



Orange

Premiers pas ...



Orange

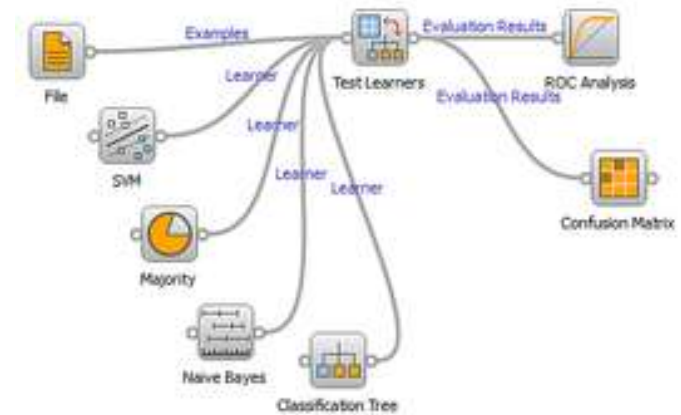
- Outil intégré et libre
 - Téléchargeable à l'adresse : <http://orange.biolab.si/>
 - Librairie pour
 - la manipulation de données,
 - Le Data mining,
 - l'apprentissage supervisé,
 - Etc.
 - Codée en C++, Surcouche en Python
 - Programmation graphique et scripts
-

Programmation graphique

- Construire un logiciel en programmation graphique
 - dessiner l'ordinogramme du logiciel
 - assembler des icônes



Un schéma



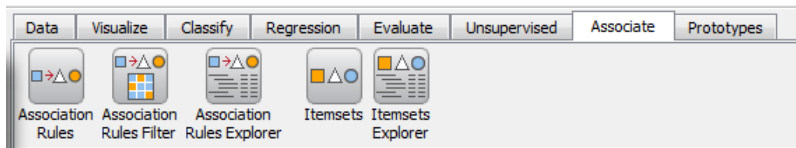
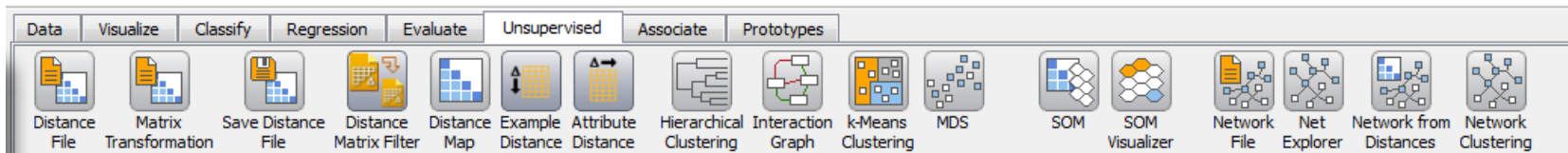
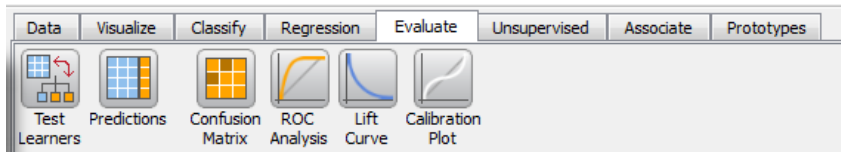
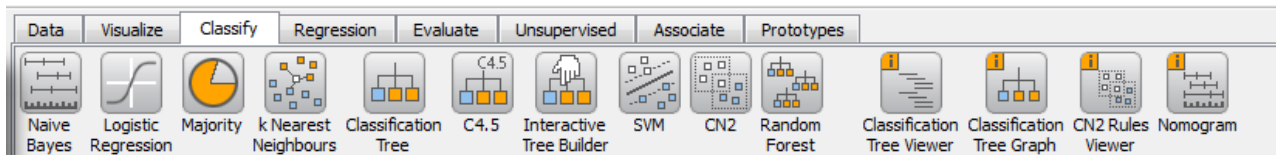
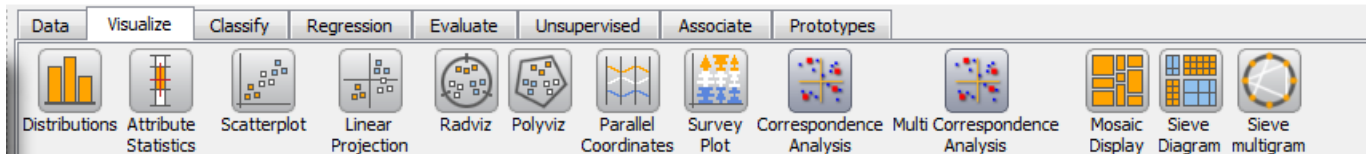
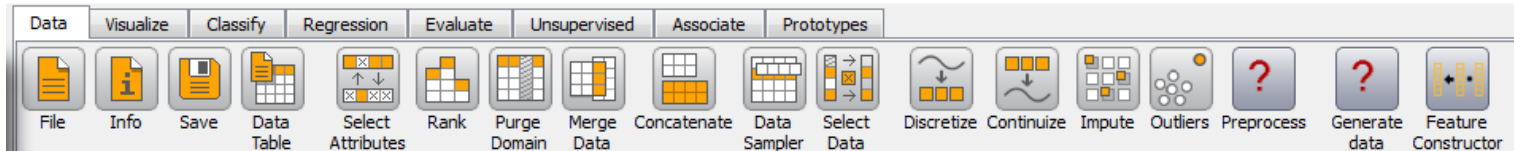
- Les icônes (widgets) représentent des éléments de programmes permettant de faire des traitements particuliers
 - ouvrir un fichier, construire un graphique, ...

Programmation graphique

- Programmation plus intuitive
 - Comme les fonctions, les widgets ont des entrées et des sorties
 - Une boîte s'exécute lorsque ses données d'entrées sont disponibles donc lorsque la boîte qui la précède a terminé son traitement et rendu son résultat
 - Programmation par flux de données
 - Animations d'exécution
 - Structure parallèle
-

Orange : Widgets

Un catalogue fournit et ordonné en onglets

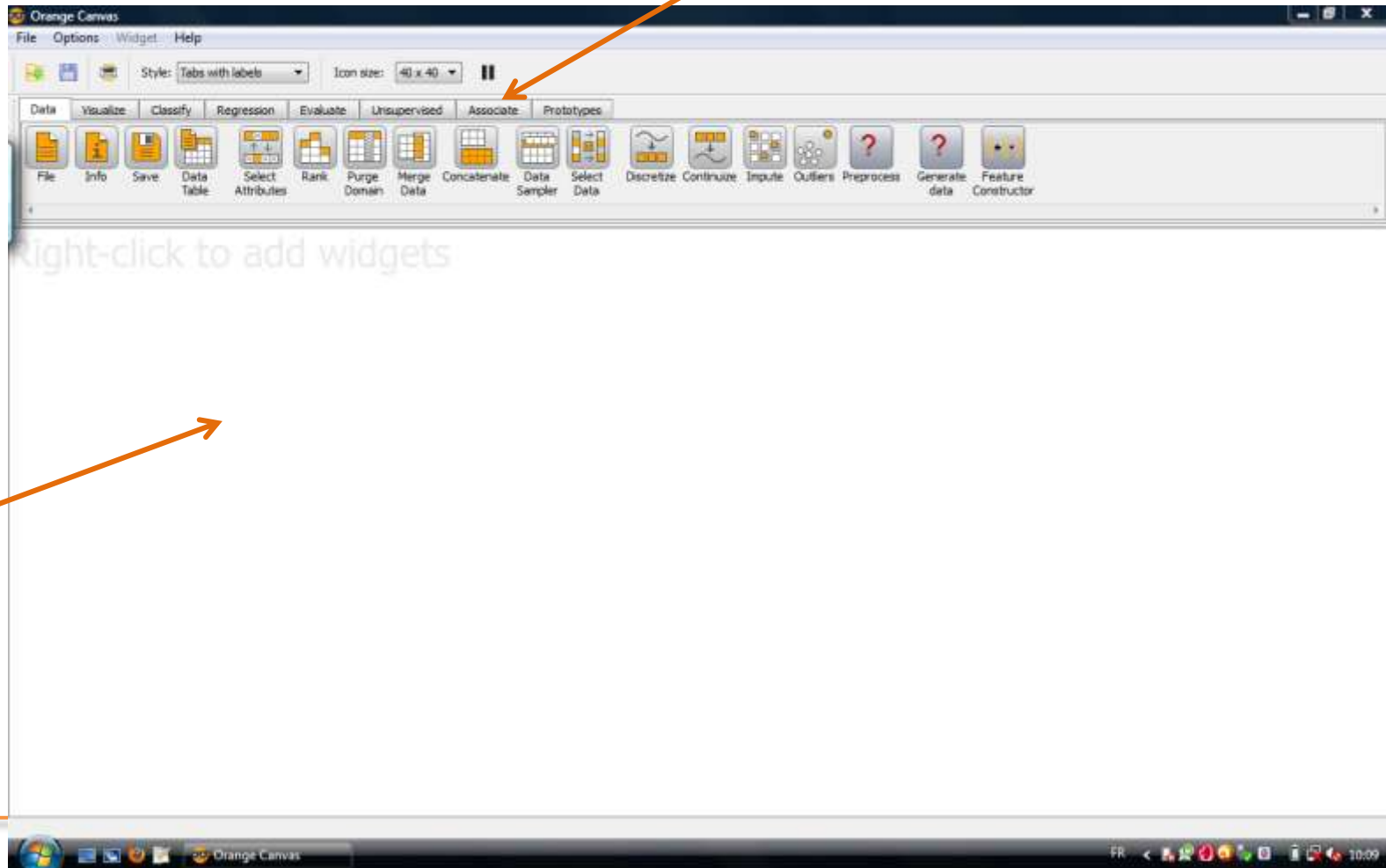


Orange : Widgets

- Aide en ligne :
 - <http://orange.biolab.si/doc/catalog/>
- Possibilité de script en Python pour utilisation et compléter les fonctionnalités proposées

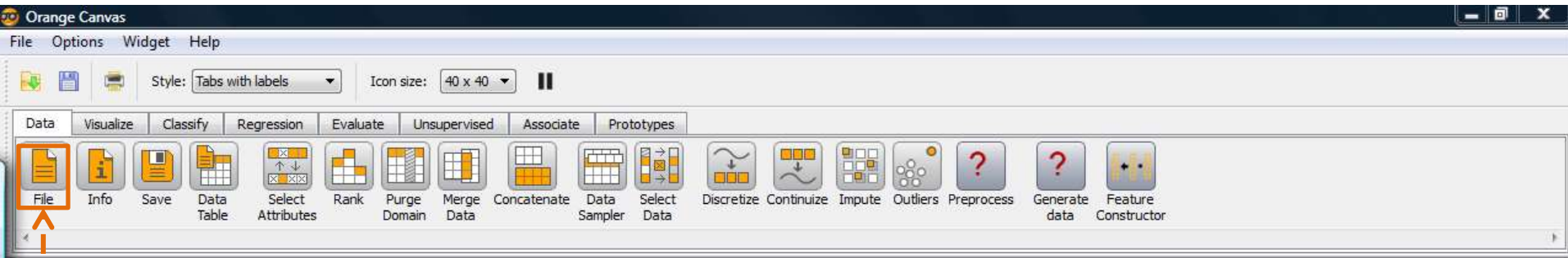
Fenêtre principale

Onglets de widgets

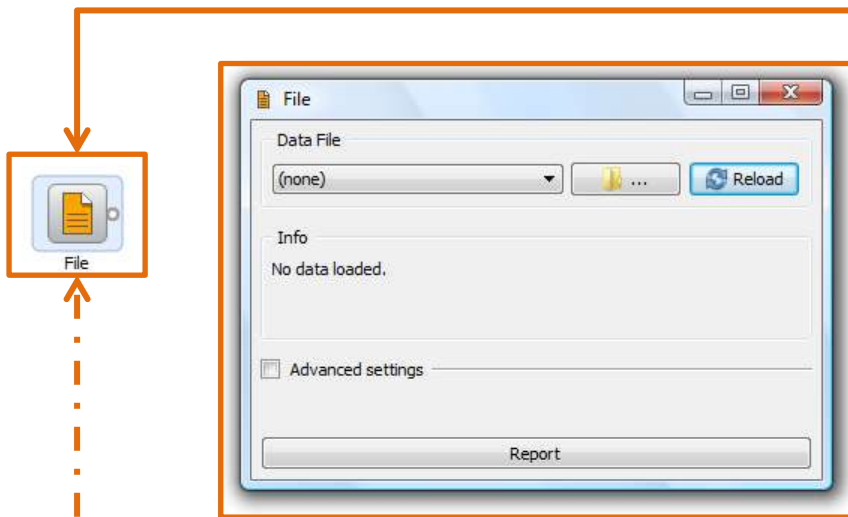


Zone de construction du schéma

Ouvrir un fichier de données (.tab)



Un widget est ajouté au schéma par simple clic dans le bandeau ou glisser-déposer



Un double-clic sur un widget permet d'ouvrir son menu propre et de le paramétrer

Ouvrir un fichier de données (.tab)

The screenshot shows the Orange Canvas interface with the 'File' widget selected. The 'Data File' section of the widget is highlighted with a red box, and a red dashed arrow points from the word 'click' to the '...' button. The 'Open Orange Data File' dialog is open, showing a file explorer view of a folder named 'codes_sources' on the drive 'HD-PCU2 (F:)'. The file 'donnees_dessinees.tab' is selected. The dialog also shows a list of files and folders, including 'agroNet', 'install', 'pyann', 'pyvetmath', 'data_bool.tab', 'data_bool_2.tab', 'save_data_bool.tab', 'save_data_spirales_dessinees.tab', 'spirale.tab', 'spirale', 'spirale_config', and 'spirales_floues.tab'. The 'Nom du fichier' field is set to 'donnees_dessinees.tab' and the file type is 'Tab-delimited files (*.tab *.txt)'. The 'Ouvrir' button is highlighted.

click

File

Data File

(none)

Info

No data loaded.

Advanced settings

Report

Open Orange Data File

HD-PCU2 (F:) > codes_sources

Rechercher

Organiser

Affichages

Nouveau dossier

Nom	Date de modification	Type	Taille
agroNet		Folder	
install		Folder	
pyann		Folder	
pyvetmath		Folder	
data_bool.tab		File	
data_bool_2.tab		File	
<input checked="" type="checkbox"/> donnees_dessinees.tab		File	
save_data_bool.tab		File	
save_data_spirales_dessinees.tab		File	
spirale.tab		File	
spirale		File	
spirale_config		File	
spirales_floues.tab		File	

Nom du fichier : donnees_dessinees.tab

Tab-delimited files (*.tab *.txt)

Ouvrir Annuler

Orange Canvas

File

Microsoft PowerPoi...

FR < > 10:14

Ouvrir un fichier de données (.tab)

The image shows the Orange Canvas software interface. The main window has a menu bar (File, Options, Widget, Help) and a toolbar with various data processing widgets. A 'File' widget is selected, and its configuration dialog is open. The dialog has a title bar 'File' and a 'Data File' section with a dropdown menu showing 'donnees_dessinees.tab'. Below this is an 'Info' section with the text: '1655 example(s), 2 attribute(s), 0 meta attribute(s). Classification; Discrete class with 2 value(s)'. There is also an 'Advanced settings' checkbox and a 'Report' button at the bottom.

Orange Canvas

File Options Widget Help

Style: Tabs with labels Icon size: 40 x 40

Data Visualize Classify Regression Evaluate Unsupervised Associate Prototypes

File Info Save Data Table Select Attributes Rank Purge Domain Merge Data Concatenate Data Sampler Select Data Discretize Continuize Impute Outliers Preprocess Generate data Feature Constructor

File

File

Data File

donnees_dessinees.tab

Info

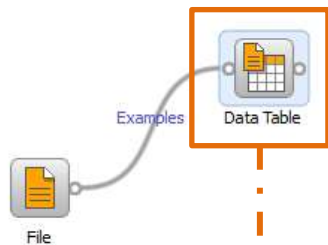
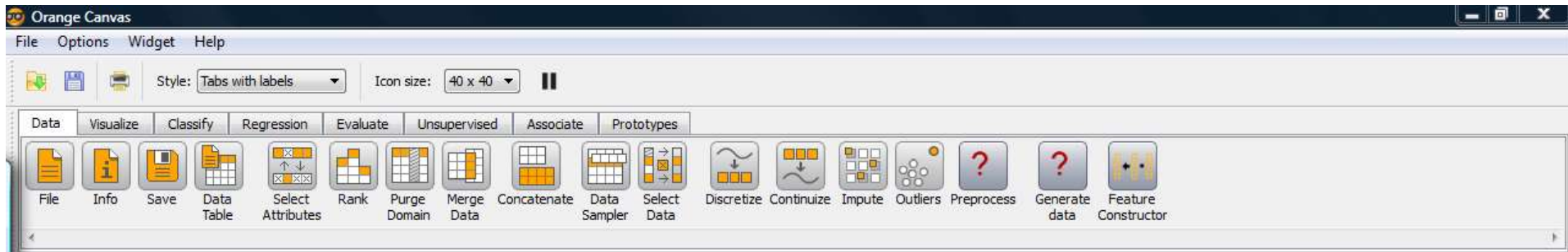
1655 example(s), 2 attribute(s), 0 meta attribute(s).
Classification; Discrete class with 2 value(s).

Advanced settings

Report

FR 10:15

Visualiser le tableau de données



Double-click

The screenshot shows the "Data Table" widget window. The title bar reads "Data Table". The window is divided into several sections:

- Info:** 1655 examples, 0 (0.0%) with missing values. 2 attributes, no meta attributes. Discrete class with 2 values.
- Settings:**
 - Show meta attributes
 - Show attribute labels (if any)
 - Visualize continuous values
 - Color:
 - Resize columns:
 -
- Selection:**
 -
 - Commit on any change
 -
- Preview:** A table titled "donnees_dessinees (Examples)" with columns "X" and "Y".

	X	Y
1	0.072	0.893
2	0.109	0.966
3	0.022	0.911
4	0.080	0.942
5	0.100	0.947
6	0.093	0.849
7	0.131	0.975
8	0.067	0.916
9	0.081	0.951
10	0.103	0.827
11	0.053	0.975
12	0.188	0.926
13	0.111	0.922
14	0.158	0.917
15	0.090	0.914
16	0.082	0.897

Visualiser des informations sur les données

Orange Canvas

File Options Widget Help

Style: Tabs with labels Icon size: 40 x 40

Data Visualize Classify Regression Evaluate Unsupervised Associate Prototypes

File Info Save Data Table Select Attributes Rank Purge Domain Merge Data Concatenate Data Sampler Select Data Discretize Continuize Impute Outliers Preprocess Generate data Feature Constructor

Examples Data Table

File Examples Info

Double-click

Info

Data Set Size

Samples (rows):	1655
Attributes (columns):	2

Attributes

Discrete attributes:	0
Continuous attributes:	2
String attributes:	0

Meta attributes:

Meta attributes:	0
Class attribute:	Yes

FR 10:16

Visualisation graphique des données

The image displays the Orange Canvas interface. On the left, a workflow is shown with a 'File' widget connected to 'Data Table' and 'Info' widgets. A 'Scatterplot' widget is connected to the 'Data Table' widget. An orange box highlights the 'Scatterplot' widget in the workflow, with a dashed arrow and the text 'Double-click' pointing to it. On the right, the 'Scatterplot' widget's configuration panel is open, showing the following settings:

- Main** / **Settings**
- X-axis Attribute: C X
- Y-axis Attribute: C Y
- Point Color: D Class label
- Additional Point Properties
- Point label: (No labels)
- Point shape: (Same shape)
- Point size: (Same size)
- Optimization dialogs: VizRank
- Zoom / Select: [Magnifying glass, Selection box, Eraser, Undo, Redo, Close]
- Buttons: Save Graph, Report

The scatterplot visualization shows two classes of data points: Class 1 (blue) and Class 2 (red). The X-axis ranges from 0 to 0.8, and the Y-axis ranges from 0 to 1.0. Class 1 points are clustered on the left side (X < 0.4), while Class 2 points are clustered on the right side (X > 0.4).

FR 10:17

Sélection au sein des données

The screenshot displays the Orange Canvas interface with a workflow containing a 'Select Attributes' widget. A dialog box titled 'Select Attributes' is open, showing the configuration options. The 'Available Attributes' section has a search filter 'filter attributes...'. The 'Attributes' section lists 'X' and 'Y' attributes. The 'Class' section shows 'Class label'. The 'Meta Attributes' section is empty. The 'Apply' button is highlighted. A dashed orange arrow points from the 'Select Attributes' widget in the workflow to the dialog box.

Workflow components and connections:

- File widget connected to Data Table widget (Examples)
- Data Table widget connected to Scatterplot widget (Examples)
- Info widget connected to Scatterplot widget (Examples)
- Select Attributes widget connected to Scatterplot widget (Examples)

Dialog box 'Select Attributes' configuration:

- Available Attributes: filter attributes...
- Attributes: X, Y
- Class: Class label
- Meta Attributes: (empty)
- Buttons: Up, Down, >, <, Apply, Reset, Report

Sélection au sein des données

The image shows the Orange Canvas interface with a workflow and a dialog box. The workflow consists of a 'File' widget connected to 'Examples', which then branches to 'Info', 'Data Table', and 'Scatterplot'. A 'Select Attributes' widget is positioned above the 'Data Table' widget. The 'Select Attributes' dialog box is open, showing a list of 'Available Attributes' with 'Y' selected and highlighted by an orange box. A dashed arrow points from 'Y' to the left arrow button, which is also highlighted by an orange box. The 'Attributes' list on the right contains 'X'. The 'Class' section shows 'Class label' selected. The 'Meta Attributes' section is empty. The dialog box has 'Apply', 'Reset', and 'Report' buttons at the bottom.

Orange Canvas

File Options Widget Help

Style: Tabs with labels Icon size: 40 x 40

Data Visualize Classify Regression Evaluate Unsupervised Associate Prototypes

File Info Save Data Table Select Attributes Rank Purge Domain Merge Data Concatenate Data Sampler Select Data

Examples

File Info Data Table Scatterplot

Select Attributes

Available Attributes

filter attributes...

Y

Attributes

X

Class

Class label

Meta Attributes

Apply Reset Report

FR 10:19

Visualisation de la nouvelle table

The screenshot displays the Orange Canvas interface. The main workflow consists of a 'File' widget connected to 'Info', 'Data Table', 'Select Attributes', and 'Scatterplot' widgets. The 'Data Table' widget is currently selected, and its configuration window is open, showing the following details:

Data Table

Info
1655 examples,
0 (0.0%) with missing values.
1 attribute,
no meta attributes.
Discrete class with 2 values.

Settings
 Show meta attributes
 Show attribute labels (if any)
 Visualize continuous values
Color:
Resize columns: + -
Restore Order of Examples

Selection
Send selections
 Commit on any change
Report

donnees_dessinees (Examples)

	X	Class label
1	0.072	Class 1
2	0.109	Class 1
3	0.022	Class 1
4	0.080	Class 1
5	0.100	Class 1
6	0.093	Class 1
7	0.131	Class 1
8	0.067	Class 1
9	0.081	Class 1
10	0.103	Class 1
11	0.053	Class 1
12	0.188	Class 1
13	0.111	Class 1
14	0.158	Class 1
15	0.090	Class 1
16	0.082	Class 1
17	0.066	Class 1

Visualisation graphique du résultat

The image displays the Orange Canvas interface. On the left, a workflow is visible with the following components: a File widget, an Info widget, a Data Table widget, a Select Attributes widget, and a Scatterplot widget. The Scatterplot widget is connected to the Data Table widget via an 'Examples' link. The Scatterplot widget is also connected to a Data Table (2) widget via an 'Examples' link. The Scatterplot widget is currently selected, and its configuration window is open.

The Scatterplot (2) configuration window shows the following settings:

- Main** tab is active.
- X-axis Attribute:** C X
- Y-axis Attribute:** D Class label
- Point Color:** D Class label
- Additional Point Properties:**
 - Point label:** (No labels)
 - Point shape:** (Same shape)
 - Point size:** (Same size)
- Optimization dialogs:** VizRank
- Zoom / Select:** Includes icons for zoom in, zoom out, pan, and other navigation tools.

The scatterplot visualization shows two distinct clusters of data points. The upper cluster, labeled 'Class 2', consists of red points. The lower cluster, labeled 'Class 1', consists of blue points. The x-axis is labeled 'X' and ranges from 0 to 0.8. The y-axis is labeled 'Class label' and has two categories: Class 1 and Class 2. A legend at the bottom right of the plot area shows a blue dot for 'Class 1' and a red dot for 'Class 2'.

Sauvegarde des données

The image shows the Orange Canvas interface with a workflow on the left and two dialog boxes on the right. The workflow consists of several widgets: File, Info, Save, Data Table, Select Attributes, Rank, Purge Domain, Merge Data, Concatenate, Data Sampler, Select Data, Discretize, Continuize, Impute, Outliers, Preprocess, Generate data, and Feature Constructor. The 'Save' widget is highlighted with an orange box and labeled 'Double-click'. A dashed orange arrow points from this label to the 'Save' dialog box. The 'Save' dialog box has a 'Filename' field with '(none)' and a 'Save current data' button. A green box highlights the '...' button in the 'Filename' field, with a dashed green arrow labeled 'click' pointing to the 'Save Orange Data File' dialog box. The 'Save Orange Data File' dialog box shows the file path 'HD-PCU2 (F:) > codes_sources', the filename 'select_data.tab', and the type 'Tab-delimited files (*.tab)'. The 'Enregistrer' button is highlighted with a green box.

Orange Canvas

File Options Widget Help

Style: Tabs with labels Icon size: 40 x 40

Data Visualize Classify Regression Evaluate Unsupervised Associate Prototypes

File Info Save Data Table Select Attributes Rank Purge Domain Merge Data Concatenate Data Sampler Select Data Discretize Continuize Impute Outliers Preprocess Generate data Feature Constructor

Double-click

Save

Filename (none) Save current data

click

Save Orange Data File

HD-PCU2 (F:) > codes_sources > Rechercher

Nom du fichier: select_data.tab

Type: Tab-delimited files (*.tab)

Parcourir les dossiers Enregistrer Annuler

Orange Canvas Save Microsoft PowerPoi... FR 10:23

Sauvegarde du schéma (ensemble du processus)

The screenshot displays the Orange Canvas interface. The 'File' menu is open, with 'Save as...' selected. The workflow diagram includes the following components:

- File** widget (input)
- Data Table** widget (output of File)
- Select Attributes** widget (output of Data Table)
- Data Table (2)** widget (output of Select Attributes)
- Scatterplot** widget (output of Data Table)
- Scatterplot (2)** widget (output of Select Attributes)
- Save** widget (output of Scatterplot (2))

The 'File' menu options and their shortcuts are:

- New Scheme (Ctrl+N)
- Open... (Ctrl+O)
- Open and Freeze...
- Reload Last Schema (Ctrl+R)
- Report (Ctrl+Alt+R)
- Save (Ctrl+S)
- Save as... (highlighted)
- Save as Application (Tabs)...
- Save as Application (Buttons)...
- Print Schema / Save image (Ctrl+P)
- Recent Schemas
- Exit (Ctrl+Q)

The toolbar contains various data processing widgets such as Purge Domain, Merge Data, Concatenate, Data Sampler, Select Data, Discretize, Continuize, Impute, Outliers, Preprocess, Generate data, and Feature Constructor.