call journey

WordBench 3.4.3
Review and Analysis
Guide

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- WordBench

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1. Introduction to the WordBench Dashboard

The purpose of the WordBench system is to provide a powerful yet intuitive interface for transcribed audio data. With this speech analytics solution, the user has a bird's eye view of overall call statistics, and with an ability to specialize the metrics. He or she can search for words or phrases in the database of transcriptions, and pull up any call's audio and transcription so they can follow the text as they listen.

1.1. Intended Audience

This information was written for WordBench users with view permissions for a company or organization. No specialized knowledge of speech analysis or programming is required.

1.2. Tools You'll Need

Here's what you need to get started:

- Desktop or laptop computer with secure power supply, installed with Google Chrome 14+ and Mozilla Firefox 23+.

- IP address and username provided to you upon subscription

- Fast and reliable network connection

2. Monitoring Your Calls

WordBench enables you to monitor your incoming calls and gives you both textual and visual analysis of your audio data. This section will show you the different mechanisms for demonstrating current patterns and forming predictions.

2.1. Long-Term Vision: Overview Chart

On the **Dashboard**, the **Overview** section of the **Submenu** depicts call information over time in the form of a graph to determine patterns. The X-axis shows the date range as selected in the date picker, and the Y-axis metric can be selected from a drop-down menu. The Y-axis options are as follows: **Call volume**, **Call duration**, **Agent emotion**,and **Client emotion**.
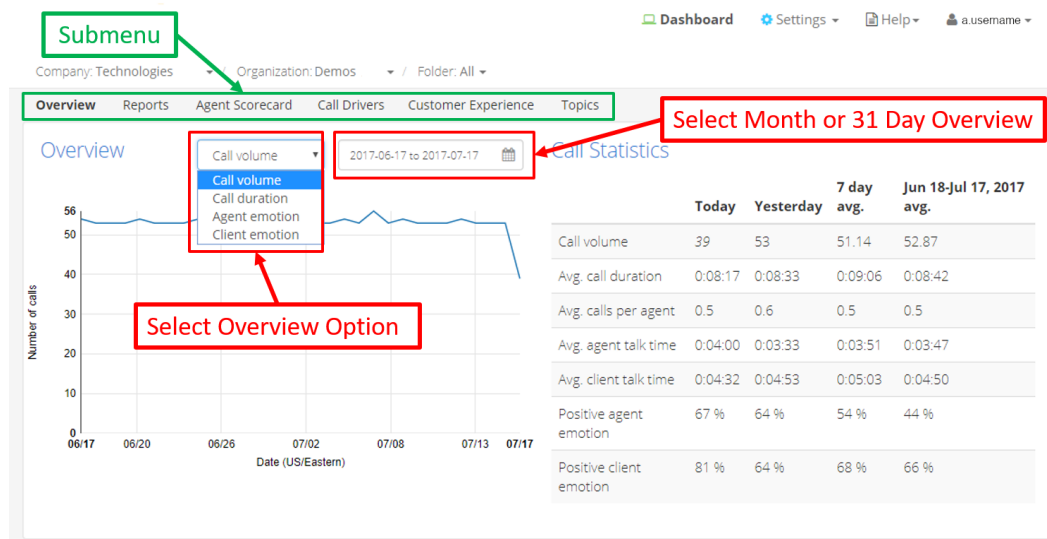
Figure 2.1. Dashboard Overview

WordBench provides several ways to examine data that has already processed.

- **Last Month Overview** - If there is data in the last month - where month is the corresponding number of calendar days, which will vary by month length - the graph will display that date range by default. The date picker contains a quick link to return to this view when it exits.

- **Calendar month** - If there is no data in the last month, the graph will display the last calendar month with data by default. The date picker allows you to select any calendar month that contains data. Months that contain data will have be identifiable when using the date picker by enlarged numbers for the days with data.

  Note: **Historical Data** is any file with a timestamp before the current date.

2.2. Short-Term Analysis: Call Statistics & Daily Charts

Depending on the Overview drop-down option selected, either a **Call Statistics** or **Daily Charts** section is shown to the right of the Overview chart.
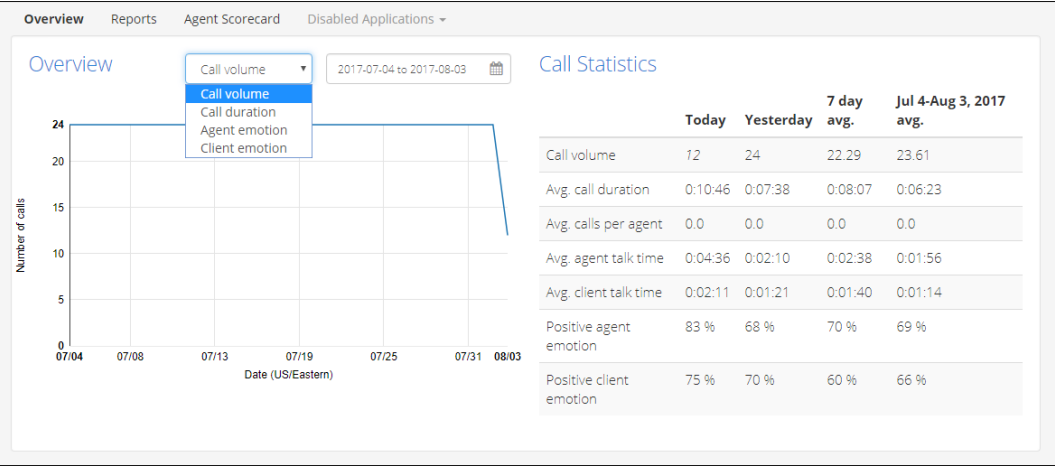
Figure 2.2. Call Volume

Call volume: Call Statistics shows the stats over the last month across several metrics related to call volume. These include: **Call volume**, **Avg. call duration**, **Avg. calls per agent**, **Avg. agent talk time**, **Avg. client talk time**, percentage of **Positive agent emotion**, and percentage of **Positive client emotion**.

The default view displays information for the following time periods: **Today**, **Yesterday**, **7 day avg.**, and **last month**. For the last month average, the date range is displayed as shown in Figure 2.2, "Call Volume", or, if a specific calendar month is selected, as shown in Figure 2.3, "Default view after selecting a month".

Clicking a different point on the graph changes **Today** to the date selected, and **Yesterday** changes to **Previous Day**.

7 day average is calculated based on the last 7 days, including the selected date. **Month average** is calculated to include all days in the selected date range.

(((call journey

Call Statistics

	Today	Yesterday	7 day avg.	Aug 2017 avg.
Call volume	--	--	--	23.61
Avg. call duration	--	--	--	0:06:23
Avg. calls per agent	--	--	--	2.0
Avg. agent talk time	--	--	--	0:01:56
Avg. client talk time	--	--	--	0:01:14
Positive agent emotion	--	--	--	69 %
Positive client emotion	--	--	--	66 %

Figure 2.3. Default view after selecting a month

After selecting a month via the date picker, only the month's average will be populated in the default view as seen above. The rest of the statistics will be populated when a date is selected by clicking a data point on the graph.
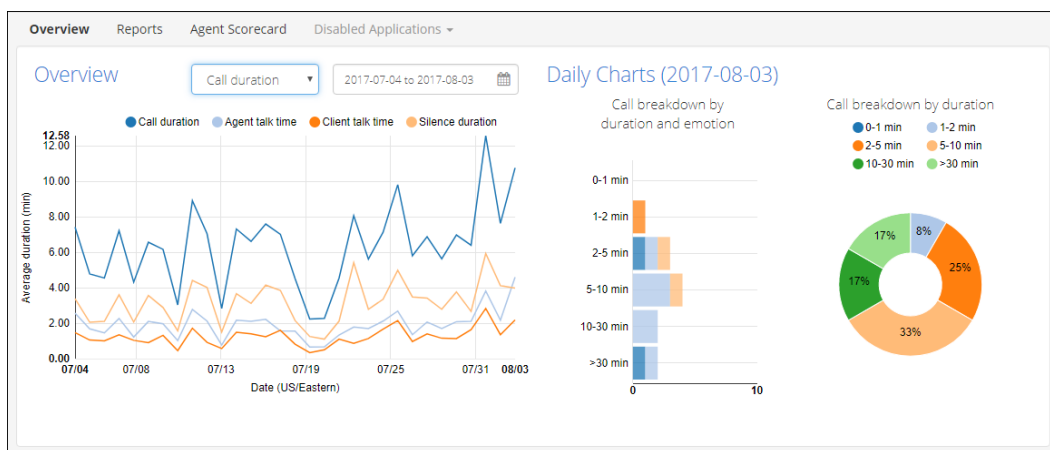
Figure 2.4. Call Duration

Call duration: The Overview chart is can be clicked to display the daily call breakdown. Daily Charts include a histogram of calls by call duration and emotion and also duration by percentage of overall calls. Emotion is broken down into 4 groups: Positive, Improving, Negative, and Worsening. Each call falls into one emotion group. Clicking on the Daily Chart graphs will trigger a search in the Files view below.
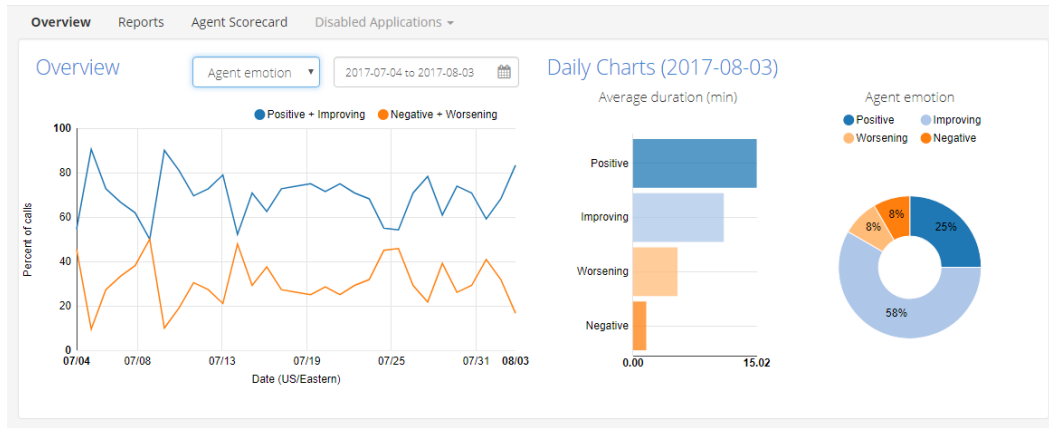
Figure 2.5. Agent Emotion

Agent emotion: The Overview chart can be clicked to display the daily agent emotional state. Daily Charts include average call duration by emotion and percentage of calls of a given emotion. Clicking on the Daily Chart graphs will trigger a search in the Files view below.
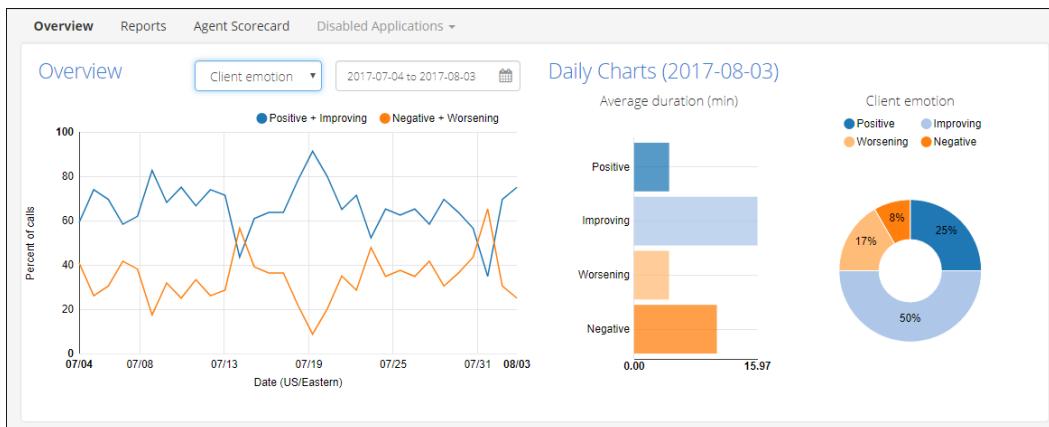
Figure 2.6. Client Emotion

Client emotion: The Overview chart can be clicked to display the daily client emotional state. Daily Charts include average call duration by emotion and percentage of calls of a given emotion. Clicking on the Daily Chart graphs will trigger a search in the Files view below.

2.3. Views

While the Overview provides high-level visualizations of the audio, the **Views** section allows the user to interact with the data on the level of individual calls, clients, or dates. There are three types of views: the **Files View** and the **Summary View**. Each view provides a close-up look at the files through a variety of metrics over a customizable date range. Select a view by clicking on the drop-down menu next to View, below the Overview chart as shown in Figure 2.7, "Dashboard Overview View Options".
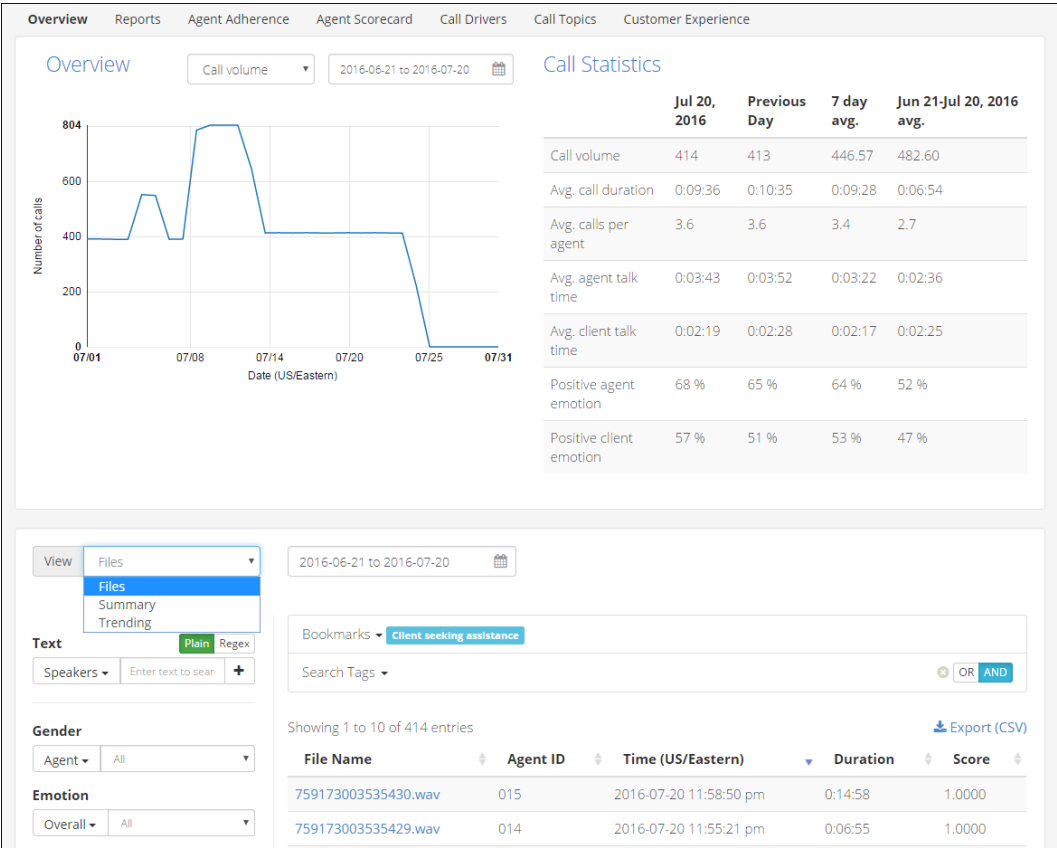
Figure 2.7. Dashboard Overview View Options

2.3.1. Summary View

The Summary View, Figure 2.8, "Summary View", displays a table with call statistics by day. The available metrics are the same as those shown in the Call Statistics table (Figure 2.2, "Call Volume"), and include: **Call volume**, **Average call duration**, **Average agent talk time**, **Average client talk time**, **Positive agent emotion**, and **Positive client emotion**. Clicking on a date takes the user to the Files View (Figure 2.9, "Files View"), with the date picker set to include only calls from that date.

Figure 2.8. Summary View

2.4. Files View and Details

The Files View, Figure 2.9, "Files View", is the main page for viewing your files. It enables the user to find individual files of interest via the search function and filtering methods. The left sidebar contains search filters which enable the user to constrain search results on an ad-hoc basis. The frame above the file list contains a **Bookmarks** section where Search Terms can be saved for each individual user and the **Search Terms** that are currently being used to filter the file list. Search results underneath provide information about the file and preview phrases where the Search Terms exist.

See Chapter 3, *Searching Your Files* for more information about searching files.

Figure 2.9. Files View

Clicking on a File Name here takes you to the **File Details** page (Figure 2.10, "File Details"), which provides an overview of the individual audio file, and is discussed in Section 2.5, "File Details page".

2.5. File Details page

Clicking on a file from the file list takes you to the File Details page, Figure 2.10, "File Details". The browser tab displays the filename, enabling easy navigation between files when multiple tabs are open.
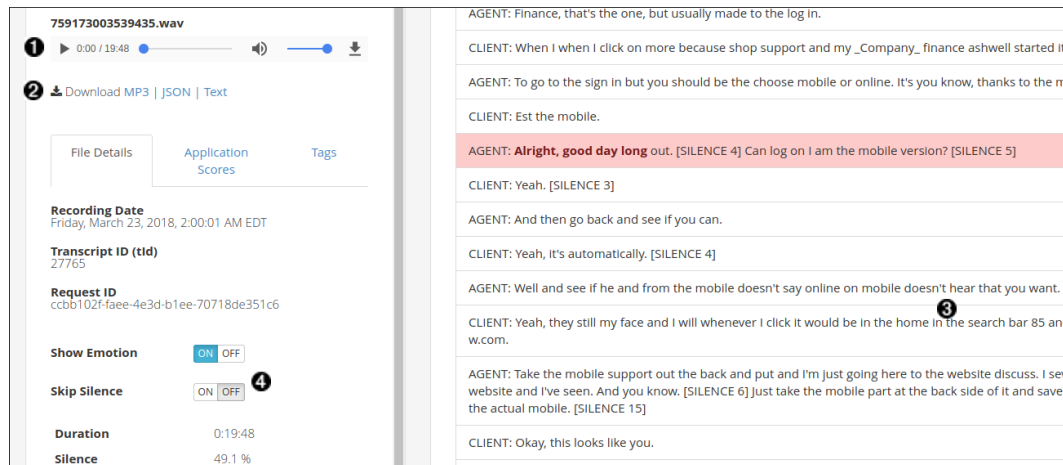
Figure 2.10. File Details

As shown by the callouts in Figure 2.10, "File Details", the controls on this page enable you to:

1. Play the entirety of the audio file, use the slider, or navigate to specific moments by clicking on a section of the transcript.

2. Download the file in audio MP3 format, and the transcript in text or JSON formats

3. Read the transcript, taking advantage of highlighted search terms and navigation buttons (if the file was filtered using a search or application). Copy a link to point others to a specific location in the transcript.

4. View application scores, call metadata, and emotion.

Transcripts are typically divided into different speaker turns. Transcripts of one-channel, mono audio files with a single speaker (specified during folder creation) are broken up into utterances to make them easier to read and to simplify drilling down into a single utterance. One-channel, mono audio files with two speakers specified during folder creation may display:

• speaker turns due to diarization

    • all audio in a single channel if no events were detected to trigger different speaker turns. In this case, the single-channel audio will still be broken up into utterances.

Note: Application scores are automatically included in JSON transcripts.

Highlighted areas within a transcript use different colors to indicate the following:

- **green** - positive emotion identified

- **grey** - neutral emotional content

- **red** - negative emotion identified

- **(none)** - no detectable emotion

Bold words in the transcript identify those words or clauses that have emotional content.

Clicking on a section of the transcript will also allow you to listen to the audio at that point in the conversation. The audio player skips over sections of silence longer than 10 seconds when **Skip Silence** is turned on. In Figure 2.10, "File Details", **Show Emotion** is ON and **Skip Silence** is OFF.

Note: Skipping silence during playback can be configured as the default behavior for all users of a WordBench installationby a system administrator. You can still override the default behavior by turning this option off manually on **File Details** pages if you want to do so.

Regardless of whether WordBench is configured to skip silence by default, WordBench remembers your personal setting for the **Skip Silence** option, saving it in a cookie for your browser. When using the same system and browser, WordBench will always use the last value that you specified for the **Skip Silence** option.

For 2-channel audio calls that receive an overtalk score greater than 0%, the score is highlighted by blue text. As shown in Figure 2.10, "File Details", when speaker overtalk occurs within a transcript, affected speaker turns display a solid blue border on the left-hand side so that they can easily be spotted and reviewed if necessary.

If you navigate to the File Details page after conducting a search, your search terms will appear highlighted in yellow and the arrows on the right hand side will allow you to switch between instances of your search terms.

Silence time is visualized in the transcript as [SILENCE (*length of silence in seconds*)]. For example in Figure 2.11, "Application Scores", [SILENCE 5] indicates 5 seconds of silence. Only silence lasting longer than 3 seconds will be marked. You can filter calls based on the percentage of silence time using the Call Silence Time slider in the Files View of the Dashboard (Figure 2.9, "Files View"). See Section 3.3, "Filter Searches" for more details.
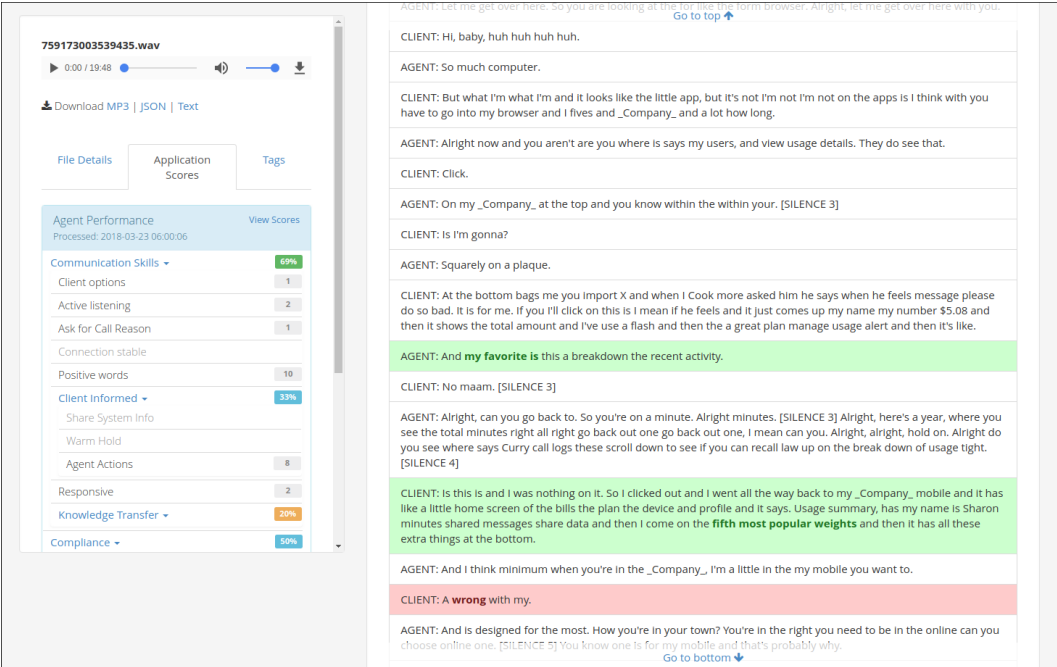
Figure 2.11. Application Scores
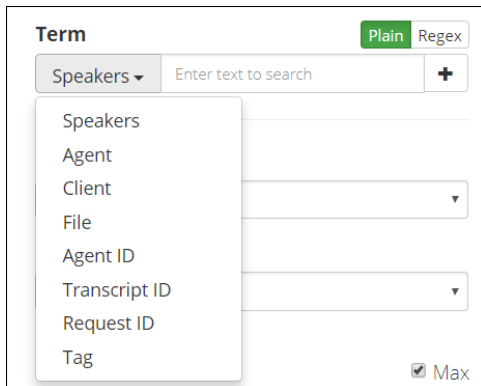
Application scores are also accessible for individual call transcripts. If there are multiple applications with scores for the file, they will all be displayed in the side panel. Clicking on an application category will allow you to drill down into lower-level categories. For leaf-level categories you will see the Count scores listed to the right. Clicking on that number will highlight the instances of that category's phrases in the transcript.

Note: Count scores are the number of matches at the leaf-level. They may not always match the number of highlighted phrases. More information about count scores can be found in the Customizing WordBench Applications.

3. Searching Your Files

The Files View (Figure 2.9, "Files View") provides a function for searching your files. This section discusses how to perform **Plain Text** and **Regular Expression** searches, perform metadata searches, perform **OR/AND** searches, bookmark search terms, and filter through results.

3.1. Plain and Regex Search

Figure 3.1. Search Term Input

WordBench's search term input, shown in (Figure 3.1, "Search Term Input", supports both the *Plain* and *Regex* (Regular Expression) text search methods. The type of search that you want to perform is selected by the green/orange **Plain/Regex** toggle button at the top right of the search field. Plain search can consist of words or phrases and can use the special characters shown in Table 3.1, "Special Search Characters for Plain Text Search", while Regex searches only search a single word and support the special characters discussed in the *WordBench 3.4.3 Regular Expression Guide*.

 Note: All dashboard searches are case insensitive.

The search function can be used to search for words, phrases, or regular expressions. The search may be carried out over all turns in all transcripts, the agent speaker turn or the client speaker turn of transcripts, as well as by Filename, Agent ID, Tag, Transcript ID, Request ID, and any custom metadata fields that have been configured for the folder. This type of filtering is selected using the drop-down menu to the left of the search text box, and is discussed in the next section.

3.1.1. Search Target Summary and Associated Defaults

The **Section 3.1, "Plain and Regex Search"** toggle button determines how a search is performed based on the text and special characters that you enter. The **Term** drop-down enables you to identify the field within a transcript that is searched for the specified value. Different fields are different data types, and therefore have built-in defaults for how they are searched. The fields on the **Term** drop-down and their associated default search behavior are the following:

- **Speakers** - searches within strings that have been identified as any spoken text in the transcript, both **Agent** and **Client**.

- **Agent** - only search within strings that are identified as **Agent** speech in the transcripts.

- **Client** - only search within strings that are identified as **Client** speech in the transcripts.

- **File** - enables you to search file names, and automatically includes a '*' wildcard on either side of the term that you are searching for. This will match any file names that contain the search term as a substring.

- **Agent ID** - searches within any strings that have been identified as the *Agent ID* field in custom metadata that you provided

- **Transcript ID** - an integer value that can only be searched for explicitly. No special characters are permitted.

- **Request ID** - a string value that can be searched for explicitly or using the special characters that are associated with the type of search that you are performing.

- **Tag** - a string value that tags that are associated with a call can be searched for explicitly or using the special characters that are associated with the type of search that you are performing.

- *custom metadata fields* - searches within any strings that have been identified as fields in any custom metadata that you provided. These custom metadata fields are folder-specific, and a list of them is appended to the bottom of the **Term** drop-down.

3.1.2. Plain Text Search

When doing a Plain Text Search, phrases such as "your manager" may be used, while a Regex search would only accept single words such as "frustrat*". The Plain Text Search characters are shown in Table 3.1, "Special Search Characters for Plain Text Search". For example, searching for 10* in the Agent ID will match 10234 and 1036.

Table 3.1. Special Search Characters for Plain Text Search

Character	Function	Example	Meaning
– (minus)	Exclude	-not happy	Files that do not contain "not happy"
&	AND	phone & tablet	Files containing both "phone" and "tablet"
|	OR	phone | tablet	Files containing either

Character	Function	Example	Meaning
			"phone" or "tablet"
*	Wildcard for 0+ characters	help*	Will return results for help, helping, helpful, etc.
?	Single character wildcard	th???	Will return results for "there", "thank", "those"
~n	Search for phrases appearing up to *n* words apart	cancel account ~4	Files containing "cancel" and "account" within the same speaker turn and no more than 4 words apart. For example, "cancel your, the account", "cancel my daughter's membership account", and so on.
~t	Search for phrases appearing within the same speaker turn	cancel account ~t	Files in which "cancel" and "account" appear in the same speaker turn
^	Search for phrases found at the beginning of a speaker turn	^ helpful	Files containing "helpful" at the beginning of a speaker turn
$	Search for phrases found at the end of a speaker turn	upset $	Files containing "upset" at the end of a speaker turn

Note: The ^ (beginning of line) and $ (end of line) characters were added in WordBench Version 3. Data uploaded prior to Version 3 cannot be searched using these characters.

3.1.3. Time-based Search & Limitations

Time-based searches can be used to find phrases that occur within a specified time period from the start or end of the call. Examples of time-based searches are shown in Table 3.2, "Time-Based Search Terms":

Table 3.2. Time-Based Search Terms

Search Term	Meaning
phone ~s<30	Files that have "phone" in the first 30 seconds of call
cancel account ~s>30	Files that have "cancel account" anywhere except the first 30 seconds of call
thank you ~e<30	Files that have "thank you" in the last 30 seconds of call
upset ~e>30	Files that have "upset" anywhere except the last 30 seconds of call
-thank you ~e<30	Files that don't have the search term "thank you" in the last 30 seconds of the call

One limitation with time-based search is that it only looks at speaker turn start times, so some matches may be missed or incorrectly marked. For example, if the search phrase is "Client: phone ~s<30" and the Client's turn begins at 28 seconds, but the phrase "phone" doesn't occur until 40 seconds in, that will still be marked as a match since the start of the speaker turn was within the correct time frame.

Note: Time-based searches were not allowed in 2.2.x data searches, and will return results for the search phrase located anywhere in the file.

3.1.4. Searching for Numbers
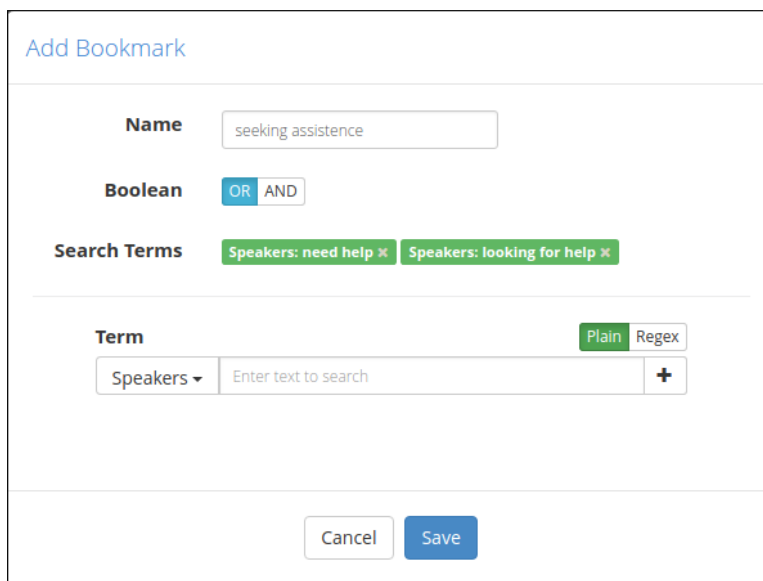
Depending on whether or not a phrase triggers number translation, numbers can appear either written out (two) or as digits (2) in transcripts. The application phrases and dashboard searches only look for exact matches, so if you search for (2) you won't see results for (two). If you are looking for all instances of a number, you can use the OR "|" search operator. *For example, searching "2 | two" will provide you with all files containing the number two.*

3.1.5. Regex Search

For complete syntax of the Regex search supported by WordBench, see the "**WordBench 3.4.3 Regular Expression Guide**".

3.2. Bookmark Searches

If you conduct a particular search regularly, you can bookmark your search terms to quickly repopulate the terms at a later time. Click **Add to Bookmark** in the **Search Terms** drop-down menu to display the bookmark dialog shown in .

Figure 3.2. Add Bookmark

Additional search terms can be added to the bookmark using a search term input similar to the one used for search. A name must be provided for the boomark, and **AND/OR** search can be toggled as needed. After the bookmark is saved, it can be found in the list to the right of **Bookmarks** as shown in Figure 3.3, "Bookmark Example". Clicking the blue bookmark tag will reset the search to contain only the search terms saved in the bookmark. Bookmarks may be modified or deleted by clicking on **Manage Bookmarks** in the **Bookmarks** drop-down menu.

Figure 3.3. Bookmark Example

3.3. Filter Searches
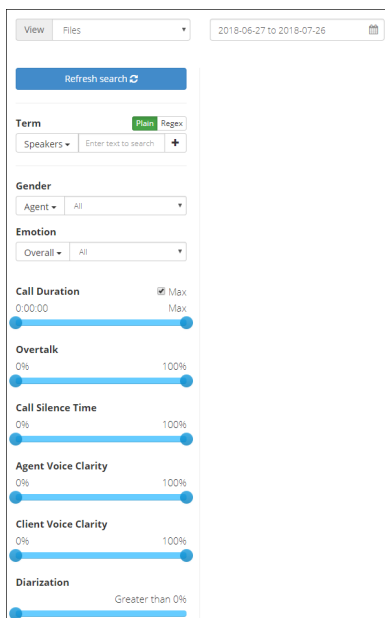
Figure 3.4. Search Filters

In addition to the text filtering options described above, there are several other valuable **Search Filters**: date range, speaker gender, speaker emotion, call duration, overtalk, call silence time, agent and client voice clarity, and diarization. Each setting is described in detail below:

Date range: Filter results to only display calls within a particular date range. By default it is the last month with data.

Gender: Search based on Agent or Client gender.

Emotion: Search based on Overall or specific Agent or Client emotion: Positive, Negative, Improving, or Worsening. Positive calls remain positive or neutral through most of the call.

Negative calls remain neutral or negative through the call. Improving goes from mostly negative to positive by the end of the call. Worsening goes from positive or neutral to negative.

Call Duration: Filters results to include only calls within a call duration range.

Overtalk: Overtalk occurs when speakers talk over one another. The overtalk slider filters based on the percentage of Agent overtalk. This is the number of Agent-initiated overtalk out of the total number of Agent speaking turns. In other words, out of all of the Agent's turns, it measures how many were overtalk that interrupted a Client's turn. 100% region has the most overtalk.

Call Silence Time: Silence is equal to all non-speech time, calculated as the total audio duration minus the sum of the duration of each word. If music and noise are not decoded to word-events, they are counted as silence. The Call Silence Time slider filters results to include only calls with a certain percentage of silence. Calls with 100% silence contain the most silence.

Agent Voice Clarity: Filters according to how clear the agent sounds on the phone line. Agents with 100% clarity would be the clearest, while low clarity is defined by poor signal, background noise, or just hard to understand due to accent or enunciation.

Client Voice Clarity: Same as above except on the client side.

Diarization: When mono (1 channel) audio has multiple speakers, diarization is done to separate the speakers for analysis. The diarization score is a value between 0 and 1 that identifies how completely the call was divided into individual speakers. A score of 2 means the call was not diarized. Diarization technology is not perfect, and to find calls where diarization is done well, set the slider high. The tradeoff is that fewer calls will be retrieved.

3.4. Tagging Multiple Search Results

WordBench makes it easy to identify specific transcriptions or the results of previous searches by enabling you to apply a **tag** (a logical label) to them and then subsequently search for transcriptions that are associated with that tag. Tagging multiple items in a single operation is generally referred to as *bulk tagging*.

Tagging selected results is done from the **Dashboard**, using the **Bulk tagging button** and the **Bulk tag toolbar** that displays under the **Bulk tagging button** once it has been selected.
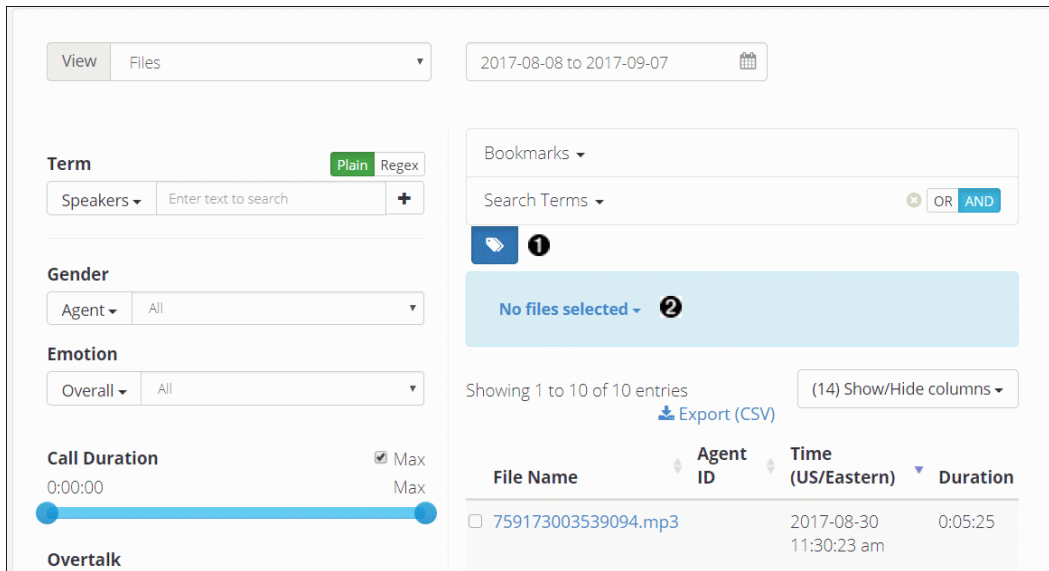
Figure 3.5. Bulk Tagging Button and Toolbar

The callouts in Figure 3.5, "Bulk Tagging Button and Toolbar" highlight the following:

1. The **Bulk tagging button**. Clicking this button toggles whether the **Bulk tag toolbar** displays.

2. The **Bulk tagging toolbar**, which enables you to select multiple files at one time and add and remove tags.
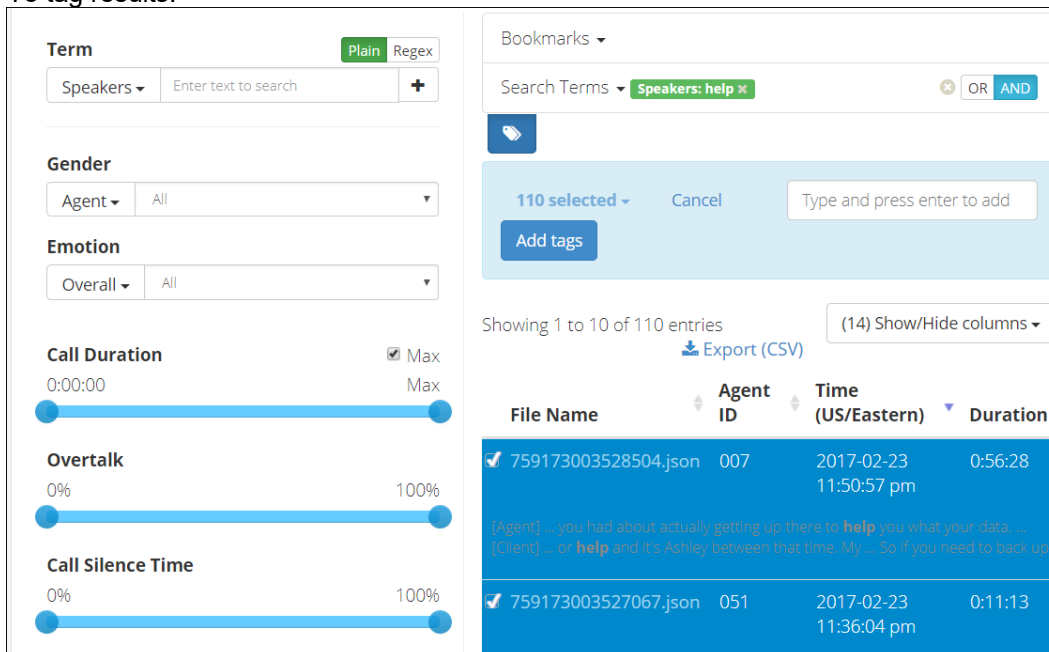
To tag results:

Figure 3.6. Add Tags Textbox When Adding Tags

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1. Use WordBench's search capabilities to locate the transcriptions that you want to tag
2. Click the **Bulk tagging button** to open the **Bulk tagging toolbar**

3. Click **No files selected**. A drop-down menu displays. To select files, click one of the following:

   - **All (up to 1000)** - select all of the matching results (if there are 1000 or less matching results)

   Tip: If more than 1000 matching result are available and you want to tag all of them, you will need to tag the first 1000, then select results that match but do not have that tag, tag the next 1000, and so on.

   - **All in view** - select the matching results that are shown on the current page

   You can also select individual files manually by clicking the checkbox beside their names.

   After selecting one of these menu commands or selecting files manually, the matching transcriptions are highlighted.

   You can also use other commands on this menu to deselect all selected items, or only deselect those that are shown on the current page.

4. After selecting the transcriptions that you want to tag, the **Bulk actions menu** displays. Click that menu header to display the **Add tags** and **Remove tags** menu items. Select **Add tags**. A textbox like the one shown in Figure 3.6, "Add Tags Textbox When Adding Tags" displays.

5. Type the tag(s) that you want to apply to the selected transcriptions. Tag names cannot being with a hyphen (dash). As you type, any tags that you have previously entered which match what you have typed display in a drop-down to make it easier for you to add those tags to newly matched results. You can add multiple tags at the same time by pressing the enter key after each tag that you want to add. You can only add up to 20 tags at one time.

   Note: You can cancel adding tags at any time before adding them by clicking **Cancel** from the center of the Bulk tagging toolbar.

6. When you are finished entering the tag(s) that you want to apply, click **Add tags**. The tags that you have added to the selected transcriptions display at the bottom of each selected transcription.

   Once you have tagged transcriptions, you can easily locate them again by selecting **Tag** from the **Term** drop-down in the search term inpur, entering the name of the tag that you want to search for in the text input area (or the add - '**+** - button), and pressing enter. The search term input is discussed in Section 3.1, "Plain and Regex Search".

   Note: There can be a slight delay between the time that you initiate a bulk tagging operation and the point at which tagged versions of all matching results are displayed. You can click the **Refresh Search** button at any time to force the display to be updated.

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3.4.1. Removing Tags from Multiple Search Results

The process of removing tags from multiple search results in a single operation is similar to the process of adding tags to multiple search results, except that you:

1. Select **Remove tags** from the **Bulk actions menu**. After selecting this menu option, the tags area is pre-populated with the tags that occur on the selected transcriptions, as shown in Figure 3.7, "Removing tags". Only up to 20 tags can be displayed.

2. Click the **x** in any of the available tags to schedule them for deletion. The tag changes from green to red to make it easy to see that it is scheduled for deletion, and the **x** changes to an undo button, which you can click to remove that tags from the list of those that are planned for deletion.

   Note: You can cancel removing tags at any time before adding them by clicking **Cancel** from the center of the Bulk tagging toolbar.

3. Once you have identified all of the tags that you want to remove from the selected transcription, click **Remove tags** to remove those tags.
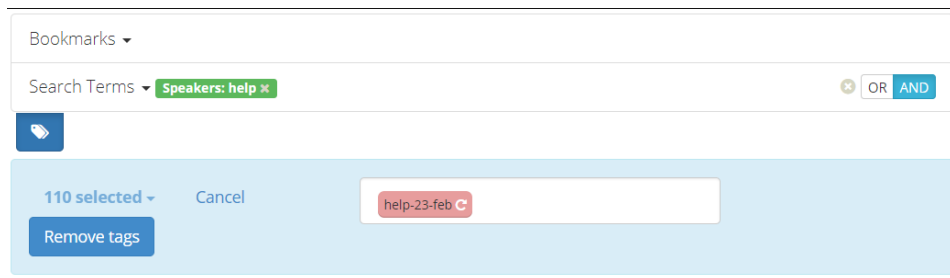

Figure 3.7. Removing tags

3.5. Exporting Search Results in CSV Format

Search results can be exported to Comma-Separated Value (CSV) files using the **Export to CSV** button on the top right hand side of the Files view. Clicking this button displays the dialog shown in Figure 3.8, "Exporting and Downloading Search Results".
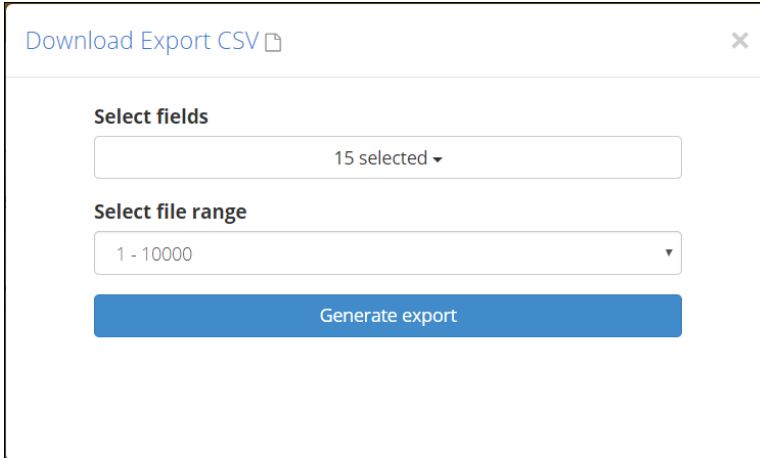
Figure 3.8. Exporting and Downloading Search Results

This dialog enables you to specify the following:

- **Select Fields** - Enables you to specify the application, standard metadata, or custom metadata fields whose values should be included in the exported CSV file. You can also select **Select all** to include the data for all fields in your CSV output.

- **Select file range** - Enables you to specify the maximum number of files in your search results within the current folder for which CSV output will be produced. Possible ranges are displayed in increments of 10,000 files. Only ranges that are relevant to your search results are displayed - if your search results only match up to 9,999 files, the only range that you will see is **1 - 10000**.

After customizing these values, click **Generate export** to generate a CSV file that includes the selected fields for the selected range of matching search results. The name of the generated file displays at the bottom of the **Download Export CSV** dialog. Clicking the name of this file downloads it to your system.

Exporting data in CSV format can be very useful because it enables you to import WordBench data into other applications that enable you to include WordBench data in whatever analysis they perform.

4. Applications

While the **Dashboard** focuses on giving a high level view of the calls coming into WordBench, the **Applications** tab focuses on aspects of the data for deeper analysis. We have developed four applications: **Agent Scorecard**, which tracks agent performance, **Call Driver Analysis**, which tracks the flow of calls according to call category, **Call Categorization**, which organizes and analyzes calls relative to specific categories, and **Customer Experience**, which covers all aspects of both positive and negative call center experiences, including customer sentiment, customer effort, and churn detection. Linguistic and acoustic properties of calls are used to evaluate different metrics for each Application. The Agent Scorecard looks at 7 metrics (categories) for analysis including Communication, Compliance, Effectiveness, Politeness, Professionalism, Sales, and Understandability. The Call Driver looks at multiple metrics for analysis including Billing Inquiries, Account Cancellations, and more depending on the industry selected.

4.1. Long-Term Vision: Overview Chart

The **Overview Chart** on the top left side of the screen breaks down a scorecard by category for each day over the past 31 days. Each **category** is made up of **lower-level categories**. You can choose to view the chart according to the percentage of all calls that meet the requirements for a certain category (Hit/Miss) or according to the average percentage of calls per lower-level category (Coverage). Each colored bar (Figure 20) and each colored line (Figure 21) is clickable and changes the Daily Chart view to the right to show the upper-level categories' lower-level categories for more thorough analysis. The Overview chart stacks the scores for each category so an overall score can be compared on a daily basis.
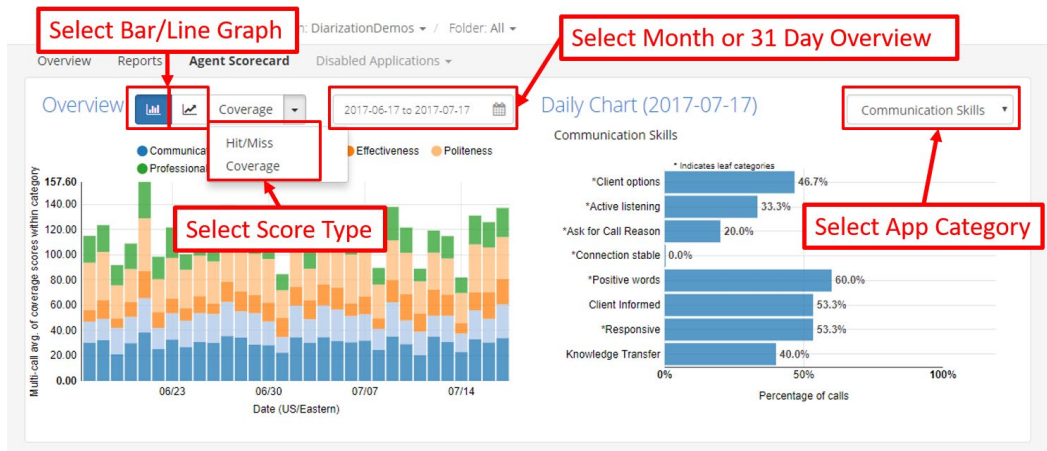

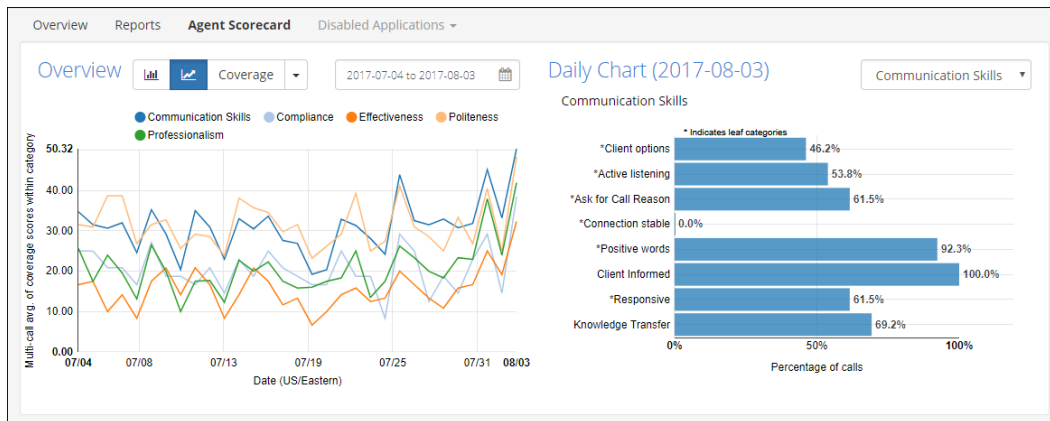**Figure 4.1.** Agent Scorecard Overview Chart

Figure 4.2. Agent Scorecard Overview Chart - Line Graph

4.2. Short-Term Analysis: Daily Chart

WordBench's **Daily Chart** focuses on showing the scores for each lower-level category of a selected category (selected either through clicking a bar in the Overview Graph or through the drop down menu in the top right hand corner). The graph is clickable and each category can be analyzed on a per call level. The file list below adjusts to display calls that fall within the current category. Clicking on a leaf-level category in the Daily Chart will trigger a jump down to the file list. Phrases that represent that category will be highlighted in the search results. The number of calls scored for each lower-level category can be seen by hovering over the corresponding portion of the graph, as seen in Figure 4.3, "Daily Chart" below.

As you navigate down through lower-level categories, the percentages displayed are calculated from the number of calls that passed through the immediate upper-level category and not the total number of calls uploaded for that day.
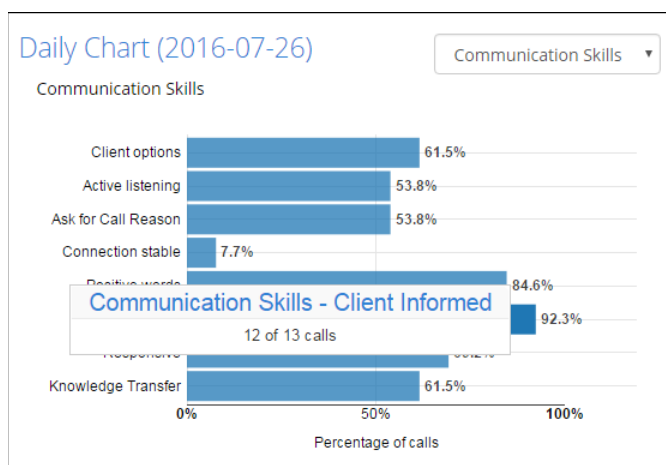

Figure 4.3. Daily Chart

4.3. Viewing Application Scores

As discussed in subsequent sections, WordBench enables you to view application scoring information from a number of different locations.

4.3.1. Using the Application Dashboard

Application scores can be viewed and analyzed in several different ways from the application dashboard. The first is with the Dashboard graphs, as seen in Figure 4.4, "Application Dashboard Graphs". These graphs allow you to quickly visualize your application results and compare category results across a 31 day span.

The Application Overview graph displays Coverage and Hit/Miss scores for top-level categories by day, while the Application Daily Chart shows the percentage of calls with Hit/Miss Scores greater than 0%.

Clicking on a data point on the left-side graph updates the daily chart on the right to allow you a closer look at scores for lower-level categories. Likewise, clicking on a data point on the daily chart updates the search results for that category and, if that category contains its own lower-level categories, also updates the chart to show the scores for those categories.

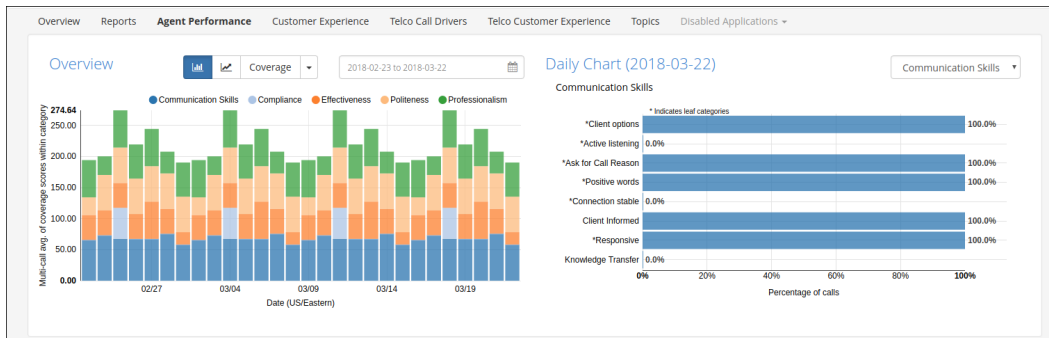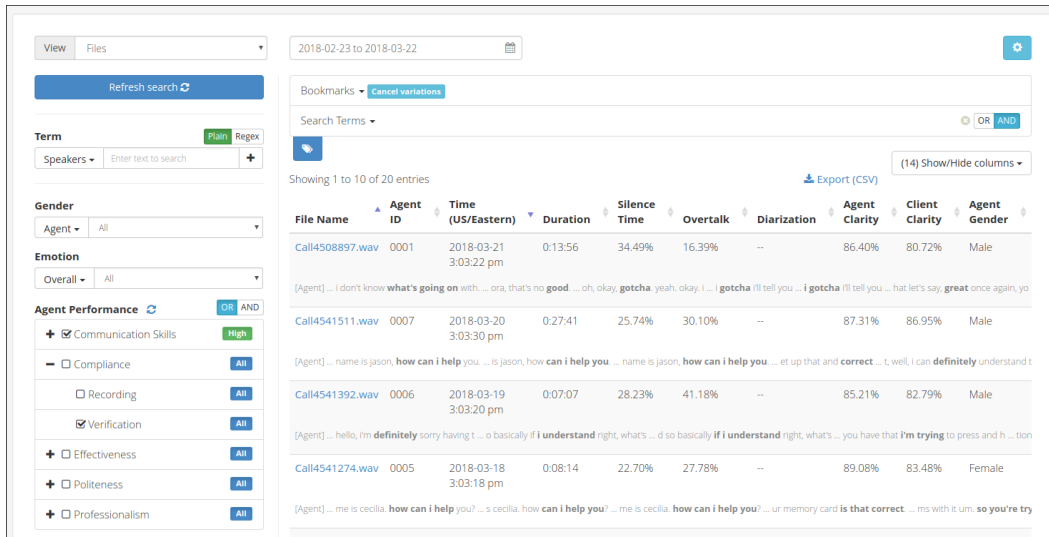**Note:** Leaf-level category names are prefixed with an asterisk (*).

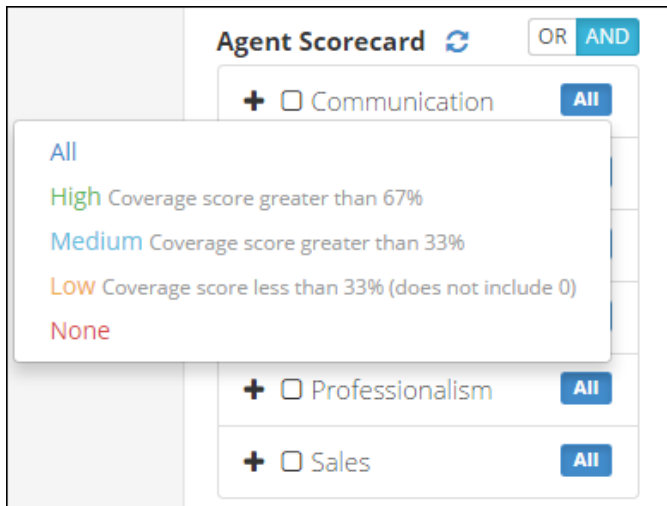
Figure 4.4. Application Dashboard Graphs

4.3.2. Using the Files View

In addition to narrowing your search results using the Dashboard graphs, you can also conduct searches using the Dashboard application metrics filters and the other Files View search functions. Additionally, you can use Boolean OR/AND searches to find calls that meet more than one category or that meet at least one of a subset of categories. These combined search capabilities give you the power to breakdown and analyze your data any way you want for deeper insights into your customer interactions. Figure 4.5, "Application Files View" shows the results of a search done using these capabilities.

Figure 4.5. Application Files View

Figure 4.6. Application Category Score Filters

The Files View is similar to the Files View of the Dashboard. There is an additional search filter section for category scores (Figure 4.6, "Application Category Score Filters"). Each filter is enabled when the checkbox is selected. When multiple check boxes are selected, the search query does an OR/AND Boolean function to find the intersection of the metrics. You can select which type of Boolean search is performed by using the **OR/AND** toggle shown at the top of (Figure 4.6, "Application Category Score Filters"). For each category, you can choose to filter by all or some of its lower-level categories or by certain ranges of scores.

- **All**: Display all calls with coverage scores greater than 0%.

- **High**: Displays all calls with coverage scores greater than 67%.

- **Medium**: Displays all calls with coverage scores greater than 33%.

- **Low**: Displays all calls with coverage scores less than 33% and does not include scores of 0.

- **None**: Display all calls f with coverage scores of 0%, or unscored.

When in the Files View, clicking a file name displays a File Details page that enables you to play the audio file, see the transcript, download an MP3, JSON, or Text version of the transcription, and select from multiple tabs. Tab names and what they are used for are the following:

- **File Details** - view calljourney and custom metadata that was extracted from the input file

- **Application Scores** - view information about whether the file has been processed by available applications and (if so), the category scores for each application. Figure 4.7, "Application Scores Tab for an Unprocessed File" shows the **Application Scores** tab for an audio file that has not been processed by available applications. Figure 4.8, "Application Scores Tab for a Processed File" shows the **Application Scores** tab for an audio file that has been processed by available applications, in this case showing the scores for the Agent Scorecard application.

- **Tags** - view, add or remove tags that are associated with the file
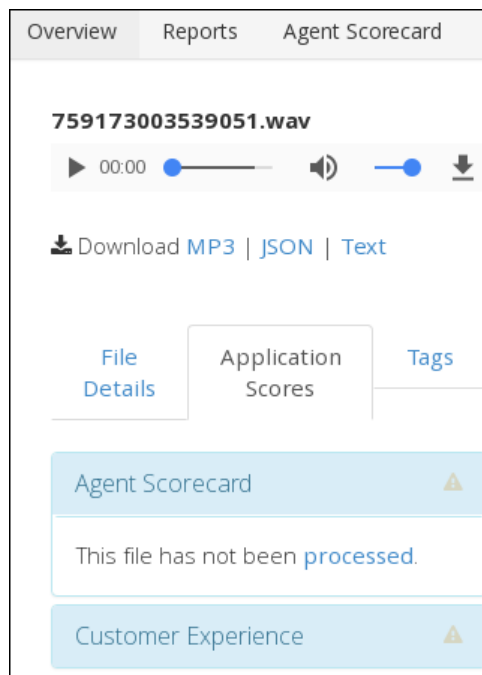
Figure 4.7. Application Scores Tab for an Unprocessed File
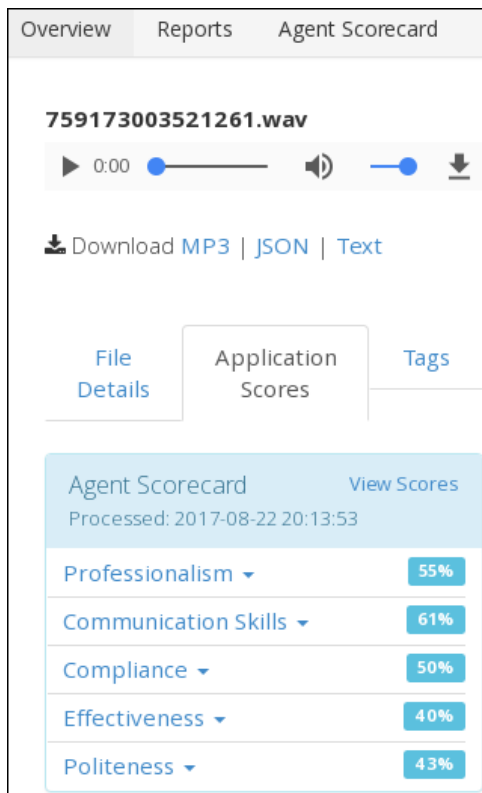
Figure 4.8. Application Scores Tab for a Processed File

4.3.3. Using the Agents View

The Agents View, shown in Figure 4.9, "Application Agents View", enables you to compare application results from each day on an agent-by-agent basis. The Agents View can display either Coverage or Hit/Miss scores for each top-level category as well as an Overall Score that averages the scores for all top-level categories.

Figure 4.9. Application Agents View

These scores are displayed by Agent for top-level categories so you can identify your top-performing agents as well as agents 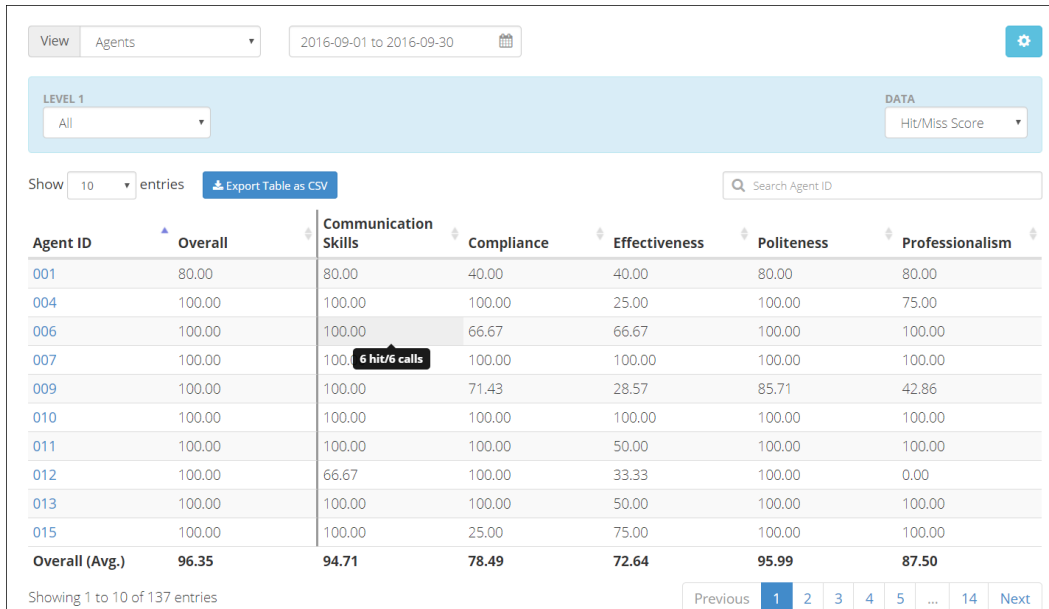who may need additional training. The Agents View also enables you to search for a particular agent in order to evaluate their progress specifically. This can be useful for conducting reviews of new agents or for monitoring agents whose compliance scores have been historically low.

By default, the Agents View is sorted by Agent ID, but can also be sorted by any column by clicking on the header for the column by which you want to sort. This makes it easy to examine agent performance in various ways. For example, in applications based on the Agent Scorecard template, you can click twice on the header for the **Overall** column to sort the view from lowest to highest. You can then select the **Agent ID** entry for the poorest-performing agent to explore audio or transcripts of the individual calls for that agent. In applications that are based on other templates, such as the Customer Experience template, positive and negative experience are called out as explicit categories that you can sort by.

The Agents view also provides ways to refine the data that you are displaying. The Agent view's Search box enables you to search for a particular agent in order to specifically evaluate their progress. To see the calls for a specific agent by date range, users can either:

• Click the Agent ID to display all of the calls for that agent. You can then drill down to do an individual examination of agent performance on specific dates.

• Use the date picker at the center of the screen shown in Figure 4.9 to refine the calls that are displayed on the Agents View screen. Clicking the Agent ID then displays all of the calls for that agent during the selected time period.
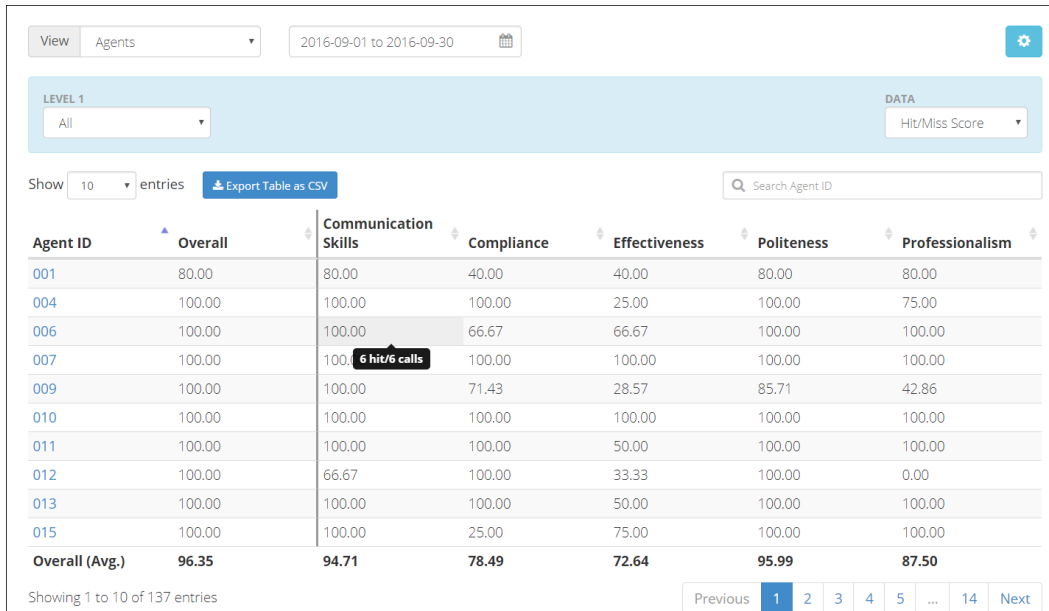
As you move the cursor over any cell in the table, a pop-up displays that identifies the number of calls from which the displayed percentage is derived. This can help you determine the significance of that percentage. For example, 50% derived from 1 out of 2 calls has a different meaning than 50% derived from 50 out of 100 calls. The first can be an aberration; the second seems to indicate a pattern. Clicking on any of the values in the table displays a File Details

page that is populated with the files used to compile that value.

The Blue toolbar shown in the Agents view provides multiple ways of refining the data that is displayed in the Agents view. From left to right:

- **LEVEL 1** - this drop-down enables you to select a complete (**All**) selection of top-level entries to display or identify a specific aspect of a call to use as a top-level (**LEVEL 1**) category. Supported **LEVEL 1** categories are the same as the columns that are displayed when you first explore the Agents view.

- Once you have selected a specific top-level (**LEVEL 1**) category, you can also select a **LEVEL 2** category. A leading asterisk (*) next to a category name in the select list indicates a leaf-level category, meaning that you cannot drill down any further into associated data for the item.

- Clicking a **LEVEL 2** item that is not a leaf-level category (and is therefore not preceded by an asterisk) displays a **LEVEL 3** drop-down category. A leading asterisk (*) next to a category name in the select list indicates a leaf-level category, meaning that you cannot drill down any further into associated data for the item. The application templates that are included with WordBench only go up to three levels, but user-created applications can have up to five levels leaf-level items.

- **DATA** - enables you to specify the primary way by which the data shown in the table is calculated and organized. Possible values are:

  - **Hit/Miss Score** - based on whether matches were found in a category's lower-level categories. Matches are based on the categories and category hierarchies that were defined in the application that produced this agent view.

  - **Avg call duration** - based on the average call duration, which is the time period between answering and terminating the call

  - **Avg call silence** - based on the average amount of silence that occurred during a call

  - **Coverage Score** -based on the average score of all lower-level categories within the current highest level category. Matches are based on the categories and category hierarchies that were defined in the application that produced this agent view.

Finally, the Agents View allows you to export scores for all agents as a CSV file that includes both top-level and lower-level category scores so that you can conduct more in-depth analysis of agent performance. Controls are shown in Figure 4.10, "Agents View: Export and Score Display Controls".

Figure 4.10. Agents View: Export and Score Display Controls

After reviewing or refining the agents, number of agents, time period, categories, and levels for which you want to see results, you can click **Export Table as CSV** to export current data in *Comma-Separated Values* format. Exported data includes both top-level and lower-level category scores (if you have drilled down into a category) so that you can conduct more in-depth analysis of agent performance in other tools where CSV is a supported input format.

4.3.4. Using the Summary View

The application Summary View allows you to compare application scores day by day and to identify changes in call distribution such as an increase in calls about Billing, a decrease in callback rates, or improvements in Agent Performance. As with the Agents View, the Summary View gives you the option to view Coverage or Hit/Miss Scores for top-level categories. The dropdown to switch between score types is shown in Figure 4.11, "Summary View: Export and Score Display Controls".

Figure 4.11. Summary View: Export and Score Display Controls

4.3.5. Viewing Transcript Scores

Application scores can also be viewed for individual transcripts. To view the scores for a particular application on the File Details page, simply click on "View Scores" next to the application name as shown in Figure 4.12, "Application Scores on the File Details Page". The File Details Page displays Coverage Scores for all upper-level categories and Count Scores for leaf-level categories.
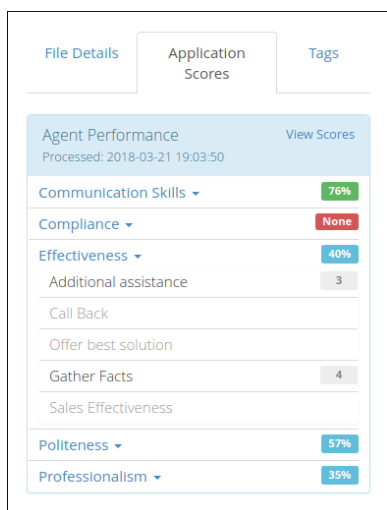

Figure 4.12. Application Scores on the File Details Page

Each top-level category can be expanded to see the breakdown of lower-level category scores. These scores are updated each time the application is reprocessed. This allows you to get a quick snapshot of call content, agent performance, call resolution, and more. WordBench applications can also be used to partially automate the process of manual agent evaluation by selecting a call to sample and viewing the distribution of scores for each category.

Application scores are also included automatically in the JSON transcript for each call under the "scorecard" object. JSON transcripts contain Coverage and Count Scores for the entire application.

JSON files that are exported from the File Details page always contain the most recent scores. JSON files that are exported in bulk from the Folders page or via POST may only contain the application scores from the first time that the file was transcribed, unless the **update JSON** was selected during application reprocessing.

5. Reports

The **Submenu** of the Dashboard page contains the **Reports** tab (Figure 5.1, "Location of Reports"). There are two types of reports generated by WordBench: **Monthly** and **Daily**, ordered by date. The daily reports summarize the activity of the day, while the monthly reports provide statistics about the last month's calls. Each CSV data file provides the name of each audio file with its corresponding Agent ID, date, time, and duration. These report files, which can be viewed using Excel, provide "big picture" summaries of the data.
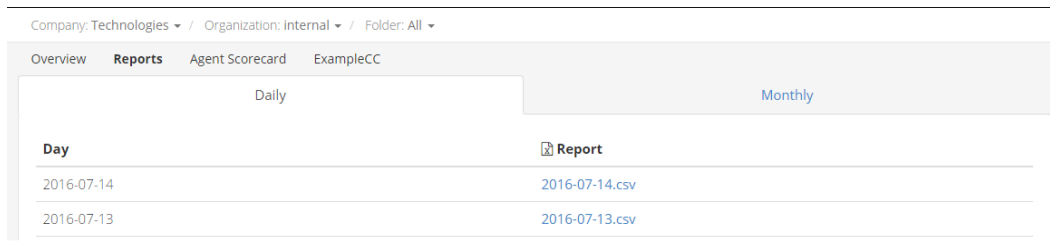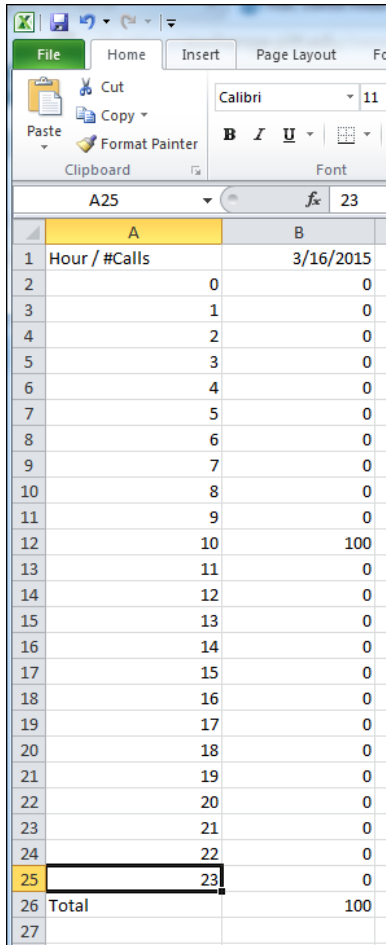
Figure 5.1. Location of Reports

The CSV file has multiple tables, each with their own headers that describe what each column contains. This section will detail the indicators measured in each report.

Hours/#Calls, Day 1, Day 2, Day 3: This section list the number of calls made each hour of the day. There are 24 rows, one for each hour, and one column for each day of the reporting period for a monthly report. Figure 5.2, "Calls per hour Table"

Agent ID, Shortest/Longest Average Call Durations, Shortest Avg. Call Durations: This section lists the top and bottom 20 Agent IDs in terms of their average call durations, both shortest and longest.

Agent ID, Highest #Calls, Avg. Call Duration: This section lists the top 20 Agent IDs with the most number of calls along with their average call durations.

Figure 5.2. Calls per hour Table

Avg. call duration (Agent/Client emotion): These tables list the average duration of calls according to agent and client emotion. The four emotional values are positive, negative, improving, and worsening. These values are sorted alphabetically by emotion. Figure 5.3, "Emotion Tables"

% of calls (Agent/Client emotion): This table lists the percent of calls for each emotion experienced by agents and clients. The four emotional values are the same as those in the table above, and are sorted alphabetically by emotion. Figure 5.3, "Emotion Tables"

64	Avg. call duration (Agent emotion: improving)	Avg. call duration (Agent emotion: negative)	Avg. call duration (Agent emotion: positive)	Avg. call duration (Agent emotion: worsening)
65	0:03:28	0:04:09	0:03:46	0:03:29
66				
67	Avg. call duration (Client emotion: improving)	Avg. call duration (Client emotion: negative)	Avg. call duration (Client emotion: positive)	Avg. call duration (Client emotion: worsening)
68	0:03:53	0:04:00	0:03:49	0:03:24
69				
70	% of calls (Agent emotion: improving)	% of calls (Agent emotion: negative)	% of calls (Agent emotion: positive)	% of calls (Agent emotion: worsening)
71	29.53	25.17	28.86	16.44
72				
73	% of calls (Client emotion: improving)	% of calls (Client emotion: negative)	% of calls (Client emotion: positive)	% of calls (Client emotion: worsening)
74	26.85	29.19	24.16	19.8
75				

Figure 5.3. Emotion Tables

Agent ID, Highest Avg. Silence %, Agent ID, Lowest Avg. Silence %: This report lists the top and bottom 20 Agent IDs on the basis of the average percentage of silence in their calls. Percentage of silence is calculated as total non-speech duration divided by total call duration.

Agent ID, Most Speech Clarity, Agent ID, Least Speech Clarity, Agent ID, Most Overtalk Agent ID, Least Overtalk: This section lists the top and bottom 20 Agent IDs on the basis of the average agent-initiated overtalk in their calls. Agent- initiated overtalk is when the agent starts talking while the client is still talking.

This table lists the top and bottom 20 Agent IDs on the basis of their overall speech clarity. Speech clarity scores are based on the confusability of word hypotheses. The higher the score, the clearer the speech.

Agent ID, Highest Avg. Talk Time, Agent ID, Lowest Avg. Talk Time: This section lists the top and bottom 20 Agent IDs on the basis of their average talk time per call. This is different than the Average Call Duration indicator, which measures length of call regardless of speech duration.
Avg. Agent Talk Time, Avg. Client Talk Time: This section displays the average talk time across all calls for agents and for callers. Figure 5.4, "Tables: Average Talk Time, Number of Calls by Gender, and Duration of Calls by Gender"
Male Agent #Calls, Female Agent #Calls, Male Client #Calls, Female Client #Calls: This section lists the number of calls with male agents vs. with female agents, as well as male clients vs. female clients. Figure 5.4, "Tables: Average Talk Time, Number of Calls by Gender, and Duration of Calls by Gender"
Male Agent Avg. Call Duration, Female Agent Avg. Call Duration, Male Client Avg. Call Duration, Female Client Avg. Call Duration: This section displays the average call duration for all calls when the agent is male vs. when the agent is female, and also for when the client is male vs when the client is female. Figure 5.4, "Tables: Average Talk Time, Number of Calls by Gender, and Duration of Calls by Gender"

554	Avg. Agent Talk Time	Avg. Client Talk Time		
555	0:02:01	0:01:29		
556				
557	Male Agent #Calls	Female Agent #Calls	Male Client #Calls	Female Client #Calls
558	19	81	32	68
559				
560	Male Agent Avg. Call Duration	Female Agent Avg. Call Durati	Male Client Avg. Call Duration	Female Client Avg. Call Duration
561	0:08:17	0:05:09	0:07:17	0:05:02
562				

Figure 5.4. Tables: Average Talk Time, Number of Calls by Gender, and Duration of Calls by Gender