

Introduction to Nvivo: Text Analysis for Research Projects

Cara Marta Messina & Garrett Morrow
Civil Wars, Insurgencies, and Violent
Non-State Actors in World History
Katherine Luongo
Fall 2019



Activity: Highlighting Themes

With a partner:

- read the excerpt from 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.



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-luongo>



Workshop Objectives

- Understand what qualitative coding is and why it can be useful while doing research
- Understand what NVivo is as a research tool and what it can do
- Learn the differences between NVivo file types and why knowing this is important
- 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 highlight in a primary/secondary source. Then, you go through all your 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 MyNEU. 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 a letter, field notes, or a document from an archive
- your own notes about your project (you can even compose in NVivo)



Nvivo for Annotating & Coding Sources

With NVivo, you can store and organize your **primary** and **secondary** sources together (most file types work, including images).

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.



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 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 (10, 11, 12) also impact which projects can be opened on which platform

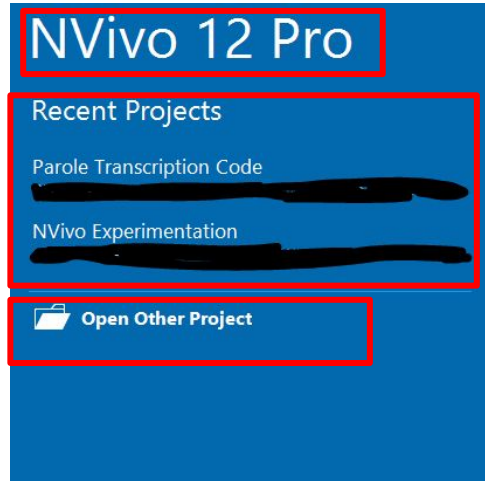


Anatomy of NVivo: Opening on Windows

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)

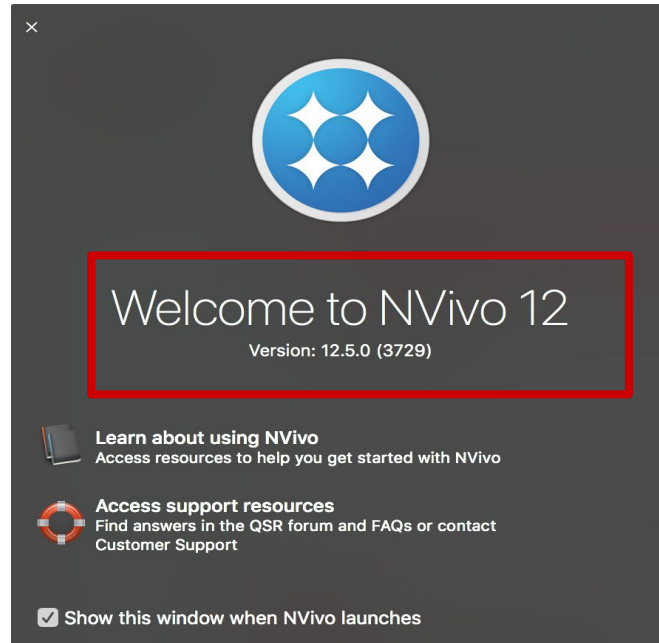


Learn and Connect



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

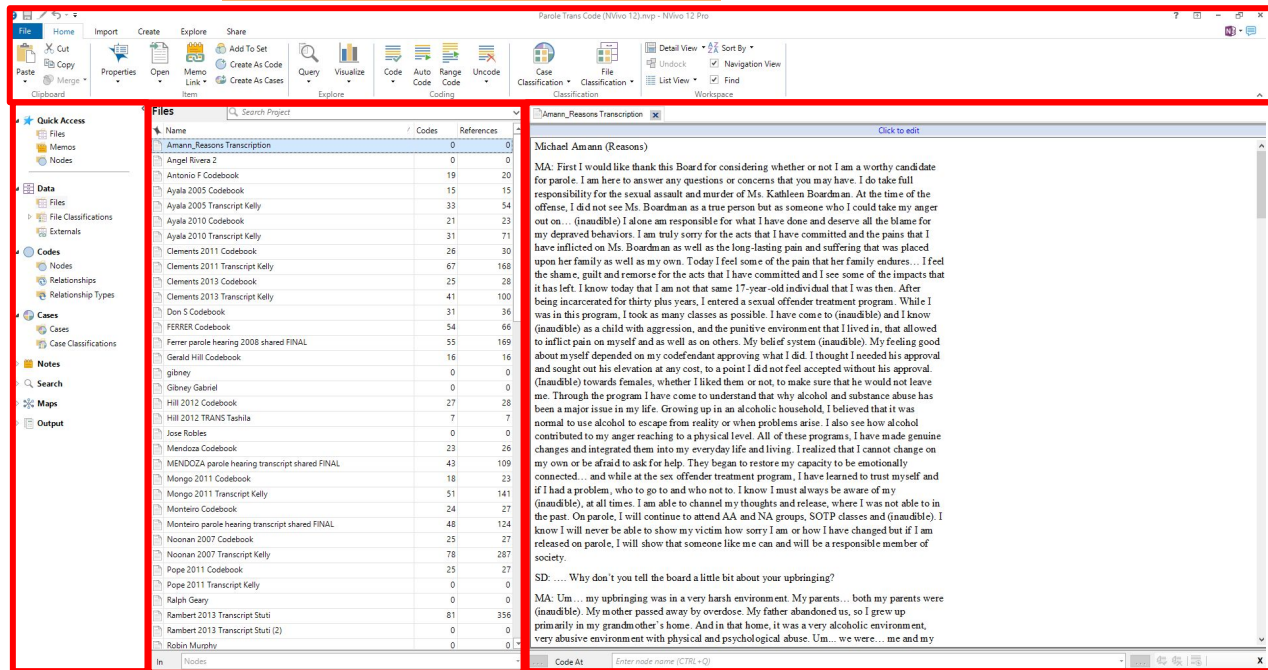


Northeastern University
NULab for Texts, Maps, and Networks

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.

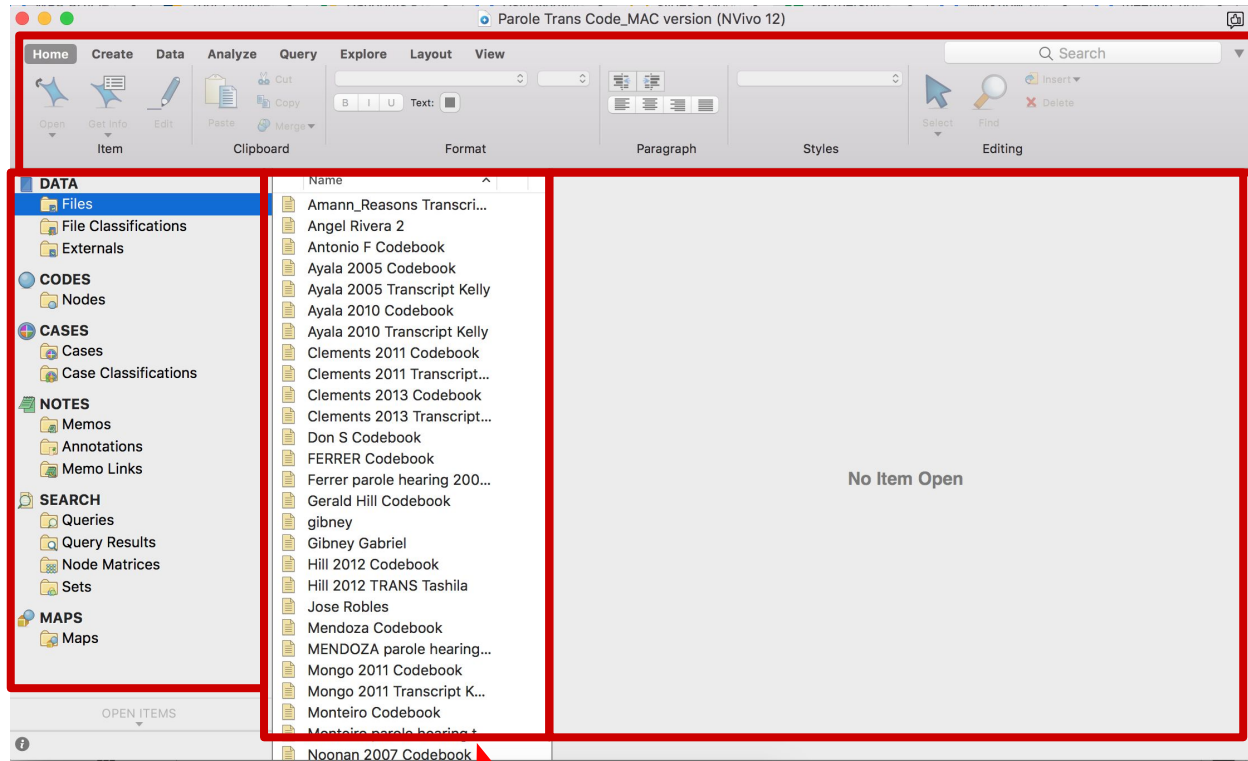
List of nodes, files, etc.



Northeastern University
NULab for Texts, Maps, and Networks

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

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.

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



Northeastern University
NULab for Texts, Maps, and Networks

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
- **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



Northeastern University
NULab for Texts, Maps, and Networks

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

Demonstration of Tool

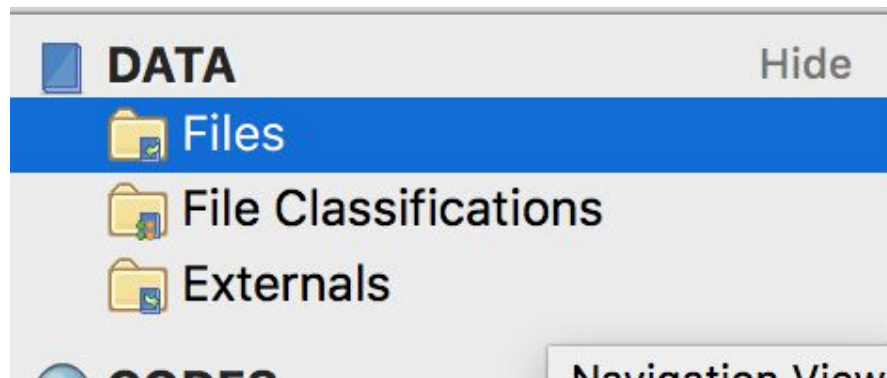
Using the sources we sent (the letter and the article), we will quickly show you how to input the documents, code, and visualize your codes!

Don't follow along at this moment—you will have a chance to explore NVivo later.



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

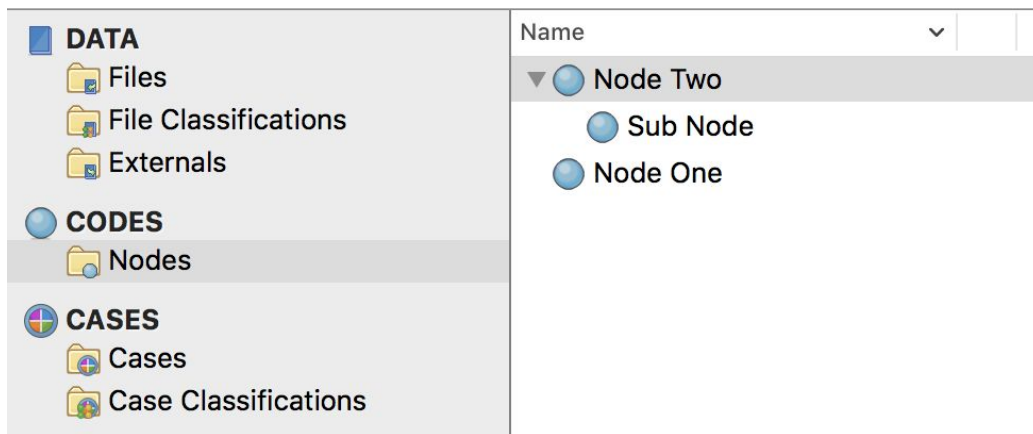
NVivo can import all types of files, including .docx, .pdf, .doc, .csv, .png, .jpeg, .txt, video/audio files, and more.

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 a useful organization and analysis tool, rather than a storage option.



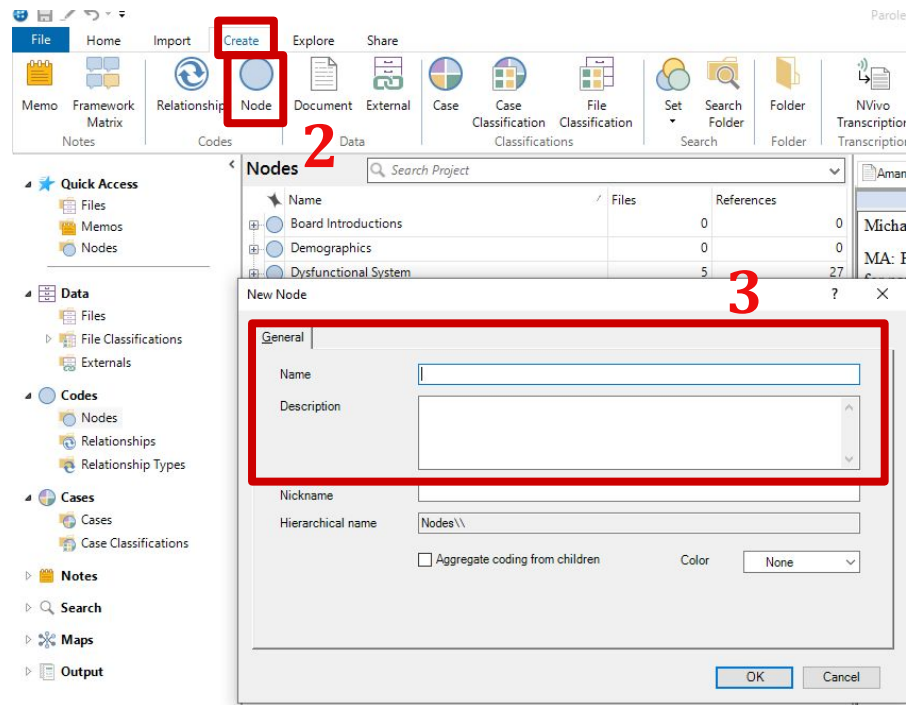
Codes and Nodes

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



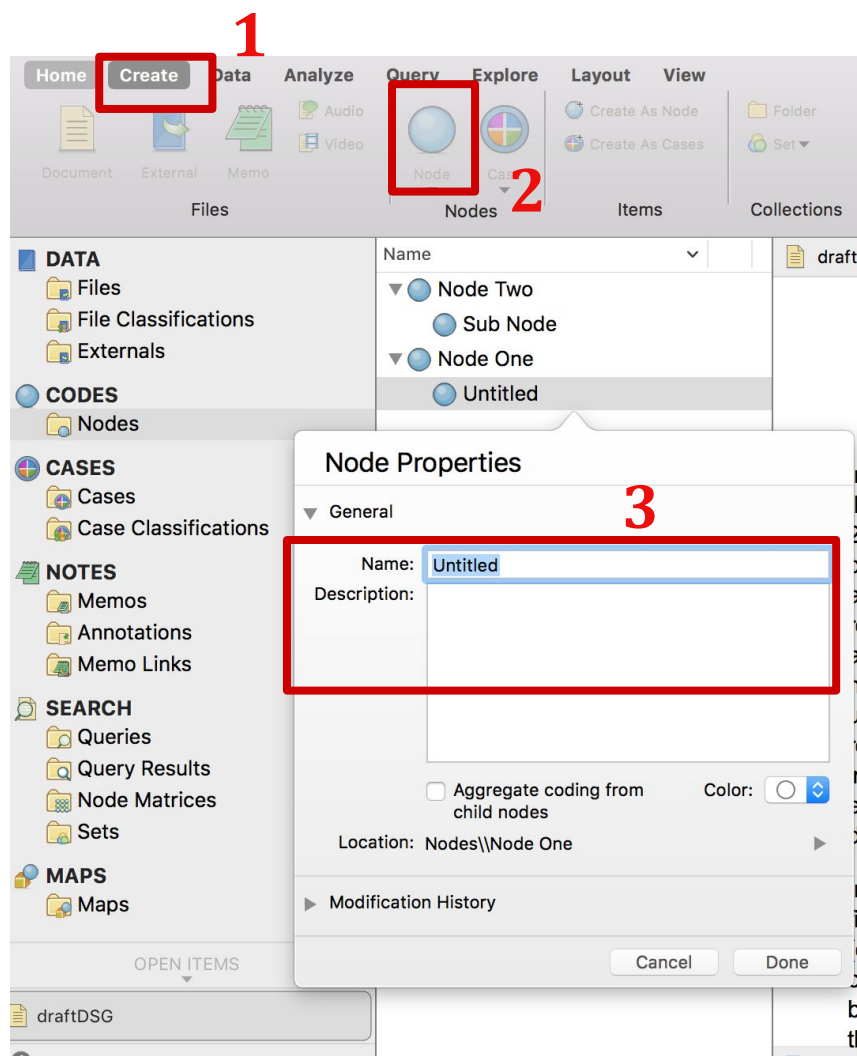
Creating Nodes (Windows) 1

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



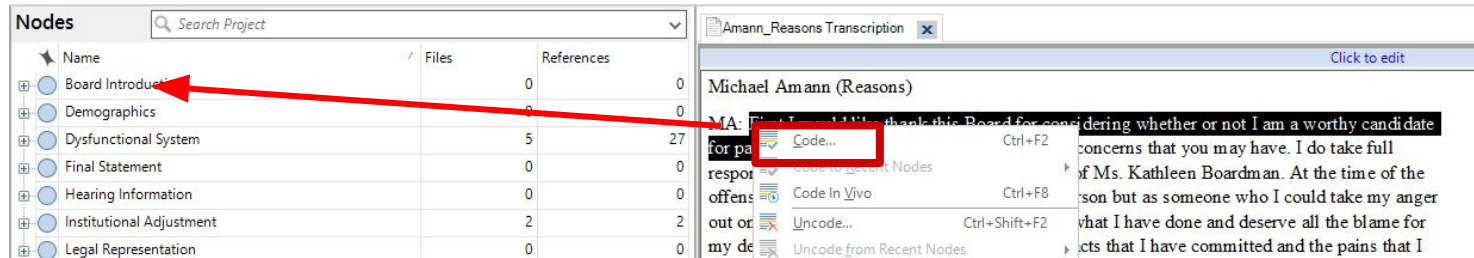
Creating Nodes (Macs)

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



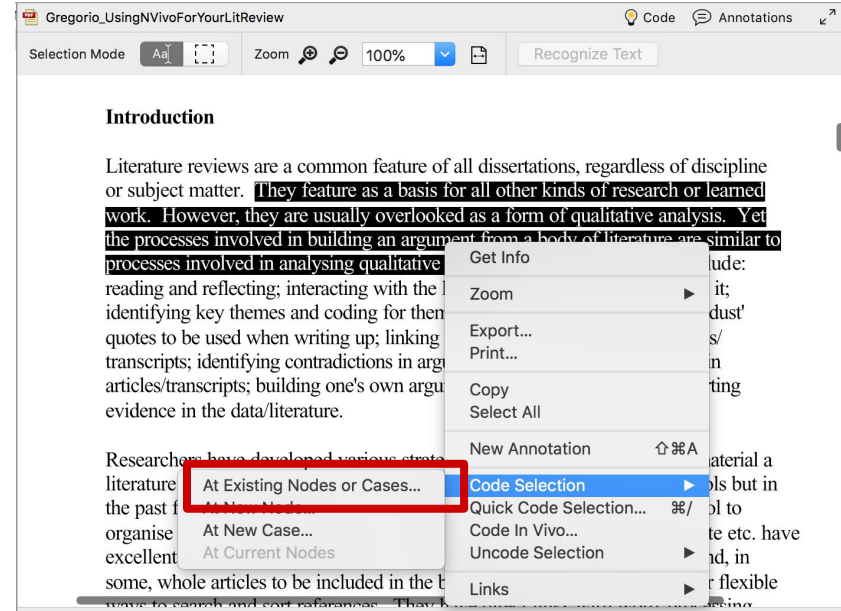
Coding Files/Documents (Windows)

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 right-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. Right 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 shows the NVivo software interface. The 'Document Tools' menu is open, showing 'Highlight' and 'All Coding'. The 'Coding Stripes' panel is visible on the left, showing a list of codes and their matches. The document text is displayed in the center, with coding stripes highlighted in yellow. The stripes are labeled with codes such as 'A- Yes', 'C- 20 years have gone by...', 'A- Um, Violence, Violence Reductions...', 'C- I don't see any sex offender treatment.', and 'A- I have not taken the sex offender treatment program...'. The 'Coding Stripes' panel on the right shows a list of codes and their matches, including 'A- Yes', 'C- 20 years have gone by...', 'A- Um, Violence, Violence Reductions...', 'C- I don't see any sex offender treatment.', and 'A- I have not taken the sex offender treatment program...'. The 'Coding Stripes' panel is also highlighted with a red box.

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 this 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 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 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 software interface with several red boxes highlighting key areas:

- Left Menu:** A red box highlights the 'Notes' section, which includes 'Memos', 'Framework Matrices', 'Annotations', and 'See Also Links'.
- Annotations List:** A red box highlights a table listing annotations. The table has two columns: 'File Name' and 'Number'. It shows one entry: 'Amann_Reasons Transcription' with the number '1'.
- Document Text:** A red box highlights a paragraph of text in the main editor. The text contains several phrases in parentheses, indicating annotations. The text is: "being incarcerated for thirty plus years, I entered a sexual offender treatment program. While I was in this program, I took as many classes as possible. I have come to (inaudible) and I know (inaudible) as a child with aggression, and the punitive environment that I lived in, that allowed to inflict pain on myself and as well as on others. My belief system (inaudible). My feeling good about myself depended on my codefendant approving what I did. I thought I needed his approval and sought out his elevation at any cost, to a point I did not feel accepted without his approval. (Inaudible) towards females, whether I liked them or not, to make sure that he would not leave me. Through the program I have come to understand that why alcohol and substance abuse has been a major issue in my life. Growing up in an alcoholic household. I believed that it was normal to use alcohol to escape from reality or when problems arise. I also see how alcohol contributed to my anger reaching to a physical level. All of these programs, I have made genuine changes and integrated them into my everyday life and living. I realized that I cannot change on my own or be afraid to ask for help. They began to restore my capacity to be emotionally connected... and while at the sex offender treatment program, I have learned to trust myself and if I had a problem, who to go to and who not to. I know I must always be aware of my (inaudible), at all times. I am able to channel my thoughts and release, where I was not able to in the past. On parole, I will continue to attend AA and NA groups, SOTP classes and (inaudible). I know I will never be able to show my victim how sorry I am or how I have changed but if I am released on parole, I will show that someone like me can and will be a responsible member of society."
- Annotations Table:** A red box highlights a small table at the bottom of the document. It has two columns: 'Item' and 'Content'. It shows one entry: '1' with the content 'This is an annotation'.

Orange callout boxes provide additional context:

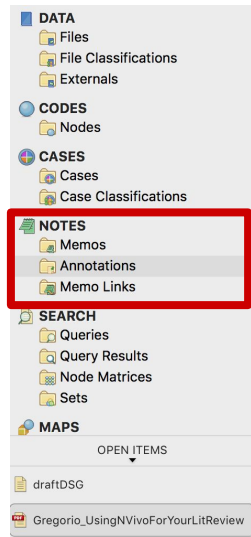
- List of annotations:** Points to the 'Annotations' list table.
- Where you can find all your annotations listed:** Points to the 'Notes' section in the left menu.
- The text from the document you highlighted and are annotating:** Points to the highlighted text in the main editor.
- Your annotation:** Points to the 'Annotations' table at the bottom of the document.



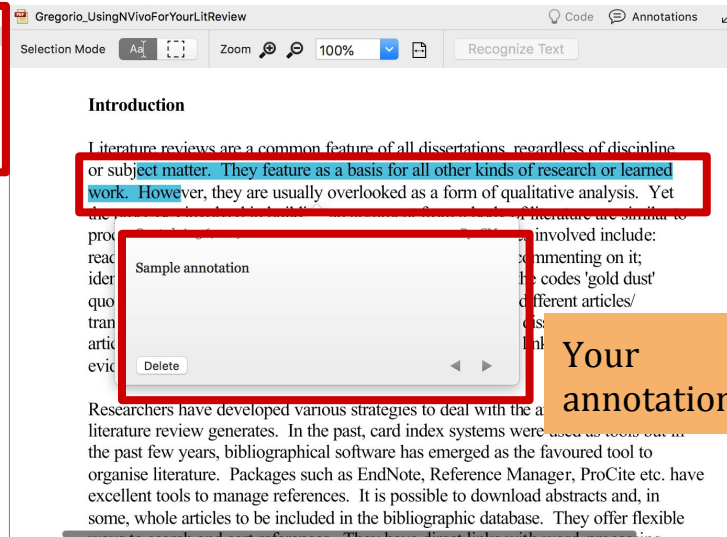
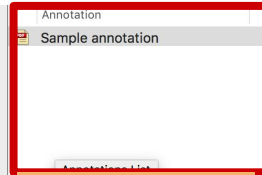
Annotating Files (Macs)

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

Where you can find all your annotations listed



List of annotations



The text from the document you highlighted and are annotating

Your annotation

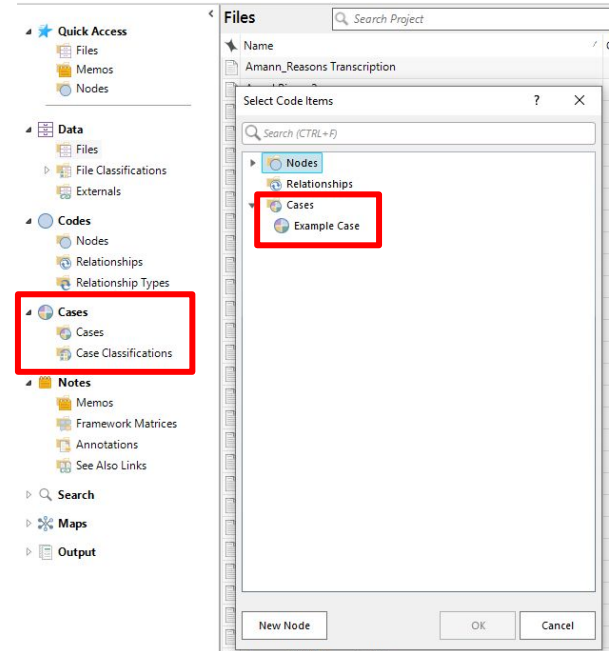


Cases (Windows)

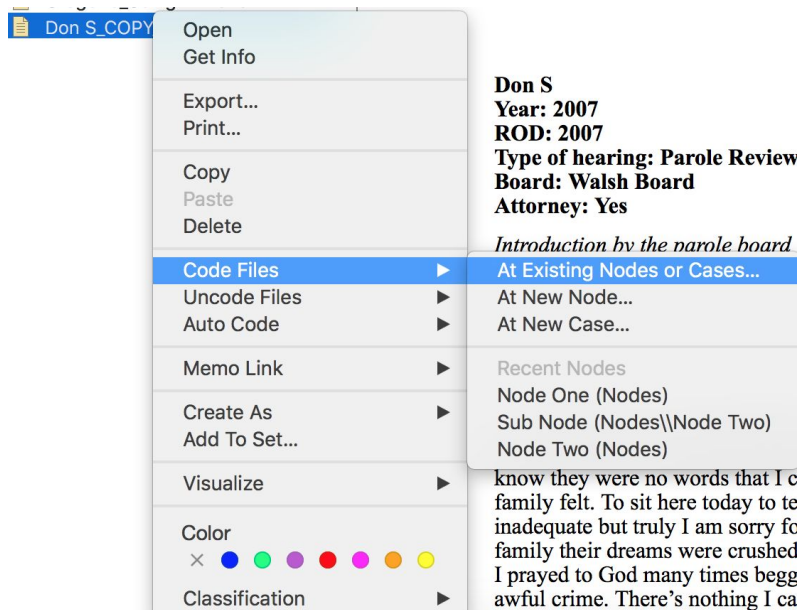
Cases are the types of research texts in your project and can be organized based on the user's choice. **“They might represent people, places, events, organizations or other entities that you want to analyze and compare.”** For example, if you have several transcripts from different trials, but want 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 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)



Query

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
- **Coding:** Shows the number of codes, the text that was coded, and the files
- **Crosstab:** cross reference 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 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”

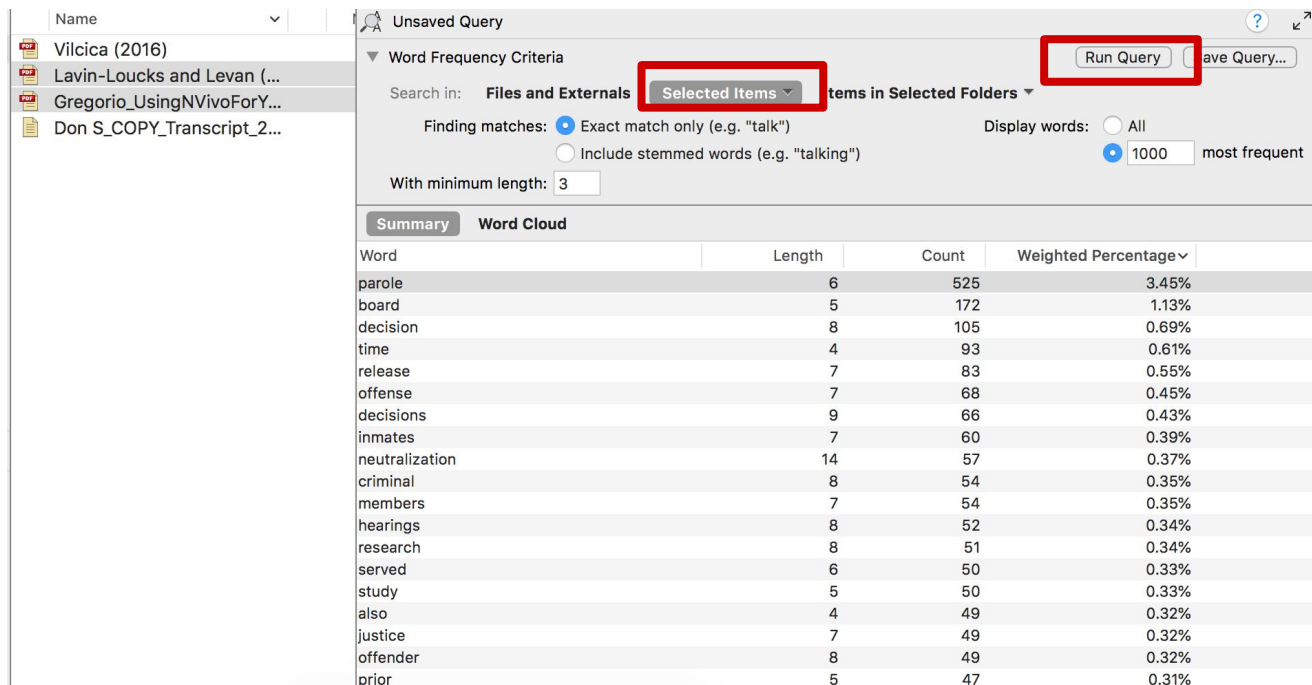
The screenshot shows the NVivo 1.2.10 software interface. The 'Explore' tab is selected in the top menu. The 'Files' list on the left contains various transcript files. The 'Word Frequency Query Results' window is open, showing the 'Selected Items' tab. The 'Run Query' button is highlighted. The results 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 application interface for running a query. At the top, there's a header 'Unsaved Query'. Below it is a table with the following data:

Nodes	Primary Text	Scholarly Article	Total
Sub Node	2	8	10
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 shows 'Sub Node' selected. The 'Cases' panel shows 'Primary Text' and 'Scholarly Article' selected. To the right of the 'Nodes' panel is an orange box labeled 'Selected nodes (click the plus sign)'. To the right of the 'Cases' panel is an orange box labeled 'Selected cases (click the plus sign)'.



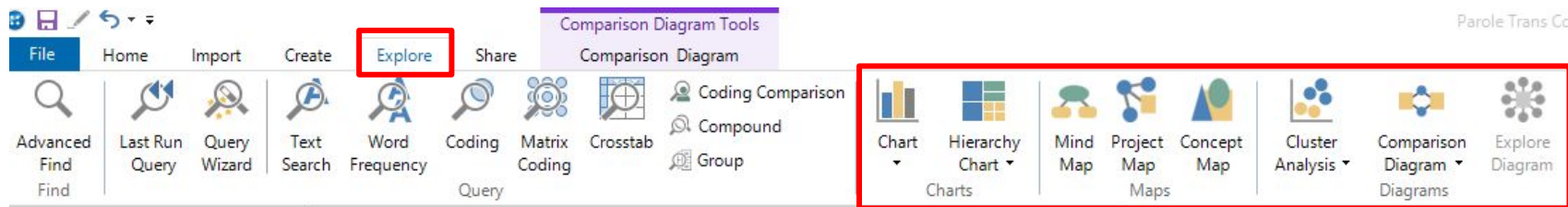
Exploring Codes (Windows)

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

Hierarchy chart: visualizes number of codes used in a file

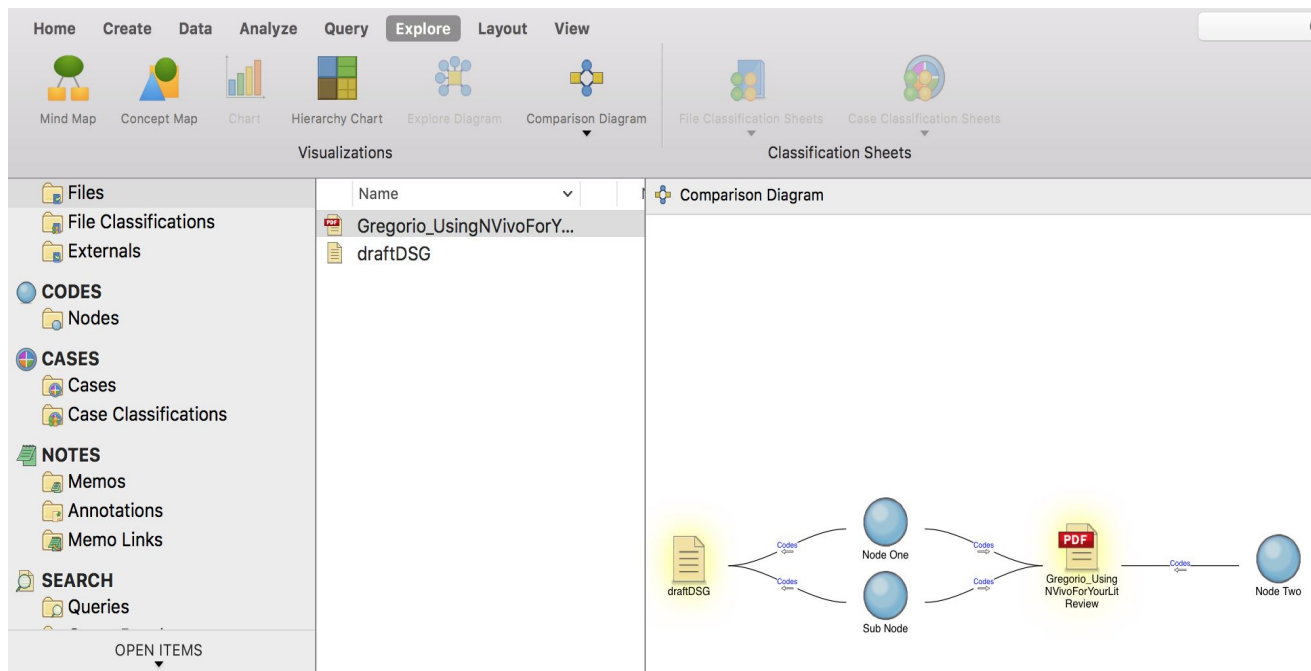
Explore Diagram: explore the codes used in a file

Comparison Diagram: compare the nodes used in multiple files



Exploring Codes (Macs)

Comparison
diagram
example



Showing your work:

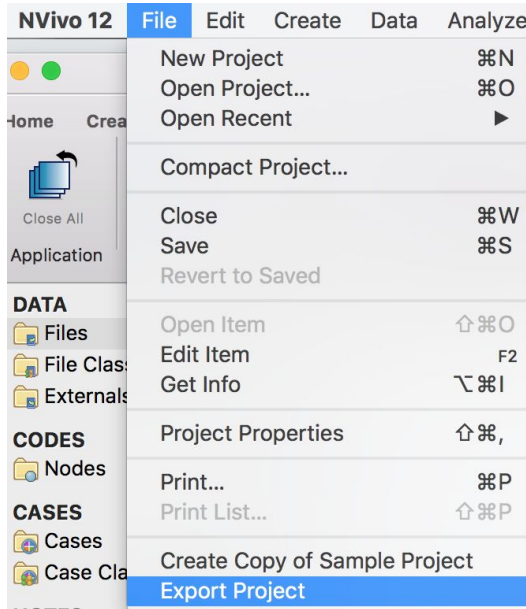
You can take screenshots or save images to show your work as you're researching, organizing, annotating, and coding your sources.



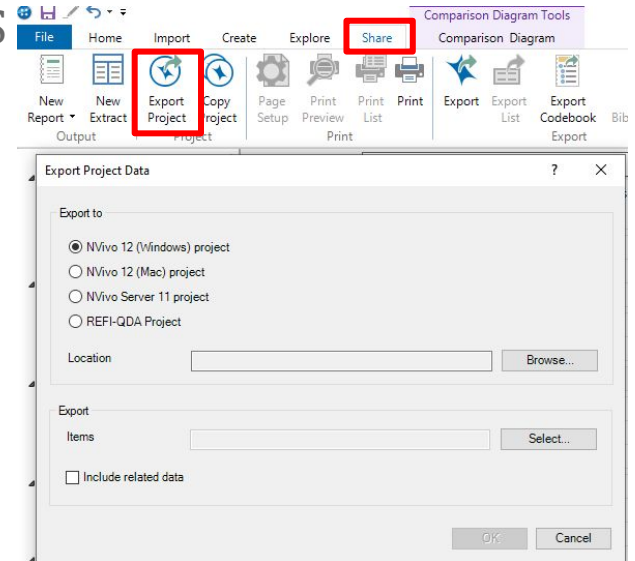
Export Your Projects

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

MACS



WINDOWS



Your Turn

Using the sources emailed to you, practice:

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

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



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:

Garrett Morrow

Digital Teaching Integration

DTI Research Fellow

morrow.g@husky.neu.edu

Cara Marta Messina

Digital Teaching Integration

DTI Assistant Director

messina.c@husky.neu.edu

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

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



Northeastern University
NULab for Texts, Maps, and Networks

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