

Introduction to Nvivo: Qualitative Coding for Text Analysis

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Research Methods

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Northeastern University
NULab for Texts, Maps, and Networks

*Feel free to ask questions at any point
during the presentation!*

Activity: Highlighting Themes

With a partner:

- read the sample transcript excerpt on your handouts
- come up with three themes you might want to highlight from this text; these themes should be about 1-3 words (ex: expenses, resource access)
- underline the moments in the passage that reflect these themes

We will then have a discussion about what themes you highlighted and why.



Workshop Agenda

- Workshop objectives
- Qualitative Coding: annotating and highlighting sources
- What is NVivo?
- Important vocabulary and functions
- NVivo demonstration
- Hands-on activity

Slides & handouts at <http://bit.ly/dti-fall2019-marshall-2>



Workshop Objectives

- Define qualitative coding and why it can be useful while doing research
- Understand what NVivo is as a research tool and what it can do
- Learn important NVivo-specific vocabulary to aid independent research



Qualitative Coding

In our beginning activity, we practiced a form of **qualitative coding** together.

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



What is NVivo?

NVivo is a **text analysis** and **research organization** software that is available through MyNU. NVivo provides methods for you to annotate and code documents using user-created tags (nodes/codes), summarize and visualize these codes, and organize research materials.

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

- secondary sources: scholarly articles you read for the literature review, newspaper articles, book chapters.
- primary sources: any primary sources you may be analyzing such as interview transcripts, texts, or field notes
- your own notes about your project (you can even compose in NVivo)



What can NVivo do?

NVivo is designed for qualitative coding research materials, such as survey results, interviews, audio recording, text documents, articles, and other data formats. It also has other functions:

- create projects that store, organize, and code documents/files
- provide a method for you to code your documents with a user-created coding schema (nodes)
- query, summarize, organize, and visualize information about your coding
- conduct forms of computational text analysis, like word counts, on the documents themselves



Nvivo for Annotating & Coding Research

With NVivo, you can store and organize your **primary** and **secondary** sources together (most file types work, including images). You can also separate your different types of research materials. For this project, your research materials are your interview transcriptions and survey results.

NVivo also allows you to **annotate** texts and use **qualitative coding** methods to highlight specific texts/images/pieces under themes.

Then you can **summarize** and **visualize** these annotations and codes.



NVivo is NOT cross-platform 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 (10, 11, 12) also impact which projects can be opened on which platform

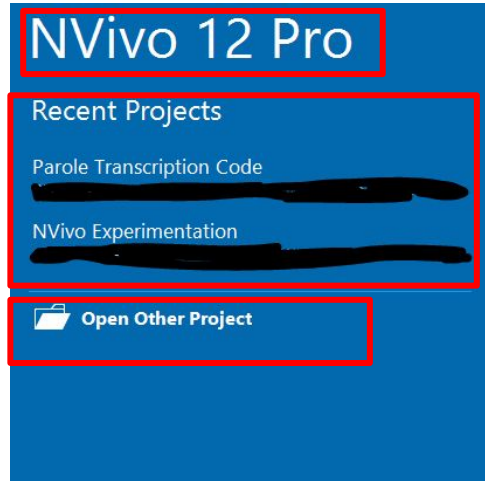


Anatomy of NVivo: Opening on Windows

Your version number (you should have version **11** or **12**)

The recent projects you opened

Open another project that is not recent



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

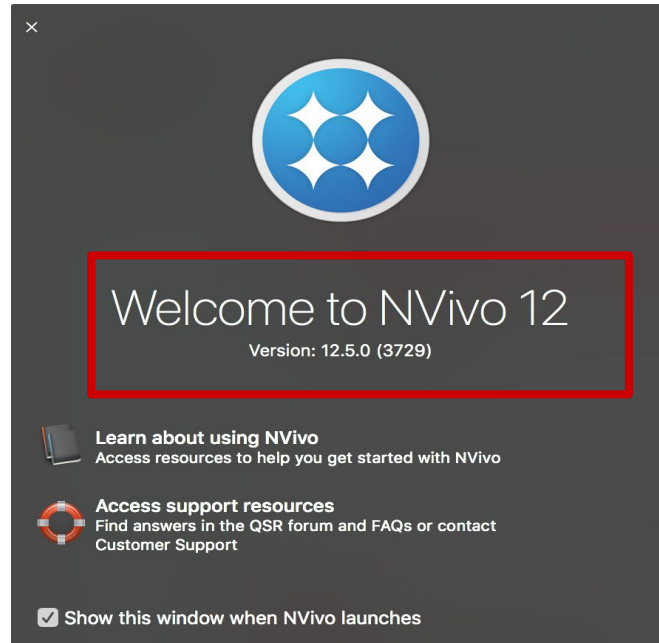


Learn and Connect



Anatomy of NVivo: Opening on Macs

Your version number (you should have version **11** or **12**)



- Create new project
Create a new project
- Create a copy of the sample project
Explore and experiment with NVivo using the sample project

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

- Parole Trans Code_...sion (NVivo 12).nvp
~/Downloads
- TEST.nvp
~/Documents
- Untitled.nvp
~/Documents
- Sample Project.nvp.nvp
~/Downloads

The recent projects you opened

Open Another Project...

Open

Open another project that is not recent

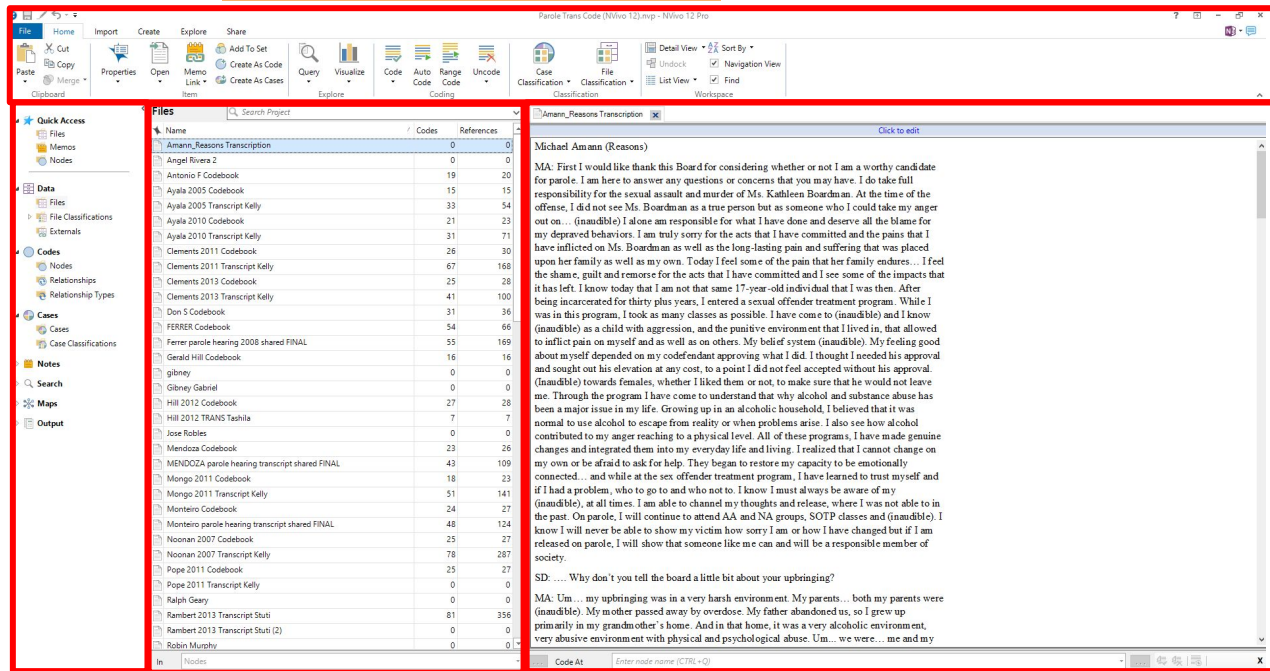


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Feel free to ask questions at any point during the presentation!

Anatomy of NVivo: Projects on Windows

Toolbar to access functions



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

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

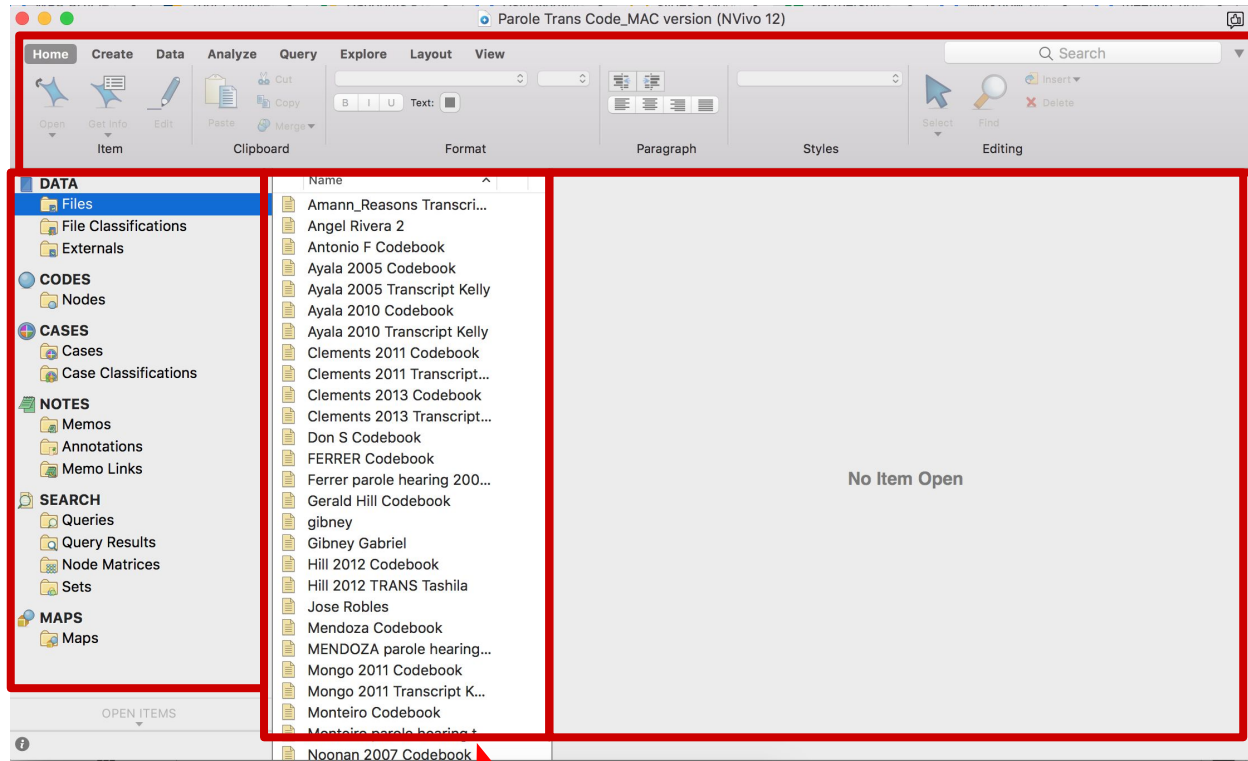
List of nodes, files, etc.



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Anatomy of NVivo: Projects on Macs



Toolbar to access functions

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

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

List of nodes, files, etc.

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NVivo Vocabulary

Full definitions available on the handout

- **Data:** your research documents & files
- **Codes:** the method to annotate the themes/concepts
- **Nodes:** the actual themes/concepts that you create
- **Relationships:** coding connections between two data
- **Cases:** units of analysis for your research.
- **Maps:** visualization tool to see connections between the cases and nodes
- **Query:** a flexible way to explore and analyze your files, cases, and nodes

items



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Demonstration

Using the sample transcript from the handout and another sample transcript excerpt, we will quickly show you how to input the documents, code, and visualize your codes!

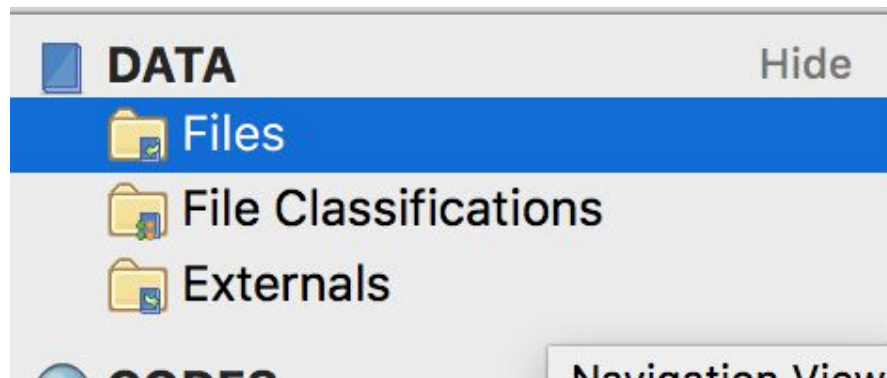
You don't need to follow along at this moment—you will have a chance to explore NVivo later. If you would like, though, the transcripts are available for download at

<http://bit.ly/dti-fall2019-marshall-2>



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

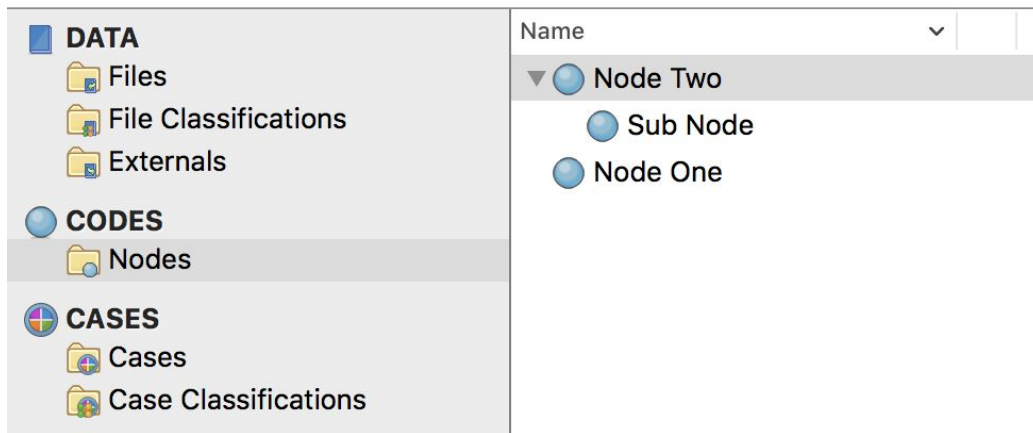
NVivo can import all types of files, including .docx, .pdf, .doc, .csv, .png, .jpeg, .txt, video/audio files, and more.

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.



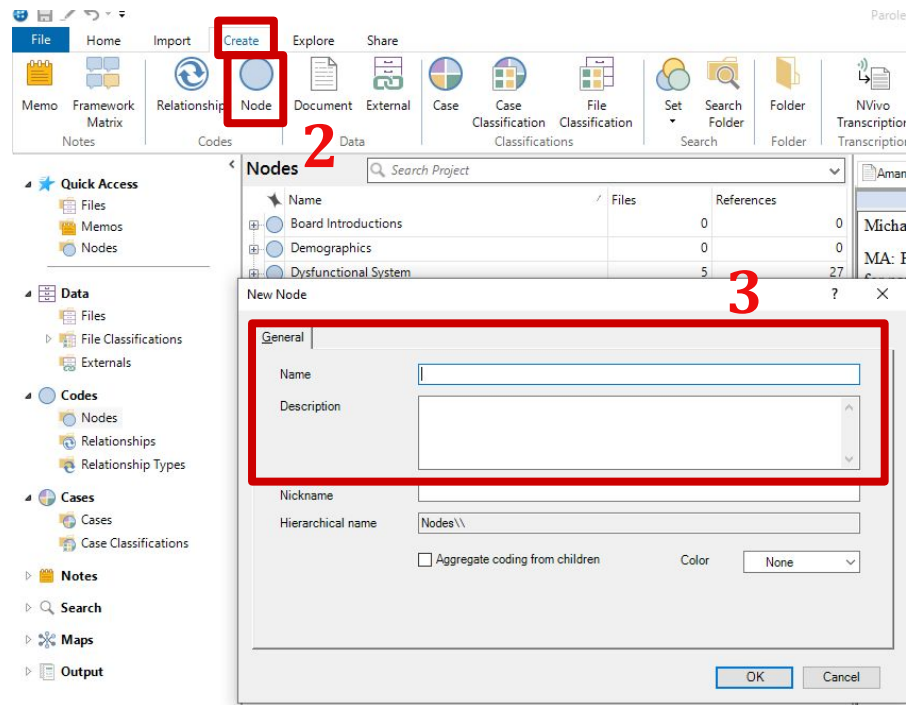
Codes and Nodes

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



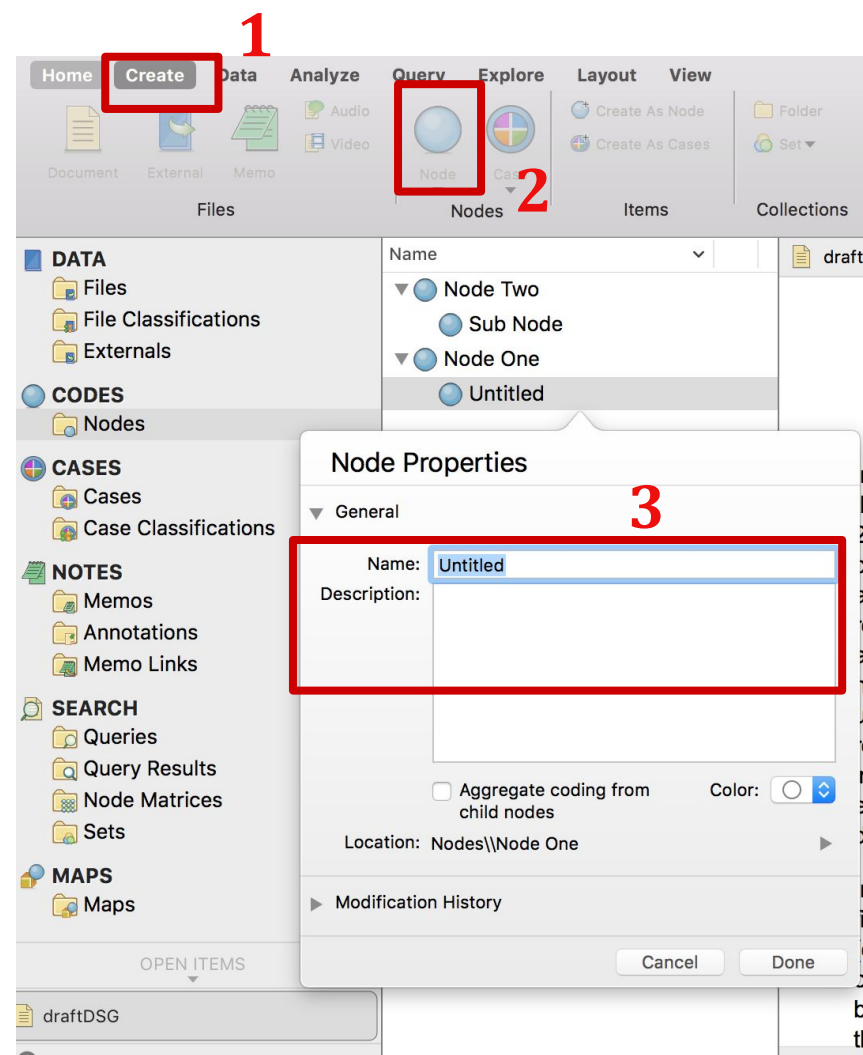
Creating Nodes (Windows) 1

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



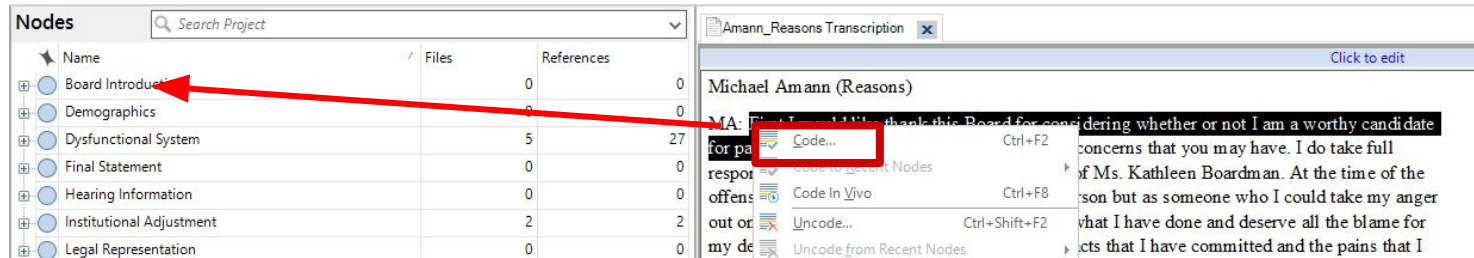
Creating Nodes (Macs)

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



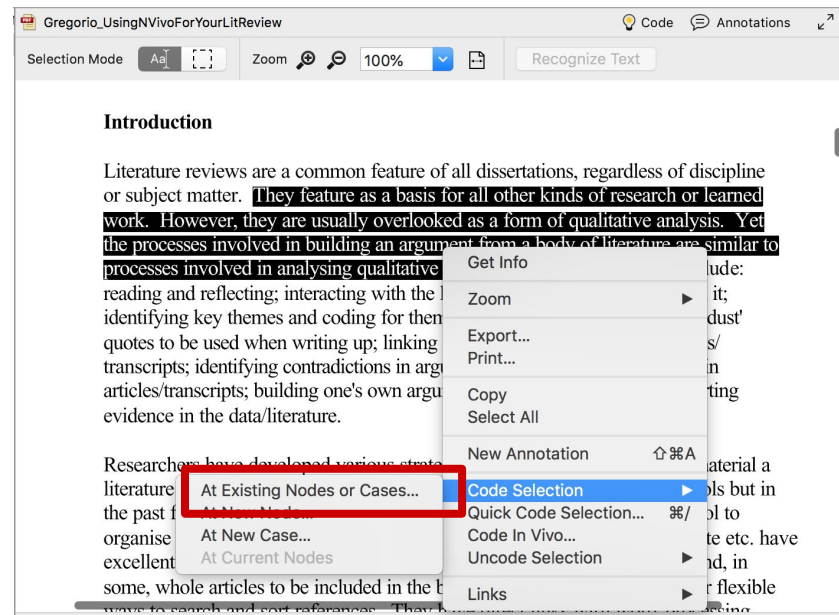
Coding Files/Documents (Windows)

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 node
4. Alternatively, you can Command/Control+click and select “Code”
5. You can also add new nodes/cases as you annotate



Coding Files/Documents (Macs)

1. Open the file you would like to annotate
2. Highlight the text you want to code
3. Command/Control+click and go to “Code Selection”
4. Click “At Existing Nodes or Cases”
 - a. Once you use nodes, the nodes will show up when you click “Code Selection”
 - b. You can also add new nodes/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. Simply choose “Coding for Selected Items”

The screenshot displays the NVivo 12 Pro software interface. A red box labeled '1' highlights the 'Document Tools' menu in the top toolbar. Another red box labeled '2' highlights the 'Highlight' button within this menu. A third red box labeled '3' highlights the 'Coding Stripes' button. Below these, a dropdown menu shows 'All Coding' selected. On the left, the 'Coding Stripes' pane lists various codes, with 'All Coding' at the top. The main document window shows a transcript with several lines of text highlighted in yellow, corresponding to the codes listed in the pane. A red box highlights a specific section of the transcript: 'C- 20 years have gone by. So I know, when I look at your record, I should see some significant changes in a 15-year-old boy that did that crime. That has painted that particular area, and those individuals in that area, in the Boston, Dorchester, and Roxbury community. I know that you've done significant programming since then, right? You've changed your life.'

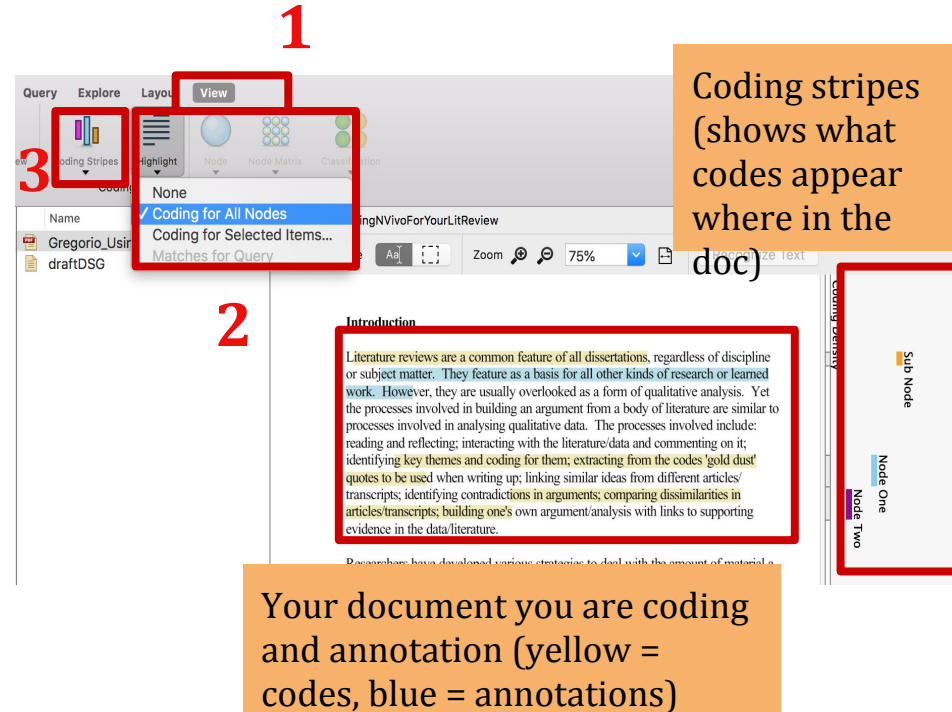
Coding stripes
(shows what codes
appear where in
the doc)

The document you are coding and annotations



View Your Codes (Macs)

1. Go to “View” in the toolbar
2. Click “Highlight” then “Coding for All Nodes”
3. Click “Coding Stripes” and “All Nodes 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. Simply choose “Coding for Selected Items”



The screenshot shows the NVivo software interface. A red box labeled '1' highlights the 'View' menu in the top toolbar. A red box labeled '2' highlights the 'Highlight' option in the 'View' menu. A red box labeled '3' highlights the 'Coding Stripes' option in the 'Highlight' submenu. The main document window shows a text document with yellow highlights and blue annotations. A red box labeled '2' highlights a section of the document titled 'Introduction'. On the right side, a vertical sidebar shows a list of nodes: 'Sub Node', 'Node One', and 'Node Two'. A red box labeled '2' highlights the 'Node One' and 'Node Two' entries in the sidebar. An orange text box on the right says 'Coding stripes (shows what codes appear where in the doc)'. Another orange text box at the bottom right says 'Your document you are coding and annotation (yellow = codes, blue = annotations)'.

1

2

3

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

2

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



Annotating Files (Windows)

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

The screenshot shows the software interface with the following components:

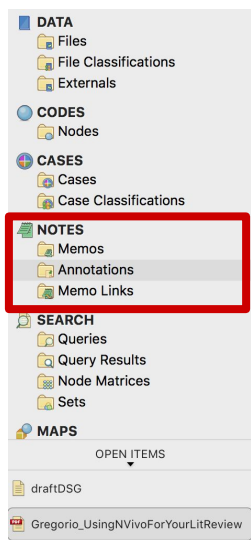
- Left Menu:** A sidebar with a 'Quick Access' section containing 'Files', 'Memos', and 'Nodes'. Below this is a 'Data' section with 'Files', 'File Classifications', and 'Externals'. The 'Codes' section includes 'Nodes', 'Relationships', and 'Relationship Types'. The 'Cases' section includes 'Cases' and 'Case Classifications'. The 'Notes' section, which is highlighted with a red box, contains 'Memos', 'Framework Matrices', 'Annotations', and 'See Also Links'. At the bottom are 'Search', 'Maps', and 'Output'.
- Annotations List:** A table titled 'Annotations' with a search bar and columns 'File Name' and 'Number'. It lists 'Amann_Reasons Transcription' with the number '1'. This table is highlighted with a red box and labeled 'List of annotations'.
- Document View:** A window titled 'Amann_Reasons Transcription' with a 'Click to edit' button. It contains a text document with several lines of text. A portion of the text is highlighted in orange and labeled 'The text from the document you highlighted and are annotating'. Below the text, there is an 'Annotations' table with columns 'Item' and 'Content'. It shows one annotation with 'Item' 1 and 'Content' 'This is an annotation'. This table is highlighted with a red box and labeled 'Your annotation'.
- Annotation Description:** An orange box labeled 'Where you can find all your annotations listed' points to the 'Annotations' section in the left menu.



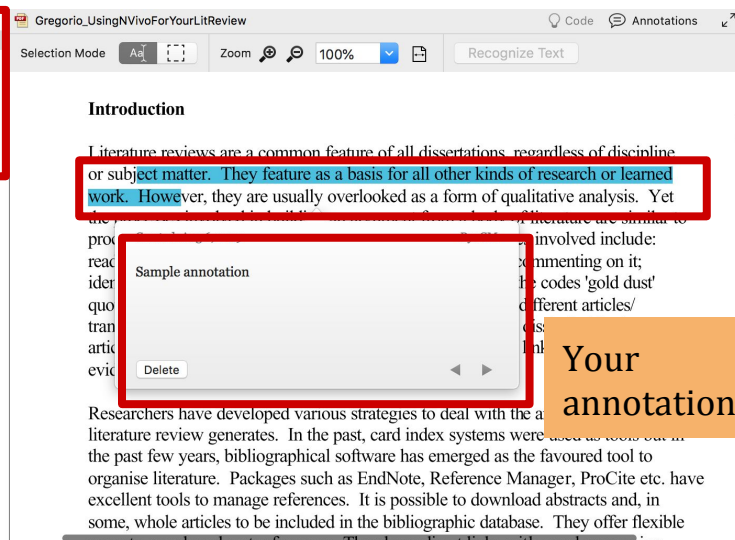
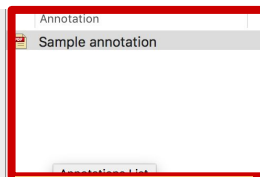
Annotating Files (Macs)

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

Where you can find all your annotations listed



List of annotations



The text from the document you highlighted and are annotating

Your annotation

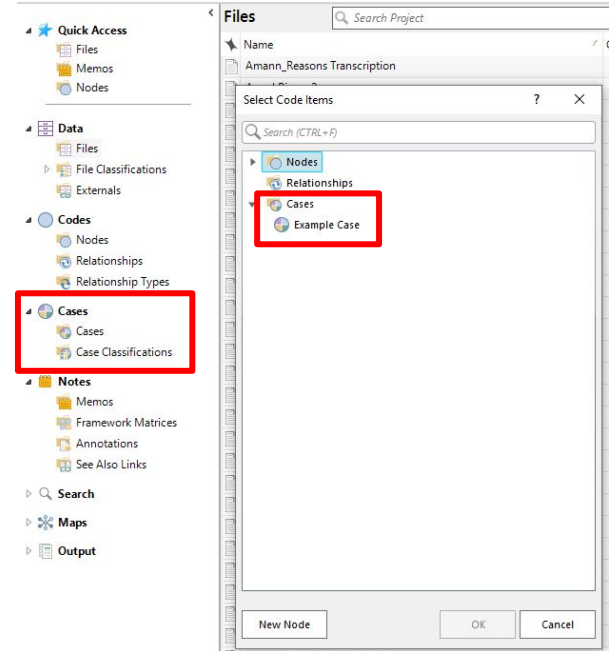


Cases (Windows)

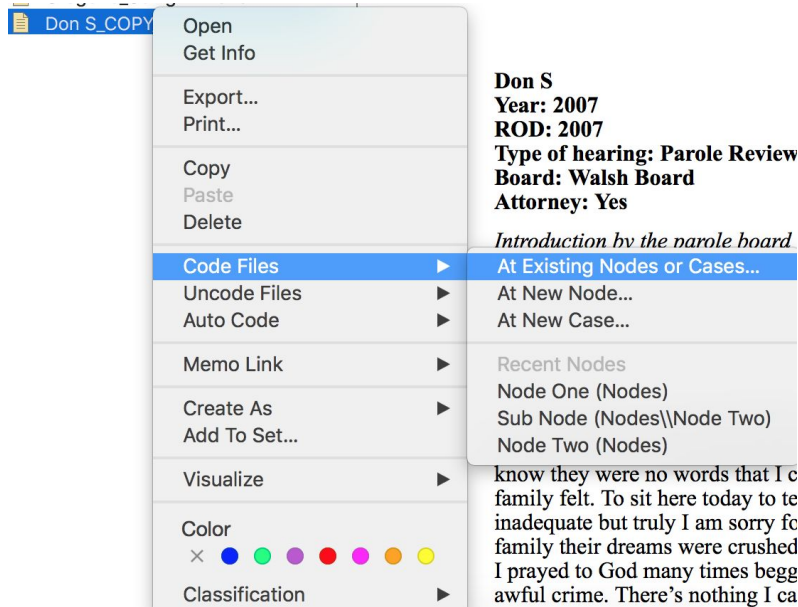
Cases are the types of research texts in your project; they can be organized based on your selections. **“They might represent people, places, events, organizations or other entities that you want to analyze and compare.”** For example, if you have several transcripts from different trials, but want 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 node, except you choose the “Cases” folder and the proper case.



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



Cases (Macs)



Querying

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

- **Word Frequency:** Counts the number of times words (with stopwords removed) appear in one or more files
- **Coding:** Shows the number of codes, the text that was coded, and the files
- **Crosstab:** cross-references nodes and case classifications. For example, you might want to know how often a particular node appears in both scholarly articles and your primary texts.



Word Frequency Example (Windows)

“Query” can be found in the
“Explore” Tab

Alternatively, you can
Command/Control+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”

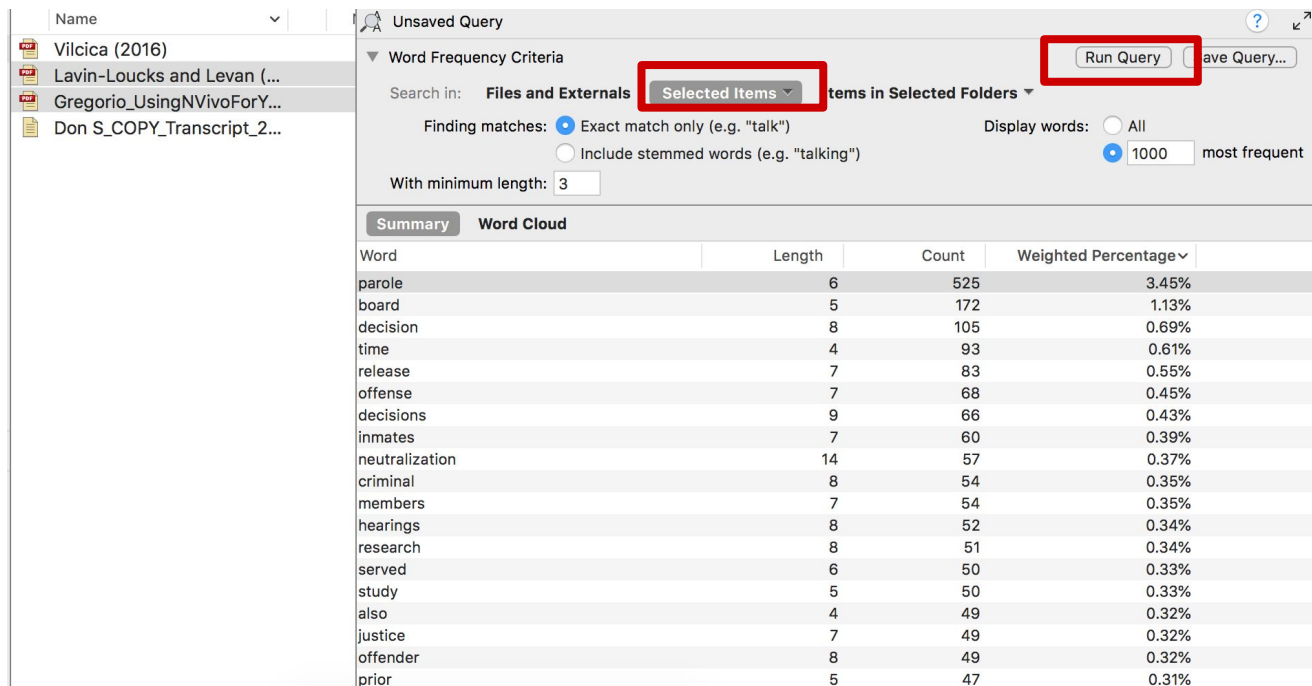
The screenshot shows the NVivo 12 Pro software interface. The 'Explore' tab is selected in the top navigation bar. The 'Files' pane on the left lists various documents, with 'Query' highlighted. The 'Word Frequency Query Results' window is open, showing the 'Selected Items...' tab. The 'Run Query' button is highlighted in the top right corner of the results window. The results table displays the following data:

Word	Length	Count	Weighted Percentage (%)
time	4	13	1.40
inaudible	9	12	1.29
know	4	11	1.18
mean	4	10	1.08
assault	7	8	0.86
feel	4	8	0.86
care	4	6	0.65
codependant	11	6	0.65
around	5	6	0.65
around	4	6	0.65
around	6	6	0.65
around	5	6	0.65
around	4	6	0.65
around	6	5	0.54
around	8	5	0.54



Word Frequency Example (Mac)

Select the items you would like to query in the “Selected Items” tab and then click “Run Query”



Word	Length	Count	Weighted Percentage
parole	6	525	3.45%
board	5	172	1.13%
decision	8	105	0.69%
time	4	93	0.61%
release	7	83	0.55%
offense	7	68	0.45%
decisions	9	66	0.43%
inmates	7	60	0.39%
neutralization	14	57	0.37%
criminal	8	54	0.35%
members	7	54	0.35%
hearings	8	52	0.34%
research	8	51	0.34%
served	6	50	0.33%
study	5	50	0.33%
also	4	49	0.32%
justice	7	49	0.32%
offender	8	49	0.32%
prior	5	47	0.31%



Cross Tab Example

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

The screenshot shows a web interface for running a query. At the top, there's a table titled 'Unsaved Query' with columns: Nodes, Primary Text, Scholarly Article, and Total. The table has two rows: 'Sub Node' and 'Total'. The values are: Sub Node (2, 8, 10) and Total (2, 8, 10). To the right of the table is a 'Query' tab with a 'Run Query' button. Below the table is a large orange box labeled 'Your results'. To the right of the 'Run Query' button is a 'Results' tab with 'Save Query...' and 'Save Results...' buttons. Below the 'Results' tab are two panels: 'Nodes' and 'Cases'. The 'Nodes' panel has a plus sign and a minus sign. The 'Cases' panel has a plus sign and a minus sign. The 'Cases' panel is selected, showing 'Primary Text' and 'Scholarly Article' with plus signs next to them.

Nodes	Primary Text	Scholarly Article	Total
Sub Node	2	8	10
Total	2	8	10

Query | **Results**

Run Query | Save Query... | Save Results...

Nodes

Sub Node

+ -

Show node against

Attributes | **Cases**

Cases

Primary Text
Scholarly Article

+ -

Your results

Selected nodes (click the plus sign)

Selected cases (click the plus sign)



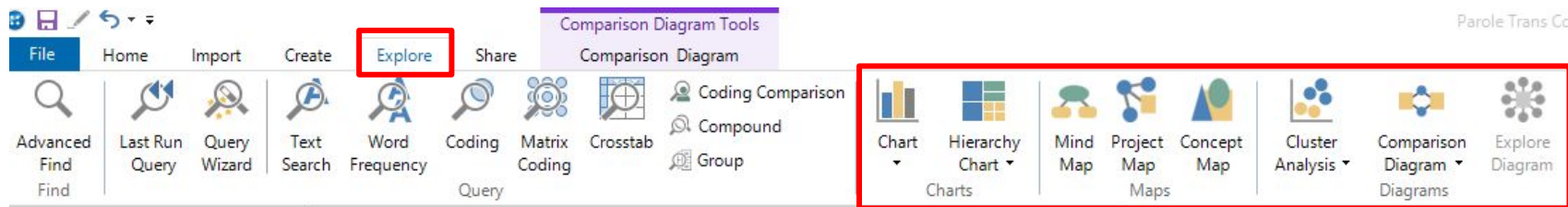
Exploring Codes (Windows)

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

Hierarchy chart: visualizes number of codes used in a file

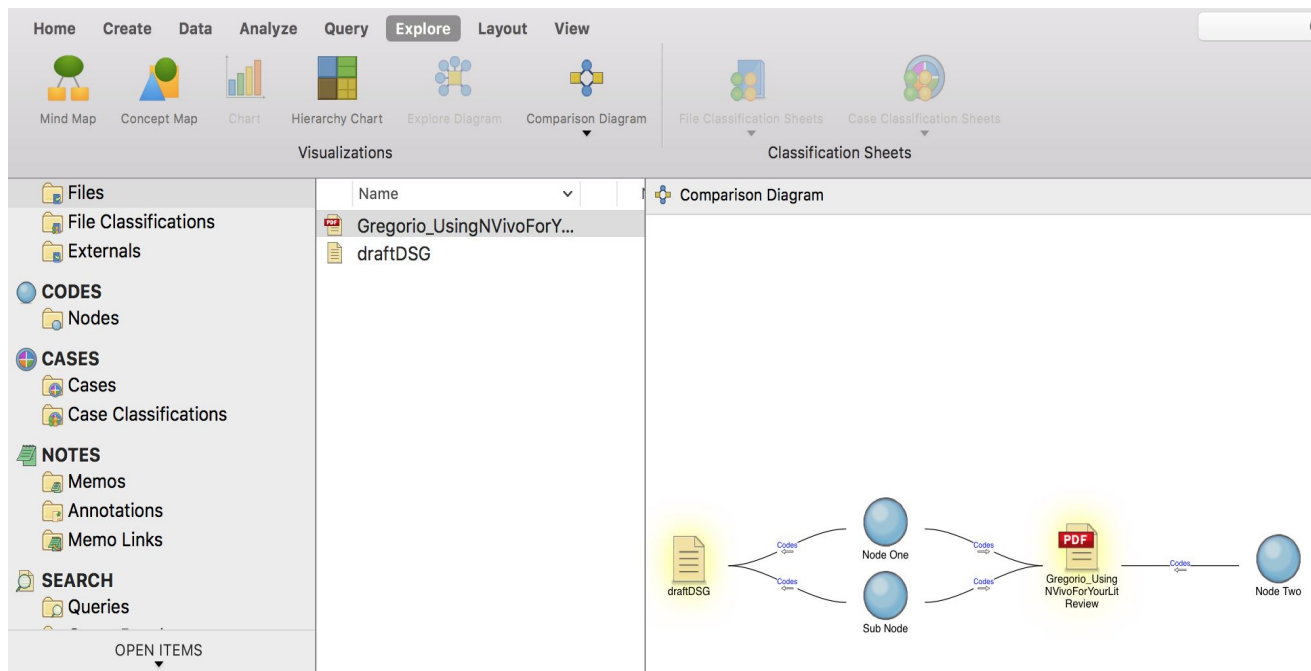
Explore Diagram: explore the codes used in a file

Comparison Diagram: compare the nodes used in multiple files



Exploring Codes (Macs)

Comparison
diagram
example



Qualitative Coding is about *Interpretation and Arguments*

The nodes you create are **arguments** themselves; you are choosing what information you value and want to extract from the transcripts



Showing and Interpreting your work

You can take **screenshots** or save your results from queries to show your work as you're researching, organizing, annotating, and coding your sources.

Use these results to emphasize your argument.

For example, if you're interested in understanding food access at Northeastern, you might look at how often did your interviewee mention food. How is food mentioned? What are the connections between food and first year experiences?



Your Turn

Using your interview transcripts, practice:

- inputting the documents
- creating nodes/cases
- coding the documents
- visualizing your codes

Find these slides at <http://bit.ly/dti-fall2019-marshall-2>



Group Discussion

- What did you find surprising or interesting in your exploration of the tool?
- What are some challenges you faced? How might you work with these as you move forward?
- How else might you use NVivo in your future studies/career?



Thank you!

If you have any questions, contact us at:

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Slides, handouts, and data available at <http://bit.ly/dti-fall2019-marshall-2>

Office hours for help with NVivo: **Tuesdays, 1–3PM in 401 Nightingale Hall**



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