: 1,2,3,4,5,6,7, Parameters: xgrid- 20,ygrid-40,	Markers: 1,2,3,4,5,6,7, Parameters: centers- 100,iterations- 100,nstart-6,	Markers: 1,2,3,4,5,6,7, Parameters: centers- 110,iterations- 100,nstart-6,	Markers: 1,2,3,4,5,6,7, Parameters: centers- 120,iterations- 100,nstart-6,	Markers: 1,2,3,4,5,6,7, Parameters: centers- 130,iterations- 100,nstart-6,	Markers: 1,2,3,4,5,6,7, Parameters: centers- 140,iterations- 100,nstart-6,
CTRL_events- 20000__pop- 10__dim-7__trs_1__2_3	6.718	6.858	7.413	8.587	8.737	8.737	8.687	8.779	8.78	8.762	8.777

Summary Table:

Sum of the F-Score of all populations for every file, every algorithm with every set of parameters

Visualization Panel : Advanced Options



BELOW THRESHOLD	precision	Relative Size (population)	Relative Size (file)	Population
Cluster 1	0.4528	51.925 %	6.945 %	pop9
Cluster 7	0.4327	10.28 %	1.375 %	pop9
Cluster 43	0.4631	79.831 %	0.475 %	pop2
Cluster 46	0.3928	4.32 %	0.56 %	pop8

ABOVE THRESHOLD	precision	Relative Size (population)	Relative Size (file)	Population
Cluster 22	0.82	22.42 %	2.445 %	pop3
Cluster 28	0.9756	15.038 %	1.64 %	pop3
Cluster 36	0.9877	14.947 %	1.629 %	pop3
Cluster 37	0.5771	6.831 %	0.745 %	pop3
Cluster 38	0.993	6.556 %	0.715 %	pop3
Cluster 39	1	5.731 %	0.625 %	pop3
Cluster 40	1	26.501 %	2.89 %	pop3
Cluster 44	0.8695	1.054 %	0.115 %	pop3

- Purity of each cluster relative to their population.
- The clusters are grouped into populations
- The purity threshold sorts clusters in the two tables on the left