

Introduction to NVivo: Qualitative Coding & Text Analysis

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CRIM 6200: Senior Capstone Project
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Agenda

- What is qualitative coding?
- What is NVivo?
 - Important NVivo-specific vocabulary and functions
 - Understand how to use NVivo as a research tool
 - Learn the differences between NVivo file types and why knowing this is important

Materials: bit.ly/SingerFA25

License: NVT14-IZ000-LHA20-VR683-JPKNM

Qualitative Coding

Qualitative coding is when you create a list of themes, or a **schema**, that you want to highlight in a set of primary/secondary sources. Then, you go through all your sources and highlight particular moments from the text according to those themes.

Getting started: Qualitative Coding with NVivo

What is NVivo?

- NVivo is a **text analysis** and **research organization** software that is available through [Northeastern's Student Hub](#) > Resources > IT Services > Software Downloads.
- NVivo provides methods for you to annotate and code documents with user-created tags (codes), summarize and visualize these codes, and organize research materials.

What is NVivo Useful For?

NVivo is particularly helpful for organizing and annotating research materials such as:

- **Primary sources:** any primary sources you may be analyzing such as letters, field notes, or documents from an archive
- **Secondary sources:** scholarly articles, newspaper articles, book chapters.
- **Your own notes** about your project (you can even compose in NVivo!)

Other functions of NVivo

- Create projects that store, organize, and code documents/files
- Provide a method for you to code your documents with a user-created coding schema (codes)
- Query, summarize, organize, and visualize information about your coding
- Conduct forms of computational text analysis, like word counts, on the documents, themselves
- Conduct social network analysis with social media datasets

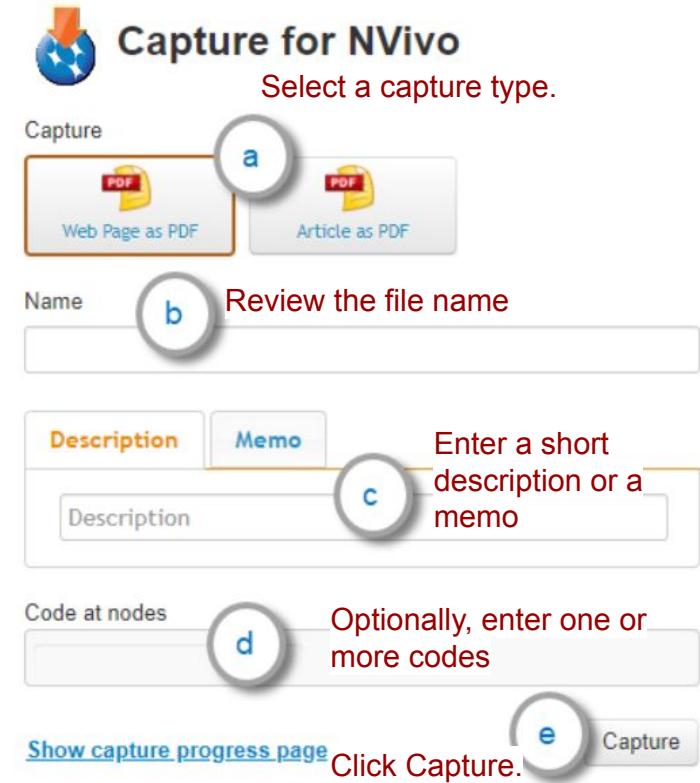
NVivo Vocabulary

Full definitions available [on the handout](#)

- **Data:** your research documents & files
- **Codes:** the ways to annotate the themes/concepts in your research.
- **Nodes:** the themes/concepts that are user-created (NVivo 12 and older only)
- **Relationships:** coding connections between two data items
- **Cases:** units of analysis for your research.
- **Maps:** visualization tool to see connections between the cases and codes
- **Query:** a flexible way to explore and analyze your files, cases, and codes

NCapture

- NCapture is a free Chrome extension to capture web pages, online articles, Facebook and Youtube content and add annotations, memos, and codes. The captured content is saved as an NCapture file (.nvcx) which you can import into your NVivo project.
- Please be mindful of obtaining consent for individual information you are capturing. Be aware of the current website terms and conditions when capturing data.



Querying

Querying, or asking something from your data, in NVivo provides multiple ways to explore both your codes and your text.

- **Word Frequency:** Counts the number of times words (with stopwords removed) appear in one or more files. Stopwords have non-significant meaning and appear frequently, like “the”, “a,” “is,” etc. They can inflate word frequencies without adding meaning, and are typically removed.
- **Coding:** Shows the number of codes, text that was coded, and the files.
- **Crosstab:** cross reference codes and case classifications. For example, you might want to know how often a particular code appears in both scholarly articles and your primary texts.

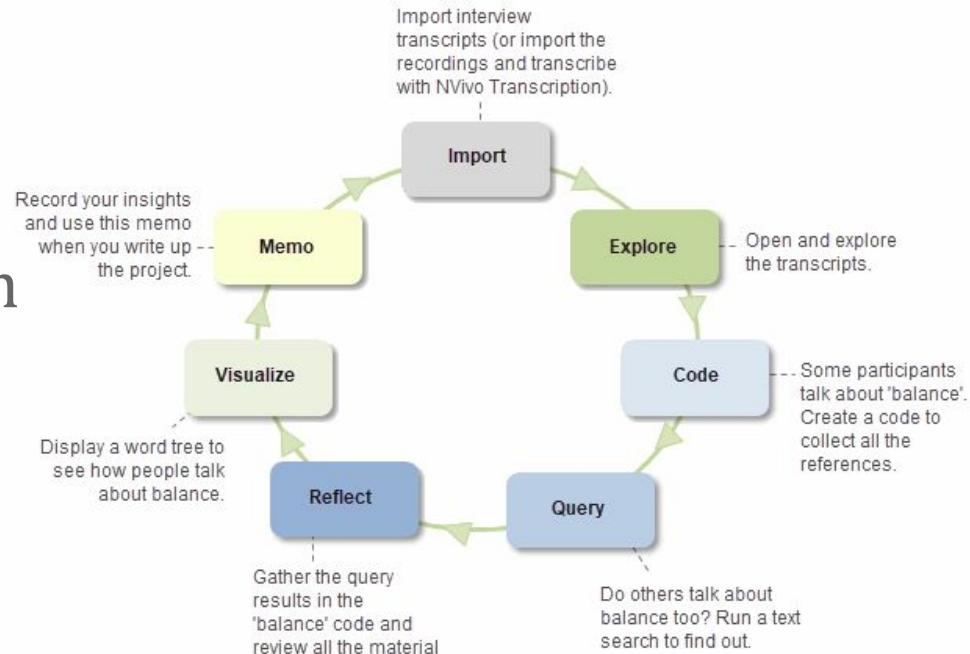
Coding & Organizing Literature Reviews

You can import reference files from EndNote, Zotero, and other citation management tools to organize a literature review. In your citation management tool, export the library as an XML (EndNote) or RIS file (Zotero).

1. Select the XML or RIS file from your directory.
2. Choose to display references by Author and Year, or Title.
3. Select the option to assign data to the Reference classification, or to other classifications (book, journal article, etc).
4. Select the option to replace attributes or memos with file notes, abstract, and keywords.
5. Click Import.

Making effective codes

The codes you create are themselves **arguments**; you are choosing what information you value and want to extract from the transcripts. This is often an iterative process.



Source: Lumivero - Workflow Overview

Codes

The list of themes or codes you will use to code your files. The “codes” folder will be empty until you add your own! You can add codes and sub-codes.

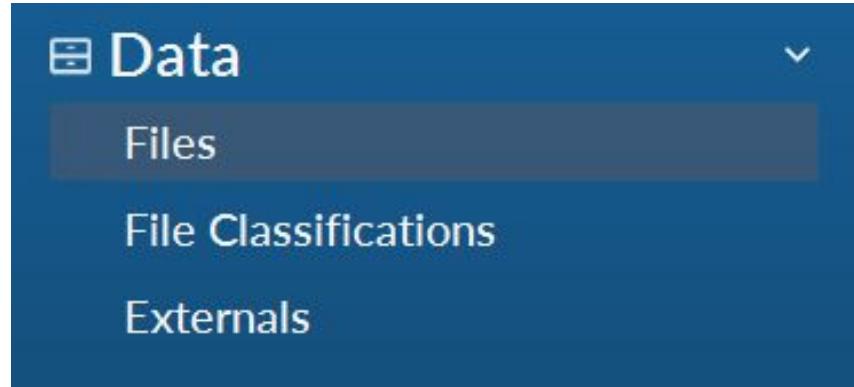
The screenshot shows a software interface for managing data and codes. On the left, a sidebar has 'Data' expanded, showing 'Files', 'File Classifications', and 'Externals'. Below that is an 'ORGANIZE' section with 'Coding' expanded, showing 'Codes', 'Auto codes', 'Melaleuca 2017 survey', 'Melaleuca 2018 survey', 'Sub-Codes', 'Sentiment', 'Relationships', and 'Relationship Types'. To the right is a main panel titled 'Coding' with a list of codes and their counts:

Code	Count	Count
mental-emotional wellb	13	54
OWN involvement	19	97
personal-individual facto	1	1
physical health	17	36
social connection	24	232
societal context	0	0
talking about ...	0	0

At the bottom of the main panel, there is a placeholder text: "Drag selection here to code to a new code".

Data

The “Data” in NVivo are all the research materials you are using (scholarly articles, transcriptions, newspapers, research notes, etc.).



“Files” will be where you can access all the research materials you have imported into this project.

Important Reminders

- NVivo can import all types of files, including .docx, .pdf, .doc, .csv, .png, .jpeg, .txt, video/audio files, and more.
- You should always **save** your original documents on your local computer or in cloud storage, even if these documents are imported into NVivo. NVivo can store documents, but it is more of an organization and analysis tool, rather than a storage option.

NVivo is NOT crossplatform friendly

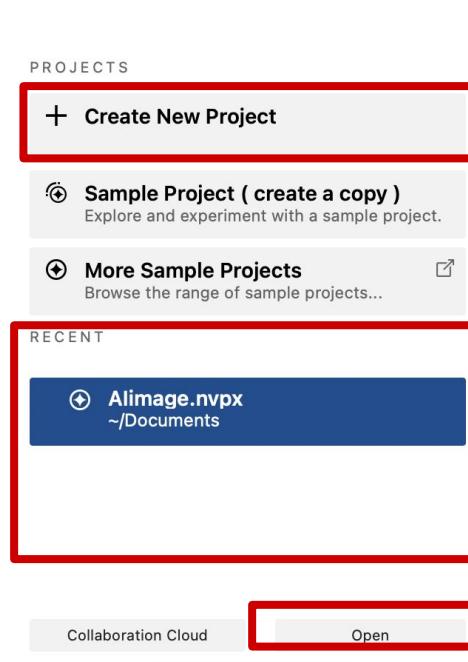
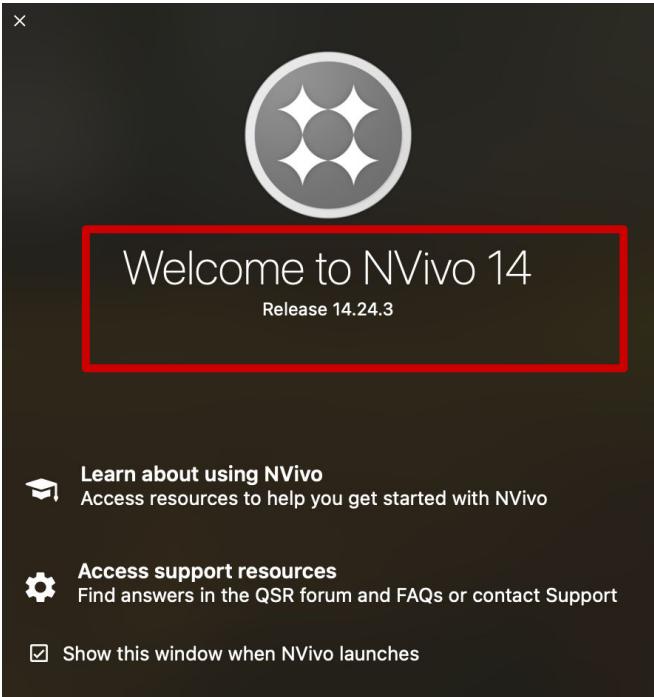
The Mac and PC versions of Nvivo—as well as the version numbers—are different and have different file types.

- Mac NVivo projects end in .npvx and can only open that file project type
- Windows NVivo projects end in .npv, but can open both .npv *and* .npvx
- Version numbers (11, 12, 14) also impact which projects can be opened on which platform

Anatomy of Nvivo: Mac

Anatomy of NVivo: Opening on Macs

Your version number (you should have version **12 or 14**)

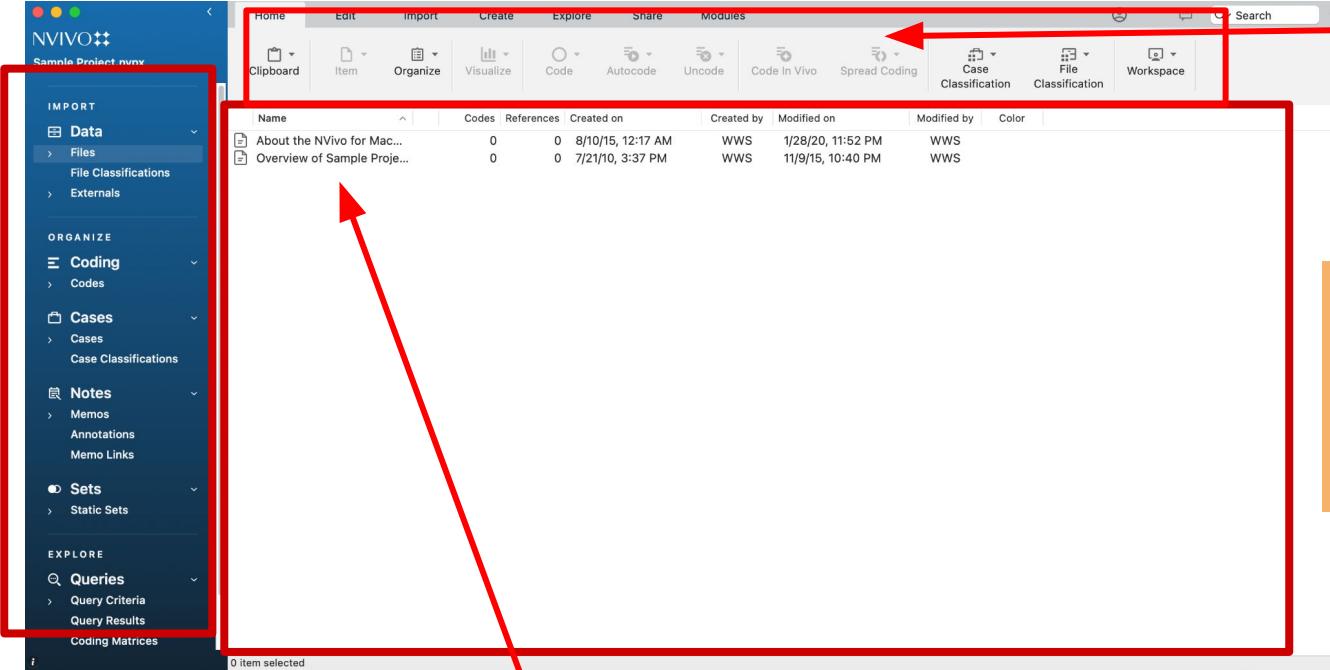


Create a new **project** (stores all your documents, codes, etc)

The recent projects you opened

Open another project that is not recent

Anatomy of NVivo: Projects on Macs



Menu to access files, codes, cases, notes, etc.

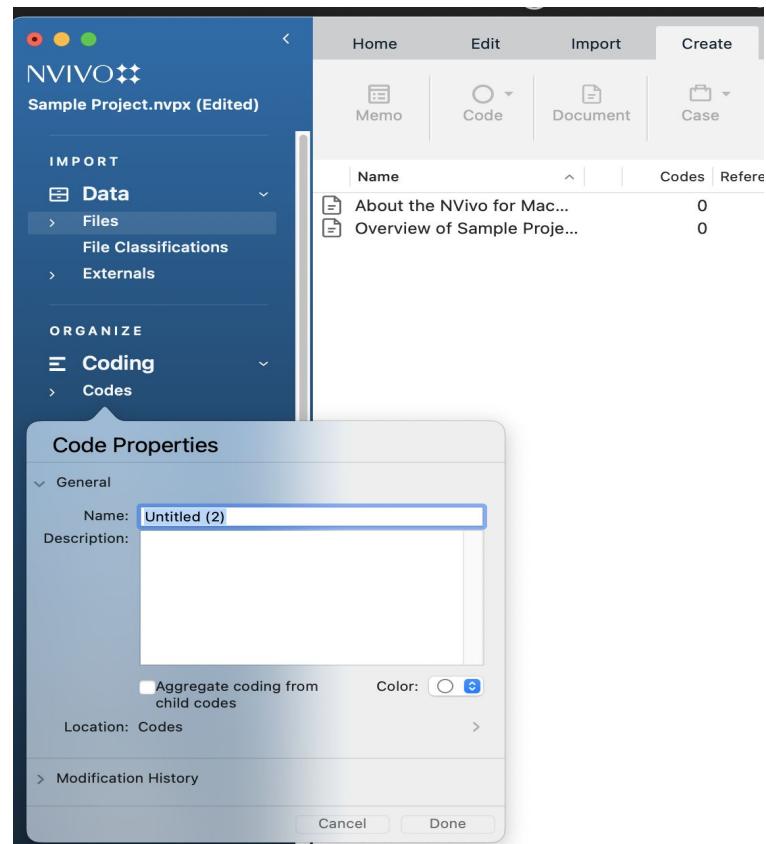
Toolbar to access functions

The window that will open the files, queries, etc. You can annotate documents here.

List of codes, files, etc.

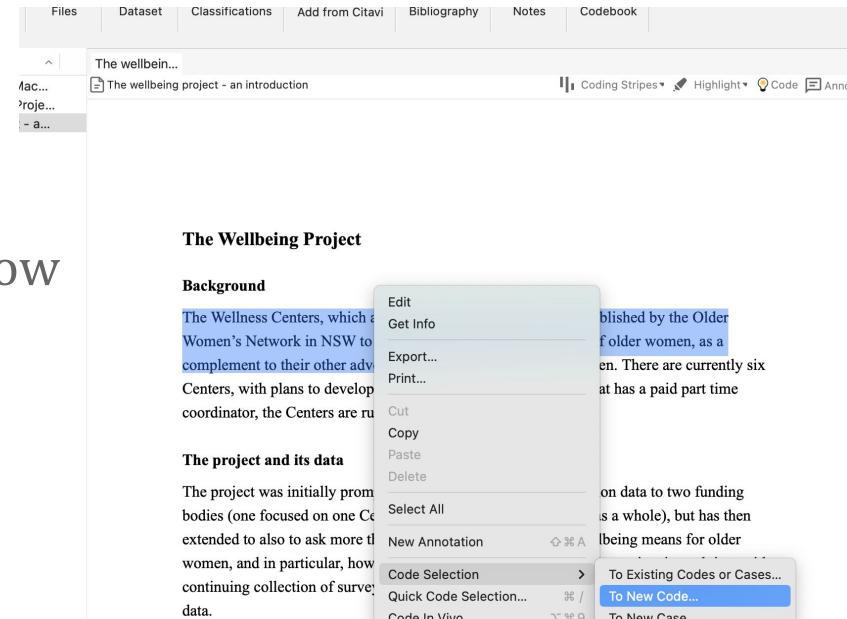
Creating Codes (Macs)

1. Go to “Create” in the toolbar
2. Click “Code”
3. Your new code will pop up and ask for a name and description
 - a. To add a *subcode*, follow the same steps, but click on the original code where you want to add the subcode



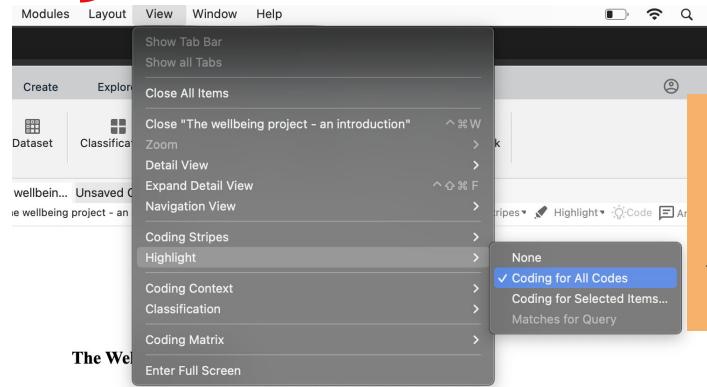
Coding Files/Documents (Macs)

1. Open the file you would like to annotate.
2. Highlight the text you want to code.
3. Control-click and go to “Code Selection.”
4. Click “At Existing Codes or Cases”
 - a. Once you use codes, the codes will show up when you click “Code Selection.”
 - b. You can also add new codes/cases as you annotate.



View Your Codes (Macs)

1. Go to “View” in the toolbar
2. Click “Highlight” then “Coding for All Codes”
3. Click “Coding Stripes” and “All Coding” to see the code names and where they appear in the document.
 - a. If you have tagged an entire file as a “case,” everything will be highlighted. Choose “Coding for Selected Items” to select the codes you’d like to view.



Coding stripes
(shows what
codes appear
where in the
doc)

The Wellness Centers, which are the focus of this study, were established by the Older Women's Network in NSW to enhance the health and wellbeing of older women, as a complement to their other advocacy work on behalf of older women. There are currently six Centers, with plans to develop more. With the exception of one that has a paid part time coordinator, the Centers are run by volunteers.

The project and its data

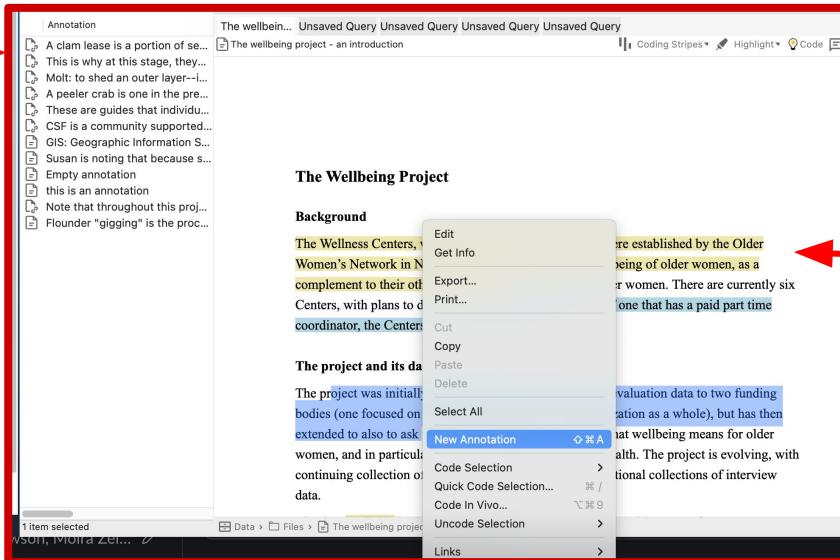
The project was initially prompted by the need to provide evaluation data to two funding bodies (one focused on one Center, the other on the organization as a whole), but has then extended to also to ask more theoretical questions about what wellbeing means for older women, and in particular, how wellbeing intersects with other aspects of life. This involves the continuing collection of survey data, and occasionally data.

Your document you are coding
and annotation (yellow =
codes, blue = annotations)

Annotating Files (Macs)

To annotate (comment), follow the same steps as coding except instead click “New Annotation” after you highlight and control-click to reach the pop-up shortcut menu. Find all your annotations in the “Notes/Annotations” section in the left menu

List of annotations



The text from the document you highlighted and are annotating

Cases (Macs)

The screenshot shows a Mac OS X desktop environment. At the top, there's a menu bar with standard Apple menu items like 'File', 'Edit', 'View', etc. Below the menu bar is a toolbar with icons for 'Case', 'Classification', 'File', 'Classification', 'Static Set', and 'Folder'. The main window title is 'The wellbeing... Unsaved Query' and the subtitle is 'The wellbeing project - an introduction'. The window content area contains text about 'The Wellbeing Project' and its 'Background'. A portion of the text is selected, and a context menu is open over it. The menu includes options like 'Edit', 'Get Info', 'Export...', 'Print...', 'Cut', 'Copy', 'Paste', 'Delete', 'Select All', and 'New Annotation'. The 'New Annotation' option has a submenu titled 'To Existing Codes or Cases...' which lists 'Code Selection', 'Quick Code Selection...', 'Code In Vivo...', and 'Uncode Selection'. The desktop background is a light grey, and the overall interface is clean and modern.

To add a “case” to a file, it’s the same method as adding a code, except you choose the “Cases” folder and the proper case.

Word Frequency Example (Mac)

Click the word frequency tab, then select the items you would like to query in the “Selected Items” tab and then click “Run Query.”

The screenshot shows a Mac application window titled "The wellbein... Unsaved Query Unsaved Query Unsaved Query". The interface includes a search bar with "Unsaved Query" and a dropdown menu. Below it is a "Word Frequency Criteria" section with the following settings:

- Search in: **Selected Items** (highlighted with a red box)
- Finding matches: Exact match only (e.g. "talk")
 Include stemmed words (e.g. "talking")
- With minimum length: 3
- Display words: All
 1000 most frequent

A yellow banner at the bottom states: "Query results exclude project stop words. Add or remove stop words in project properties." Below this is a "Summary" tab showing a table of word frequencies:

Word	Length	Count	Weighted Percentage
older	5	2,874	1.31%
health	6	2,745	1.25%
people	6	2,356	1.08%
care	4	1,746	0.80%
doi	3	1,162	0.53%
physical	8	1,076	0.49%
age	3	1,056	0.48%
ageing	6	1,029	0.47%
activity	8	945	0.43%
http	4	860	0.39%
social	6	853	0.39%
life	4	728	0.33%
well	4	722	0.33%
org	3	700	0.32%
may	3	679	0.31%
...

Crosstab Example (Mac)

Hit Explore,
Queries, then
Crosstab, and
Select the codes
you would like to
cross reference
with the cases or
attributes, then
click “Run Query.”

The screenshot shows the NULab interface with the following components:

- Top Bar:** Home, Edit, Import, Create, Explore, Share, Modules, Log In, Search.
- Explore Tab:** Last Run Query, Text Search, Word Frequency, Matrix Coding Query, Queries, Chart, Hierarchy Chart, Maps, Diagrams.
- Queries Panel:** Shows a list of saved queries, with "Crosstab..." selected.
- Crosstab Query Builder:** A modal window titled "Coding... Crosstab..." with the following details:
 - Coding Comparison:** Gender = Female (n=3), Gender = Male (n=2), Gender = Female (n=9), Gender = Male (n=12).
 - Codes:** Agriculture, Fishing or aquaculture, Jobs and cost of living, Tourism.
 - Results Table:** Redacted (showing a 4x4 grid of numbers).
- Code Selection Box:** "Selected codes (click the plus sign)" with a red rectangle around the "Codes" section of the query builder.
- Case Selection Box:** "Selected cases (click the plus sign)" with a red rectangle around the "Cases" section of the query builder.
- Attribute Selection Box:** "Selected attributes (click the plus sign)" with a red rectangle around the "Attributes" section of the query builder.

Exploring Codes (Macs)

Comparison diagram example

The screenshot shows the NVivo software interface on a Mac. The top menu bar includes Home, Create, Data, Analyze, Query, Explore (selected), Layout, View, and a search icon. Below the menu are several visualization and classification tools: Mind Map, Concept Map, Chart, Hierarchy Chart, Explore Diagram, Comparison Diagram, File Classification Sheets, and Case Classification Sheets.

The left sidebar contains a navigation tree:

- Files
 - File Classifications
 - Externals
- CODES
 - Nodes
- CASES
 - Cases
 - Case Classifications
- NOTES
 - Memos
 - Annotations
 - Memo Links
- SEARCH
 - Queries

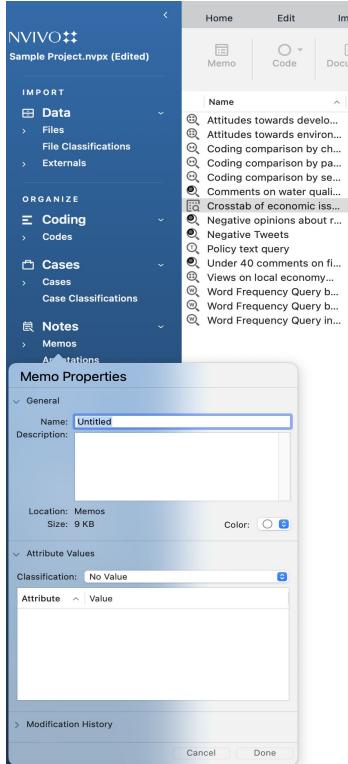
At the bottom of the sidebar is an "OPEN ITEMS" section.

The main workspace displays a "Comparison Diagram" with the following elements:

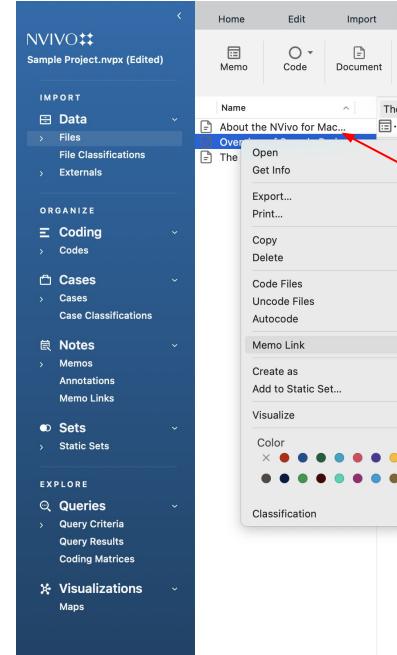
- A document icon labeled "draftDSG" connected to a blue circular node labeled "Node One".
- "Node One" is connected to a smaller blue circular node labeled "Sub Node".
- "Node One" is connected to a PDF icon labeled "Gregorio_UsingNVivoForYourLitReview".
- "Node One" is connected to a blue circular node labeled "Node Two".
- Each connection is labeled "Codes" with a double-headed arrow.

Memos and Memo Links (Macs)

Menu where
memos are
located



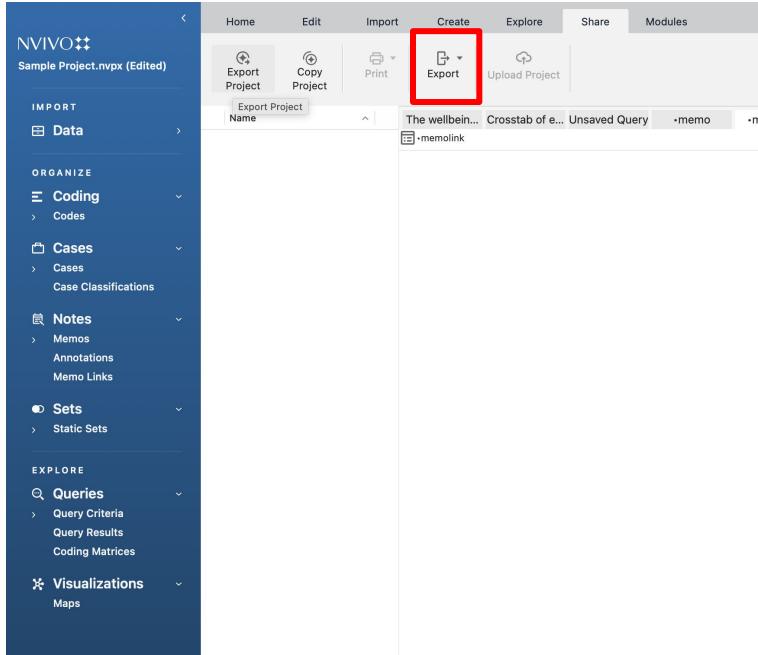
Navigating
memo
creation (hit
create,then
memo)



Navigate
to the file,
then right
click and
hit memo
link and
choose a
new or
existing
memo

Exporting Your Project

Since there is a cross-platform problem, **save and export your projects as .qdpx** files when submitting assignments so they can be opened on both Macs and Windows!



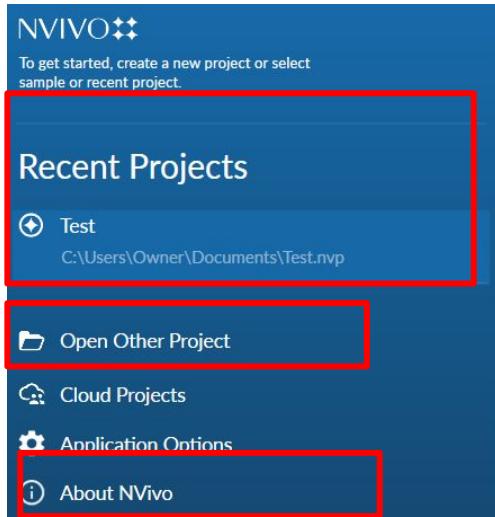
Anatomy of Nvivo: Windows

Anatomy of NVivo: Opening on Windows

The recent projects you opened

Open another project that is not recent

Your version number (you should have version **12 or 14**)



Create a new **project** (stores all your documents, codes, etc)

A screenshot of the NVivo application window. On the left, there's a "New Project" button with a plus sign, highlighted by a red box. To its right are two "Sample Project" options: "Multi-method" and "Automated Insights", each with a circular icon. In the center, there's an "Account" section showing "Logged in as:" followed by a blurred profile picture. On the right, there's a "Getting Started" section with a rocket ship icon and the text "For a quick overview of NVivo click the tutorial below...".

Anatomy of NVivo: Projects on Windows

Toolbar to access functions

Menu to access files, codes, cases, notes, etc.

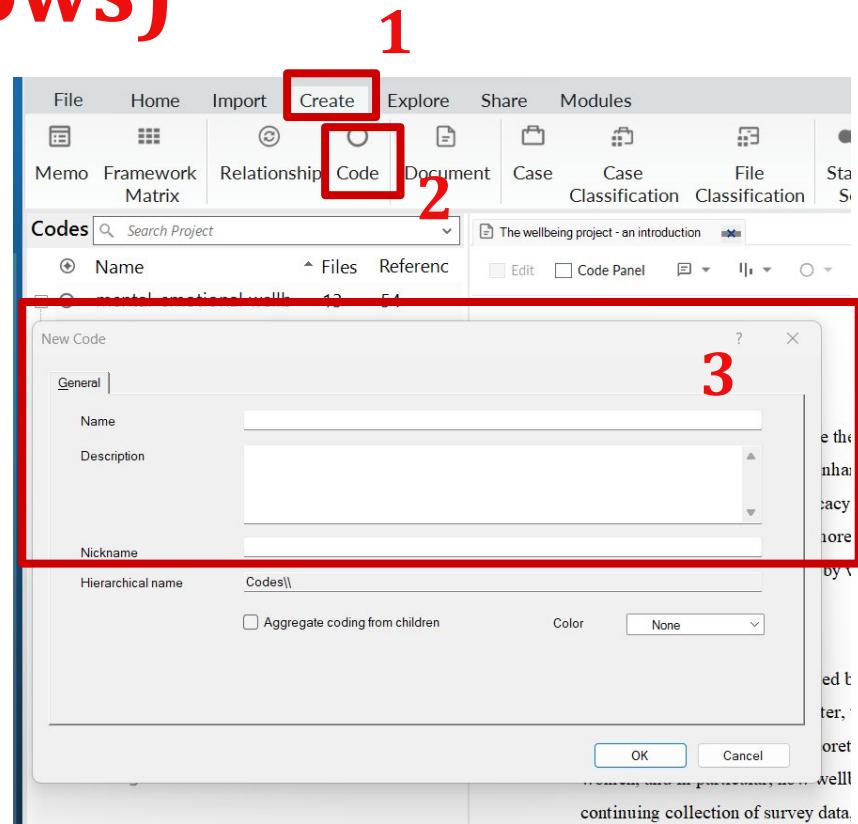
List of codes, files, etc.

The screenshot shows the NVivo interface on a Windows system. The menu bar includes File, Home, Import, Create, Explore, Share, Modules, Document, and Help. The toolbar below the menu bar contains various icons for functions like Annotations, Autocode, Chart, Word Cloud, and Compare With. The main window displays a project titled 'The Wellbeing Project'. The left sidebar lists categories such as IMPORT (Data, Files, File Classifications, Externals), ORGANIZE (Coding, Codes, Sentiment, Relationships, Relationship Types), CASES (Cases), NOTES (Notes), SETS (Sets), EXPLORE (Queries, Visualizations, Reports), and EXPORT (PDF, RTF, XML, CSV, XLSX). A central pane shows a list of files with columns for Name, Codes, and References. The right pane contains the document content with sections like 'Background' and 'The project and its data'.

The window that will open the files, queries, etc. You can annotate documents here.

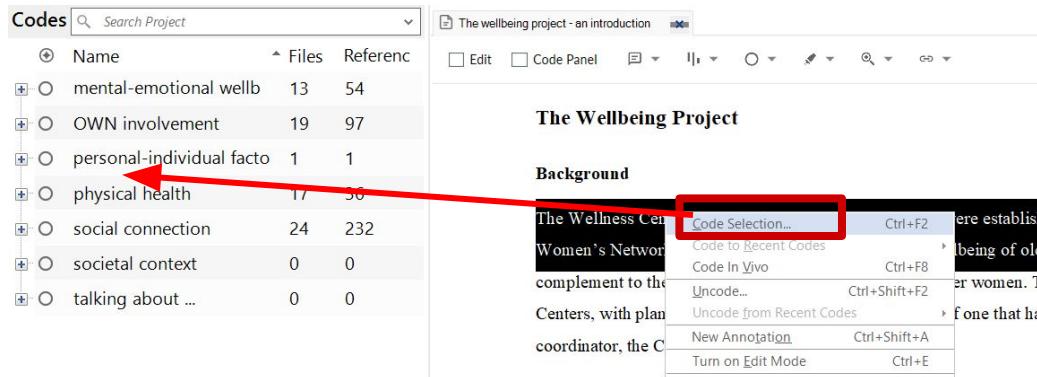
Creating Codes (Windows)

1. Go to “Create” in the toolbar
2. Click “Code”
3. Your new code will pop up and ask for a name and description
 - a. To add a *subcode*, follow the same steps, but click on the original code where you want to add the subcode



Coding Files/Documents (Windows)

1. Open the file you would like to annotate.
2. Highlight the text you want to code.
3. Drag and drop the selection onto a code.
4. Alternatively, you can right-click and select “Code.”
5. You can also add new codes/cases as you annotate.



View Your Codes (Windows)

1. Go to “Document” in the toolbar
2. Click “Highlight” then “All Coding”
3. Click “Coding Stripes” and “All Coding” to see the code names and where they appear in the document.
 - a. If you have tagged an entire file as a “case,” everything will be highlighted. Choose “Coding for Selected Items” to select which codes you’d like to view.

View Your Codes Screenshots (Windows)

The screenshot shows the NULab interface for Windows. The top navigation bar includes File, Home, Import, Create, Explore, Share, Modules, Code, and various search and export options. A red box labeled '1' highlights the 'Code' tab. Below it, a red box labeled '2' highlights the 'Coding Stripes' button in the toolbar. A large red box labeled '3' highlights the 'Codes' panel on the left, which lists various categories like 'Name', 'mental-emotional wellb...', 'OWN involvement', etc. A dropdown menu for 'Coding Stripes' is open, showing options like 'None', 'All' (which is selected), 'Selected Items...', 'Coding Density Only', 'Number of Stripes...', 'Items Last Selected', 'Select Colors', 'Automatic Colors' (which is selected), 'Item Colors', 'Group by Color', and 'Shadow Coding'. The main workspace displays a document with annotations and coding stripes. A red box highlights a section of text: "with that widowhood thing, uum when you lose your pa...". To the right, a 'CODE STRIPES' panel shows a summary of codes applied to the text, including 'widowhood' (orange stripe), 'OWN involvement' (pink stripe), 'interrelation H & Wb' (grey stripe), and 'physical health' (purple stripe). The bottom of the image has a banner stating 'The document you are coding and annotations'.

Coding stripes
(shows what codes appear where in the doc)

Annotating Files (Windows)

To annotate (comment), follow the same steps as coding except instead click “New Annotation” after you highlight and right click. Find all your annotations in the “Notes/Annotations” section in the left menu

The screenshot shows the NULab interface for Windows. On the left, there's a sidebar with sections like Quick Access, File Classifications, Externals, Organize, Coding (Codes, Auto codes, Melaleuca 2017 survey, Melaleuca 2018 survey, Sub-Codes, Sentiment, Relationships, Relationship Types), Cases, Notes (highlighted with a red box), Memos, Framework Matrices, Annotations, and See-Also Links. A large orange box labeled "Where you can find all your annotations listed" points to the "Annotations" section in the sidebar. Another orange box labeled "List of annotations" points to a list of annotations in the main pane, which includes items like "Acacia L", "Melaleuca 2017 survey", and "Stathi et al AVONet-report". A third orange box labeled "Your annotation" points to a detailed view of an annotation, showing a transcript excerpt and its corresponding annotation text. A fourth orange box labeled "The text from the document you highlighted and are annotating" points to the annotated text within the transcript.

Annotations

File Name Number

- Acacia L 1
- Melaleuca 2017 survey 1
- Melaleuca 2017 survey 2
- Stathi et al AVONet-report 1
- Waratah G - Pre 1
- Ward et al Well Being in 1

L: Particular experience – there's so many capable women in the community, in the society. They are all very, how do you put it, dedicated. Like this **Wellness**, in the committee, people are so dedicated, you know, moneywise as well timewise especially. We are all volunteers, so I really admire women, especially older women, for what they do.
P: And making use of what they've got
L: Yes exactly, exactly, really you know. Really I'm happy, you know, about this Wellness. We should really, you know, continue on for the younger women, Yes.

Annotations

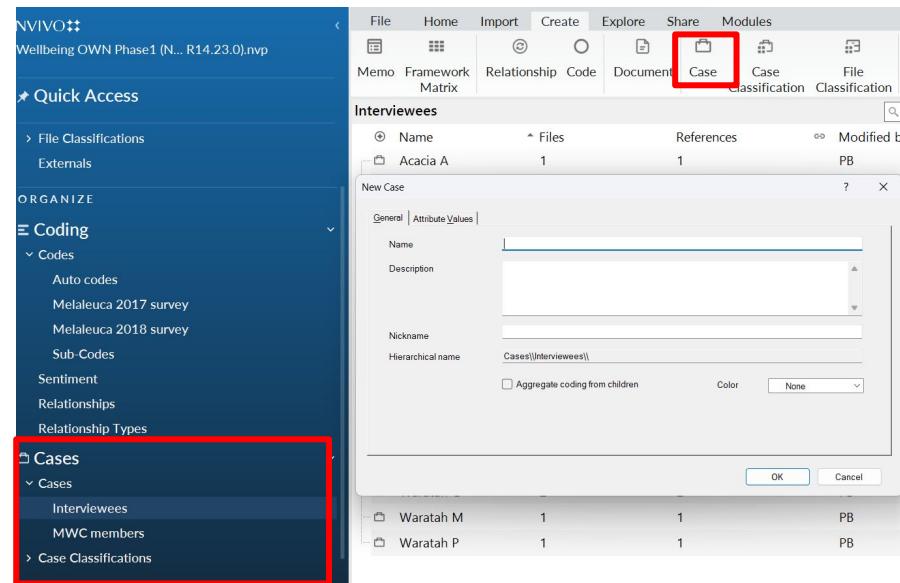
Item	Content
1	This (and the next) paragraph are referring to the centre rather than the concept

Cases (Windows)

Cases are the types of research texts in your project and can be organized based on the user's choice. **"They might represent people, places, events, organizations or other entities that you want to analyze and compare."** For example, if you have several transcripts from different trials, but want to categorize the type of trial for each text, you would use cases to do so.

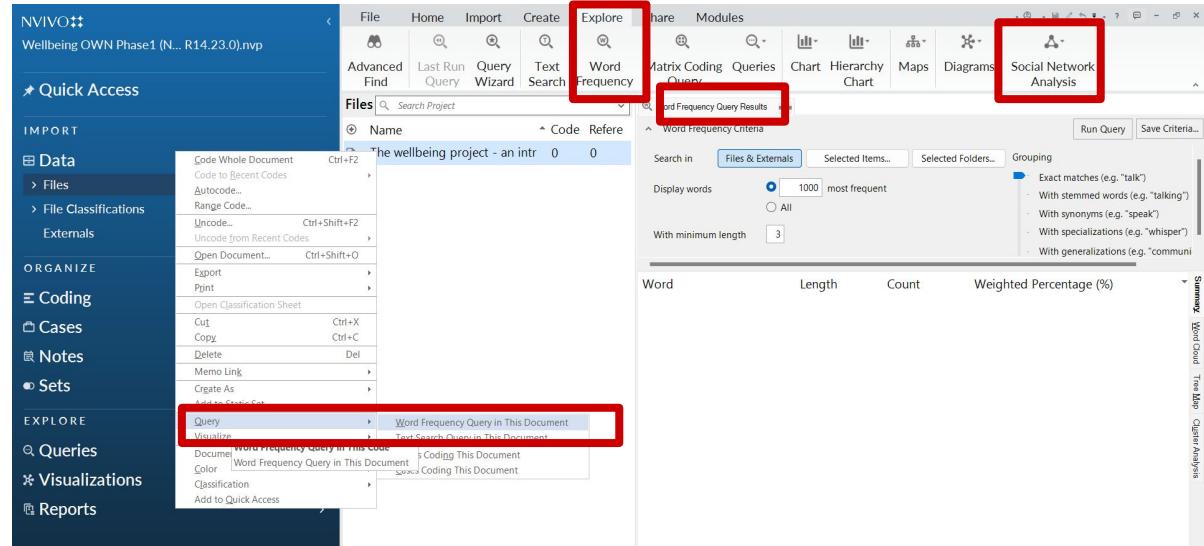
["About Cases", NVivo](#)

To add a “case” to a file, it’s the same method as adding a code, except you choose the “Cases” folder and the proper case.



Word Frequency Example (Windows)

- “Query” can be found in the “Explore” Tab
- Alternatively, you can right click on a file and select Query
- To query multiple items, select the items you would like to query in the “Selected Items” tab and then click “Run Query”



Crosstab Example (Windows)

Select the codes you would like to cross reference with the cases or attributes, then click “Run Query.”

The screenshot shows the Crosstab software interface. The top menu bar includes File, Home, Import, Create, Explore, Share, Modules, and Crosstab. The Crosstab tab is selected. Below the menu, there are several search and analysis tools: Advanced Find, Last Run Query, Query Wizard, Text Search, Word Frequency, Matrix Coding Query, Queries (highlighted by a red box), Chart, Hierarchy Chart, Maps, Diagrams, and Social Network Analysis. The main workspace is titled "Crosstab Query - Results Preview". It displays "Crosstab Criteria" with sections for "Crosstab codes against" (Codes) and "Cases". The "Codes" section contains "Codes\\mental-emotional wellbeing". The "Cases" section lists interviewees: Acacia A, Acacia B, Acacia L, Acacia V, Correa C, and Correa P. To the right, there are buttons for "Run Query", "Save Results...", and "Save Criteria...". A large orange box labeled "Selected codes (click the plus sign)" covers the "Codes" section. Another large orange box labeled "Selected cases (click the plus sign)" covers the "Cases" section. At the bottom, a red box highlights a crosstab table:

	mental-emotional wellbeing	Total
Acacia A	2	2
Acacia B	0	0
Acacia L	1	1
Acacia V	0	0
Correa C	2	2
Correa P	0	0
Total	5	5

A large orange box at the bottom center is labeled "Your results".

Exploring Codes (Windows)

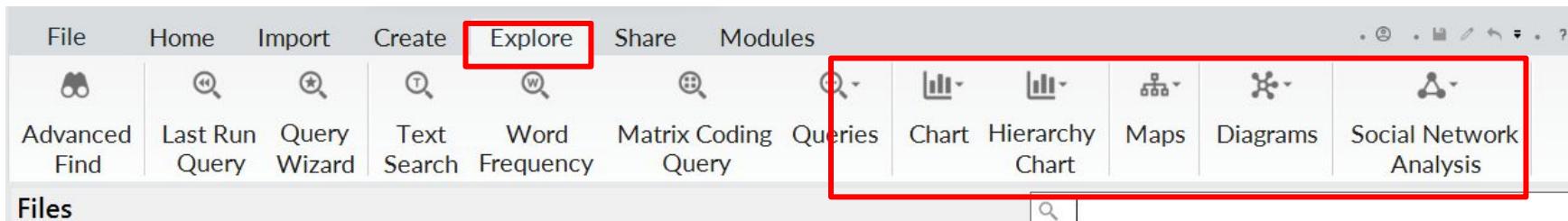
Chart: bar chart of the number of times codes were used in a file

Hierarchy chart: visualizes number of codes used in a file

Explore Diagram: explore the codes used in a file

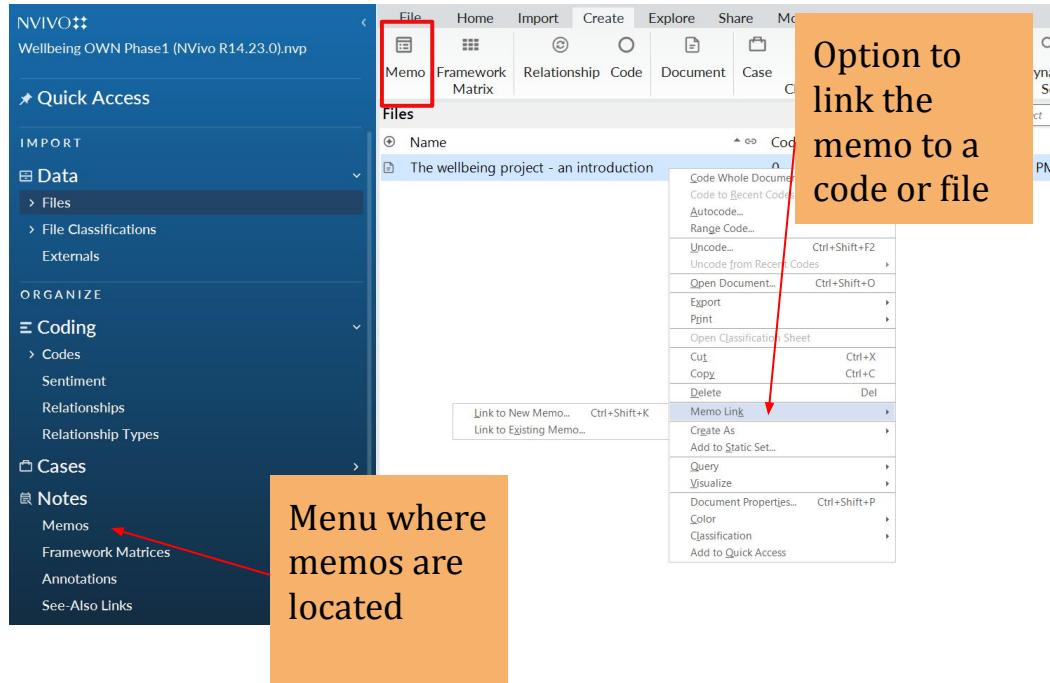
Comparison Diagram: compare the codes used in multiple files

Social Network Analysis: visualize relationships within networks



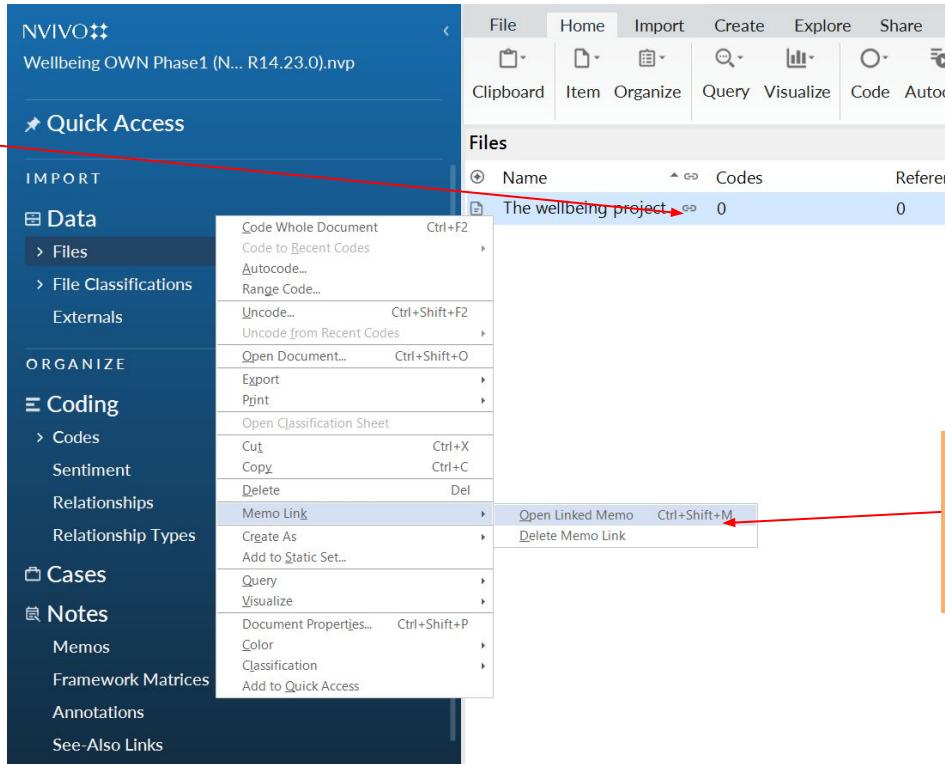
Memos (Windows)

- Memos are more extended write-ups of your analytical insights
- They can stand alone, but also be linked
- “Memo link”: linking memo to a particular file, case, or code



Memo Links (Windows)

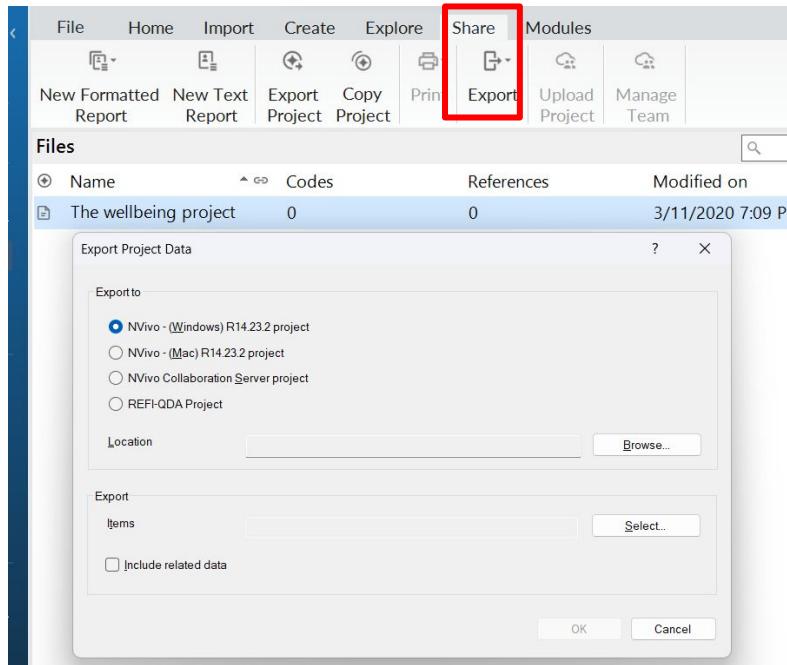
Showing the link between the file and the memo



Accessing the memo from the file

Exporting Your Project (Windows)

Since there is a cross-platform problem, **save and export your projects as .qdpx** files when submitting assignments so they can be opened on both Macs and Windows!



Further Learning & Practice

Qualitative Coding practice

Read Martin Luther King Jr's "Letter from Birmingham Jail"

- Come up with three themes you might want to highlight from this text; these themes should be about 1-3 words (ex: “police brutality”)
- Underline the moments in the passage that reflect these themes.
- Try to recreate this schema in NVivo!

Ethical Considerations

- **Contextual Privacy**
 - When we think about privacy online we want to think of it as contextual. What someone might be comfortable saying in one context might not be something they're okay saying to a researcher.
- **Keeping People Safe**
 - It is risky to publicize the username, profile picture, or exact text of a social media post or profile.
 - To show example posts etc, you can make up your own or heavily redact them.

What information would you be comfortable sharing?

Learning Resources

- [Handout: Data Privacy](#)
- [Handout: Data Ethics](#)
- [Handout: Installing NVivo](#)
- [Handout: NVivo](#)
- [Handout: Troubleshooting Text Analysis](#)

Thank you!

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