Presentation 1

Will Krew, Yi Hyun Kwon, Vincent Chen

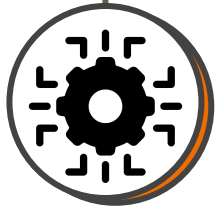# Goal of this presentation

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Define Redundancies

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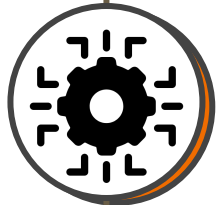
Define Redundancies

Propose Algorithms to Identify Redundancies

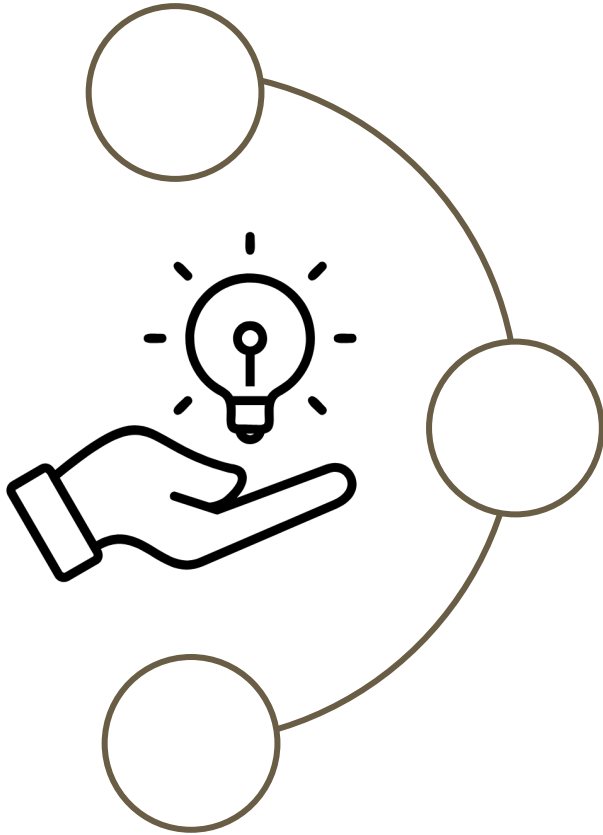# Goal of this presentation

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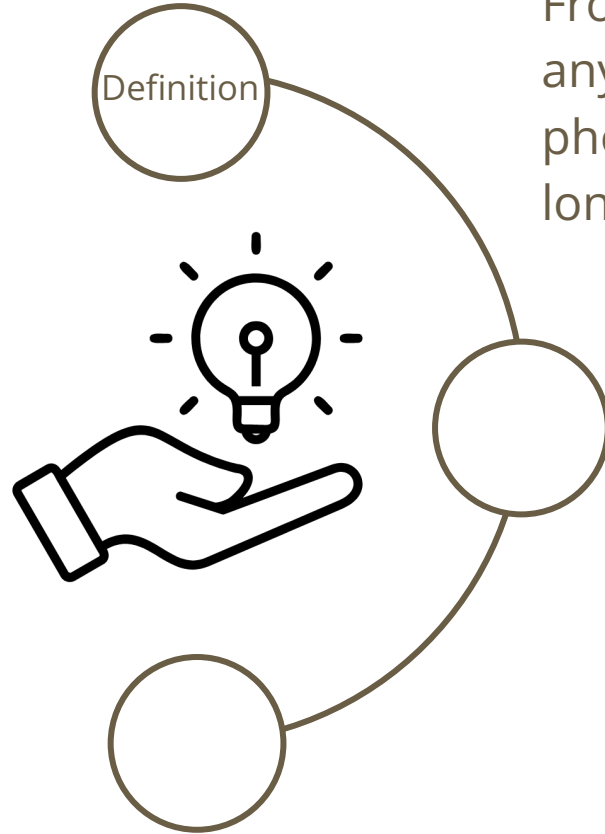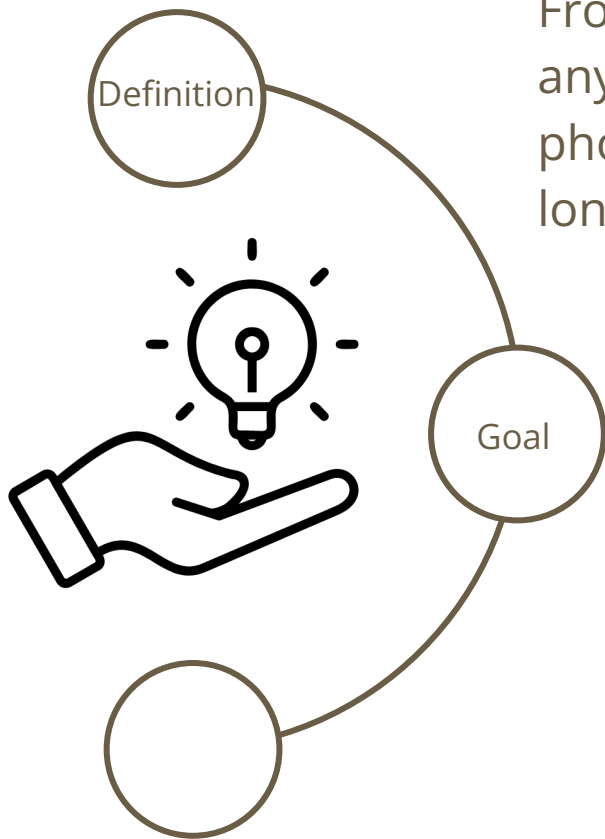Examples / Other Observations / Questions

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From the caller's perspective, redundancies are any **repeated** or **unnecessary** steps in the phone system that make it harder or take longer to get help.

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Target moments when the caller might get **confused** or **spend too much time** navigating the menu.

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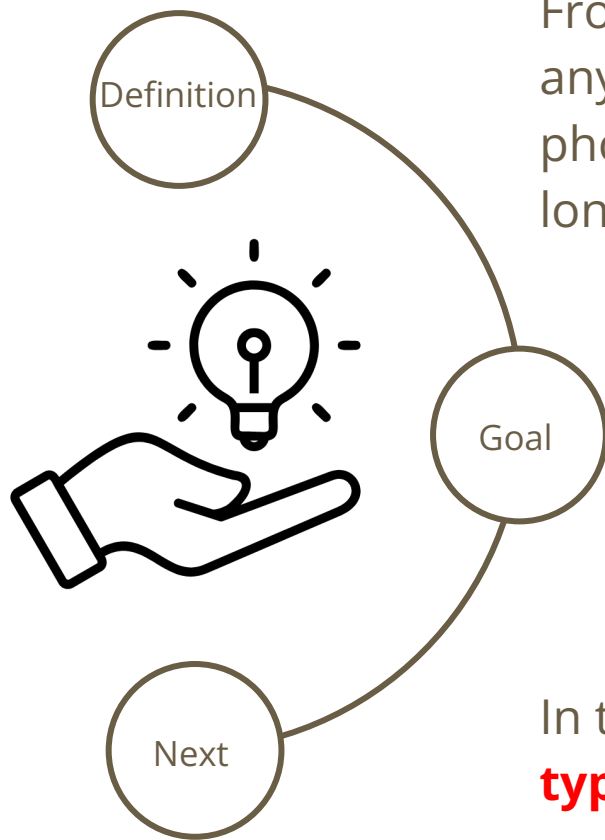
Target moments when the caller might get **confused** or **spend too much time** navigating the menu.

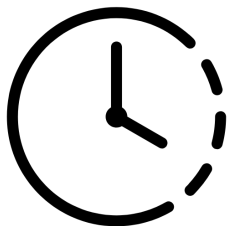In the next slide, we will look at the **specific types** of redundancies

Types of Redundancies

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Calls taking longer
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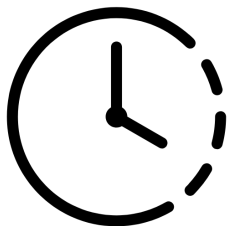
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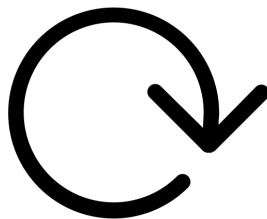
Repeated Processes
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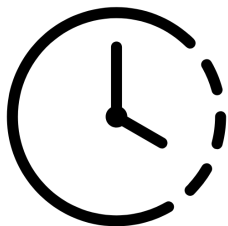
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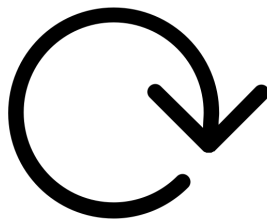
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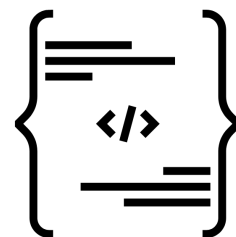
Code / Internal
Redundancies

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Subtype 1: *Node-level delay*

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Algorithm: *Long Paths*

For each given final node, calculate average times taken for each path taken to the final node, and compare.

Output: exact paths that take the most time.

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Legal Menu Prompt

If you or a household member is impacted by HIV, press 1.
 If you are calling about domestic violence, sexual assault, stalking, a family law issue, divorce, an issue with the Department of Children and Family Services or DCFS, a special education or school discipline issue, or a name change, press 2.
 If you are calling about a housing issue, such as foreclosure, eviction, notice of termination, or disconnection of utility services, press 3.
 If you are calling about Social Security, SNAP or food stamps, TANF, Medicaid, veterans benefits, or other benefits programs, press 4.
 If you are calling about bankruptcy, debt collection, a student loan or other loan or contract issue, driver's license suspension due to debt, or consumer fraud, press 5.
 If you are calling about criminal records relief such as expungement or sealing, press 6.
 If you are calling about an employment issue, press 7.
 If you are calling about an immigration issue, press 8.
 If you are calling to prepare documents to designate someone you trust to make decisions for you in the future if you are unable to do so yourself, also known as healthcare or financial power of attorney, or to name someone to leave your home to after you pass away, press 9.
 If you did not hear a legal issue that applies to you, press 10, or one-zero on your keypad.

To repeat the menu options, press the pound key.

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Employment Menu Prompt

If you are calling about unemployment benefits, press 1.

If you are calling about wages you are owed, press 2.

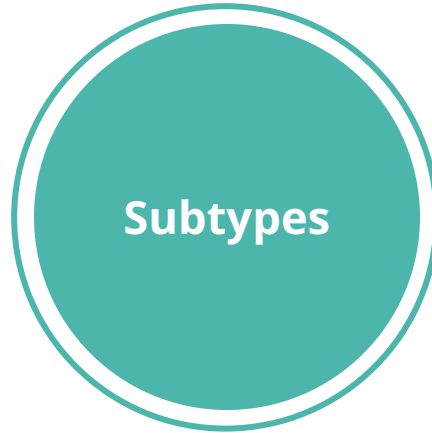If you are calling about a worker's compensation issue, press 3.

If you are calling about any other employment issue, press 4.

To repeat these options, press the pound key.

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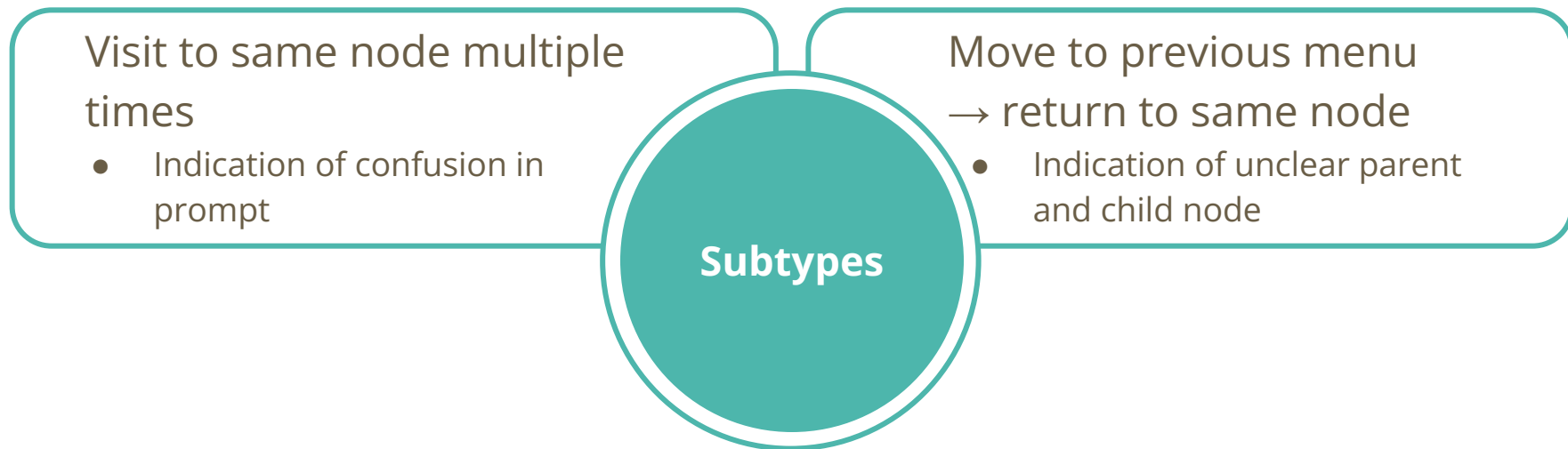**Subtypes**

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Visit to same node multiple times

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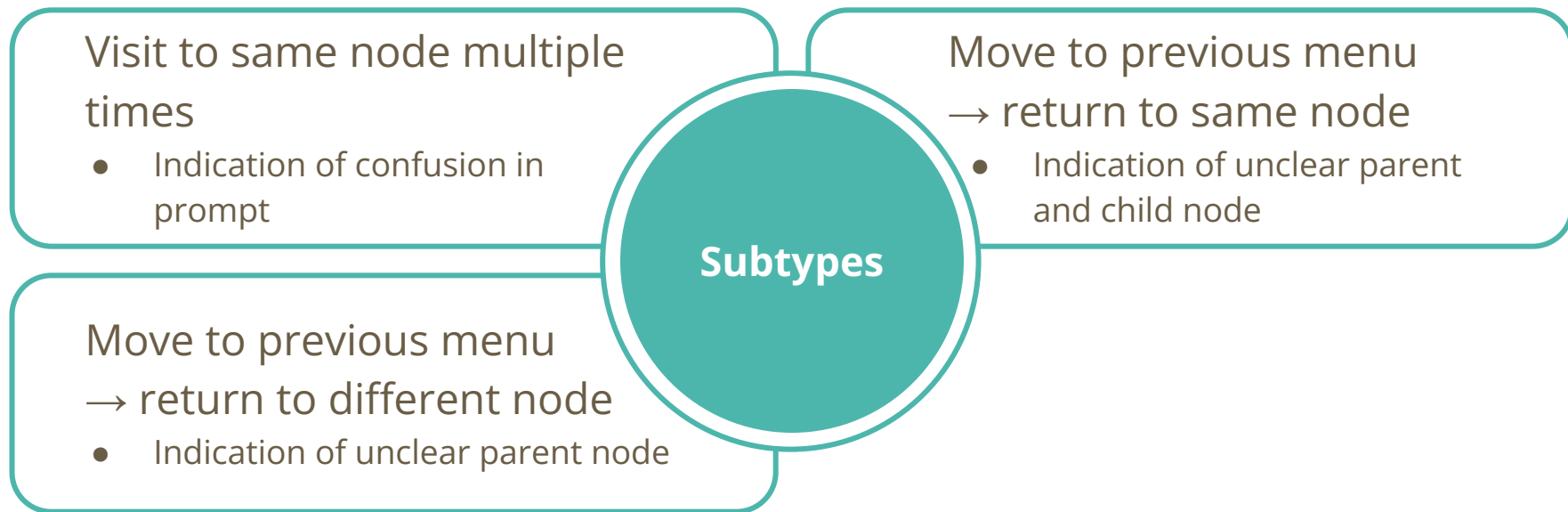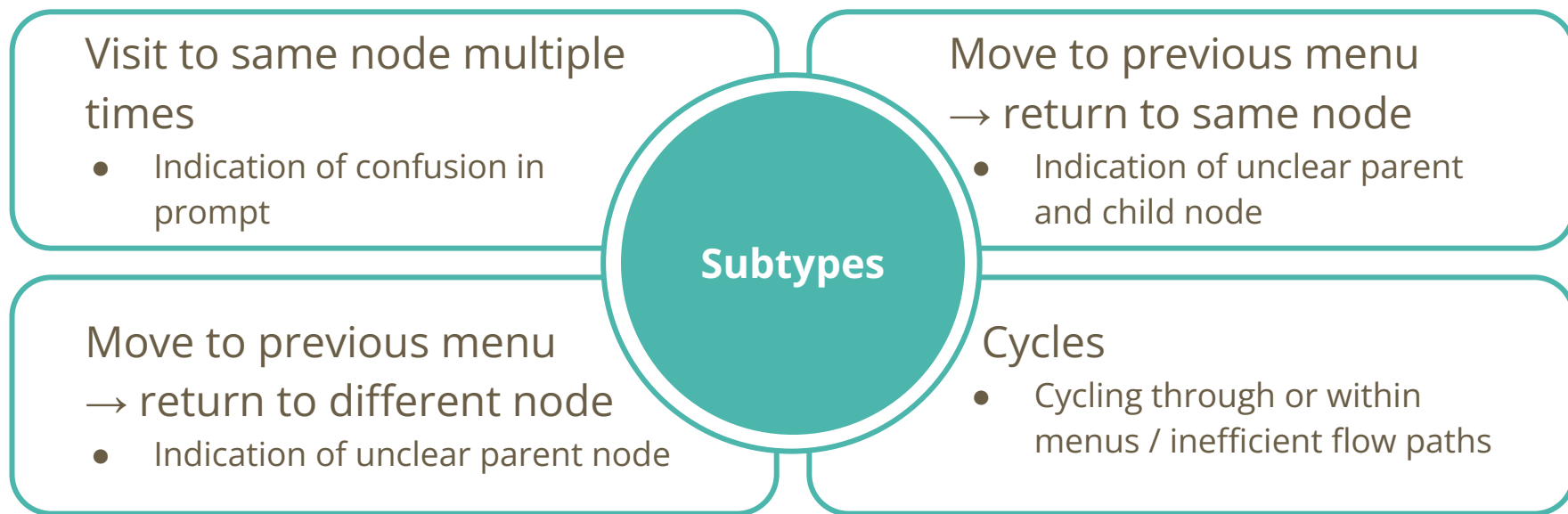**Subtypes**

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Algorithm: Analyze CAR data to identify nodes where these repeated processes are occurring

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  - Difficult to flag from data
- **Impact**
  - Simplify navigation, potentially reduce time, prevent system overload during peak hours

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Example:

- **Main Number Call Menu**
  - -> language selection prompt
  - No input directs you to front desk rather than main menu

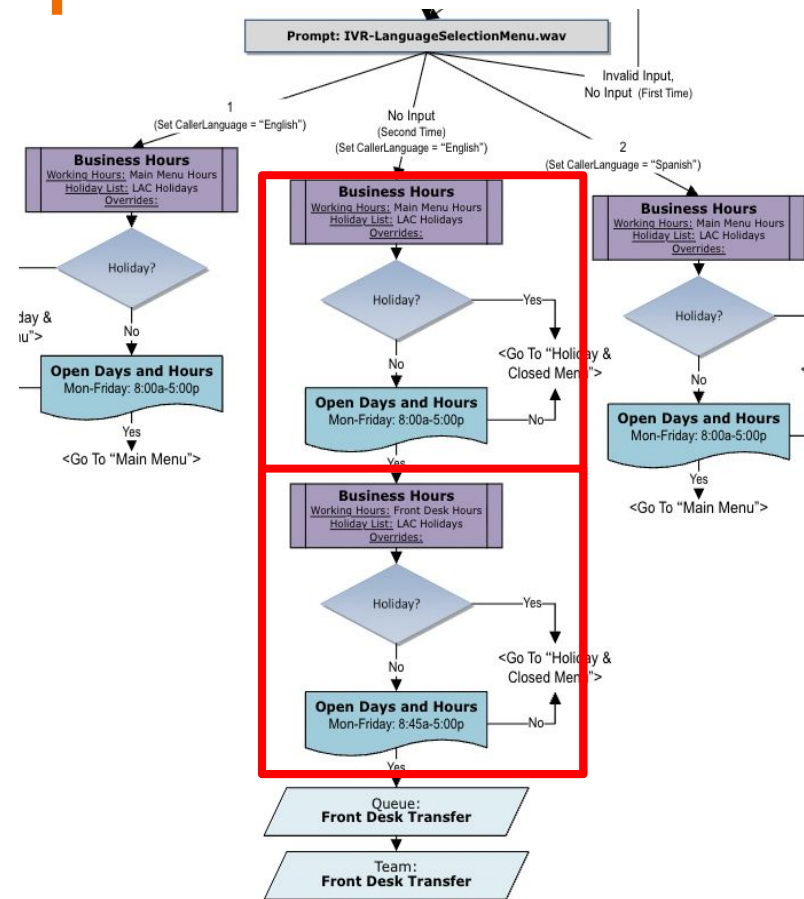# Type 3: Internal Redundancy Example

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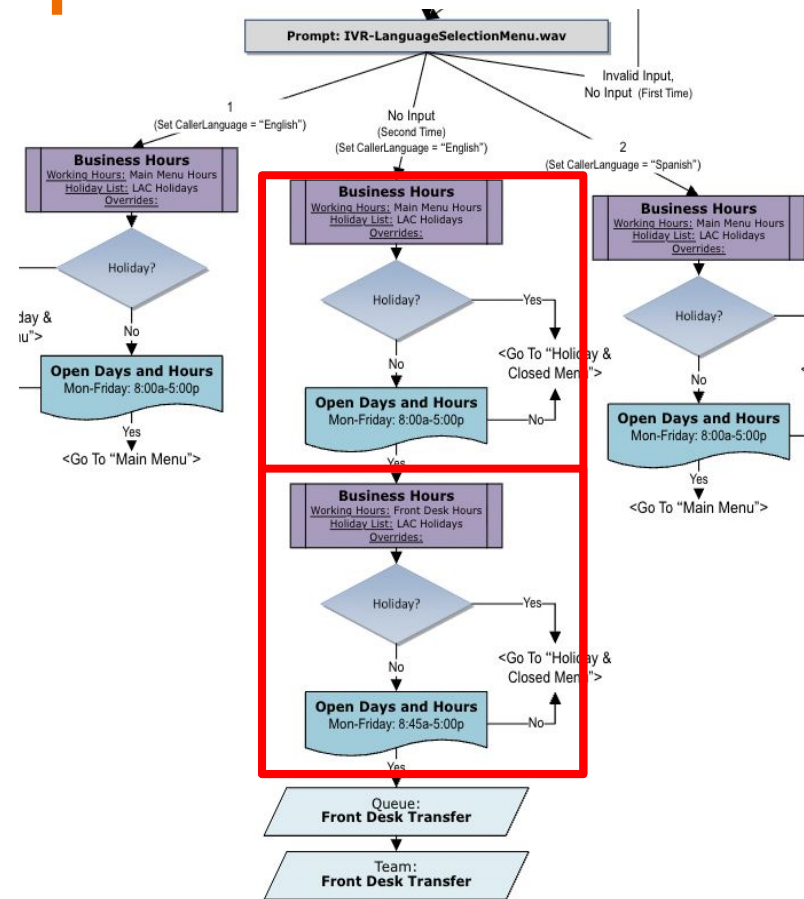
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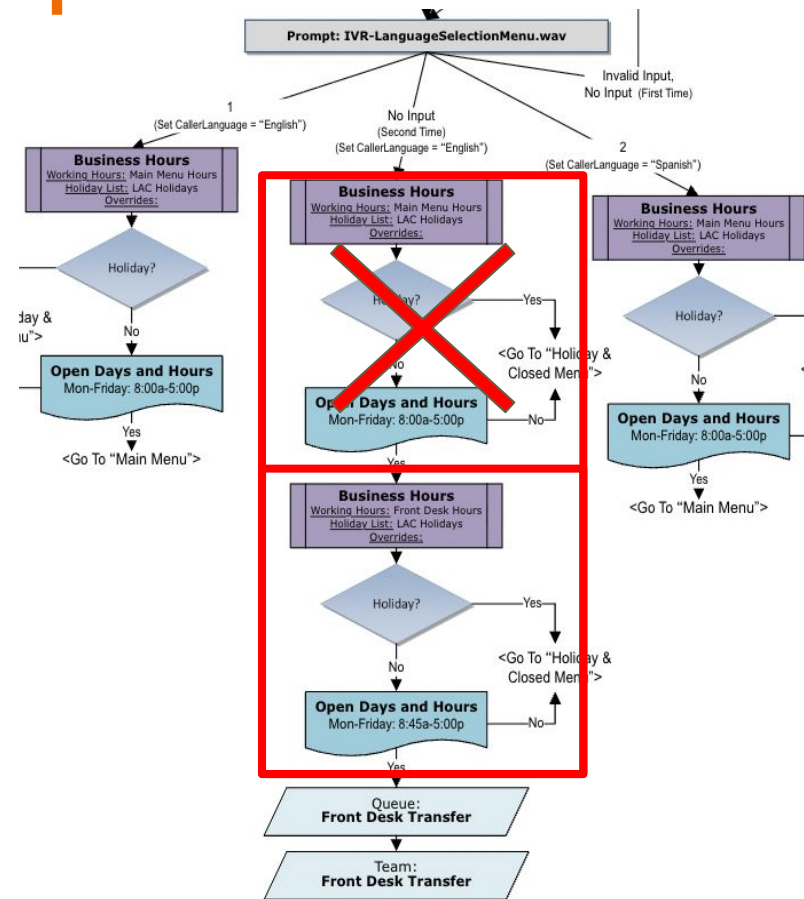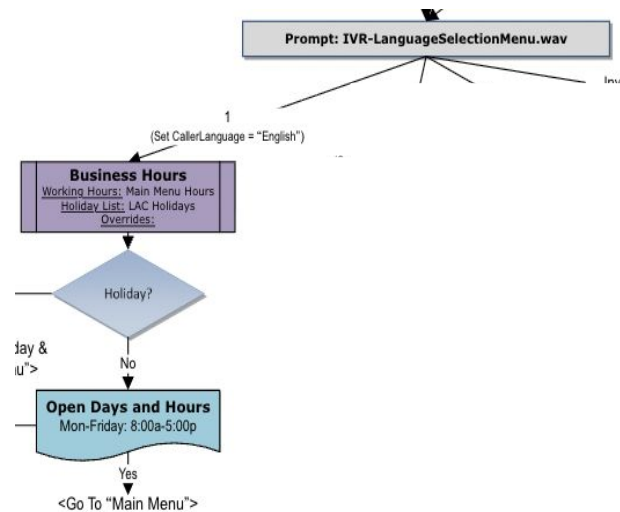
Other Observations / Questions

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  - Flow chart suggests language selection -> mainmenu hours check -> main menu
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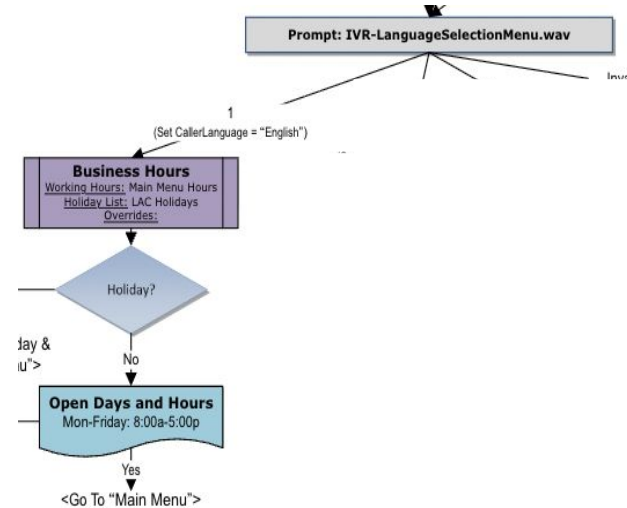
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EP Name	Flow Name	Activity Name	Activity Start Timestamp
Main Number Telephony EP	NaN	NaN	2025-01-14 12:39:32
NaN	LACMain	NaN	2025-01-14 12:39:32
Main Number Telephony EP	NaN	LanguageSelectionMenu	2025-01-14 12:39:32
Main Number Telephony EP	LACMain	NaN	2025-01-14 12:39:32
Main Number Telephony EP	NaN	MainMenu	2025-01-14 12:39:45
NaN	PreLegalMenuSeniorsMenu	NaN	2025-01-14 12:40:09
Pre-Legal Menu Seniors Menu Telephony EP	NaN	SeniorsMenu	2025-01-14 12:40:09
NaN	LegalMenu	NaN	2025-01-14 12:40:18

Prompt: IVR-LanguageSelectionMenu.wav

1
(Set CallerLanguage = "English")

Business Hours
Working Hours: Main Menu Hours
Holiday List: LAC Holidays
Overrides:

Holiday?

No

Open Days and Hours
Mon-Friday: 8:00a-5:00p

Yes

<Go To "Main Menu">

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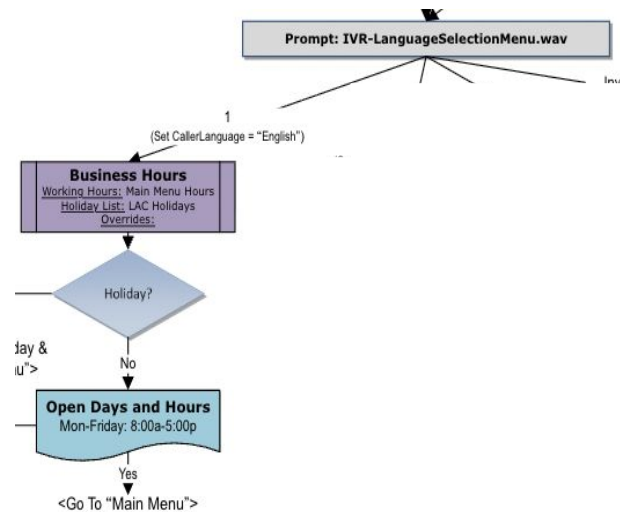- Many end nodes that result in Legal Aid unable to handle selected issues

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- Many end nodes that result in Legal Aid unable to handle selected issues
- Systematically identifying parent/child node relations for type 2 redundancies

Sources

Cowan, N. (2010). *How is Working Memory Capacity Limited, and Why?* National Library of Medicine (PMC). https://pmc.ncbi.nlm.nih.gov/articles/PMC2864034/

Thank You