Note

Before using this information and the product it supports, read the information in "Notices" on page 33.

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Product Information

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Chapter 1. What is Watson Analytics?

We all ask questions about our data every day.

Some of our questions are about a status or situation. What is the revenue by country in Europe? What is the trend of my product costs in the United States? What is the breakdown of revenue by country and product line? Some of our questions are about why something happened. Why did certain sales deals close while others did not? Why do some customers leave? Asking questions and exploring your data is what Discover is all about.

When you ask these questions and discover new insights about your organization, you want to share them with other people in your organization. You can quickly and easily create beautiful dashboards and infographics in Display.

In short, when it comes to data, we want to know what is happening, why it is happening, and what insights need to be communicated with others.

IBM® Watson Analytics™ can help you understand your data better and find insights that are hidden in your data. You can get answers and new insights to make confident decisions in minutes – all on your own.

Scenario for the tutorial

In this tutorial, you’re a Human Resources manager who has been given a big project – you’ll be leading a new training initiative for your entire global company. You want to better understand where the training budget is currently invested in all areas of the company because at this moment, you just know how it’s spent in your area of the company.

We know your time is valuable. We created this tutorial to guide you through some basic concepts and features using a sample data asset so that you can quickly learn more about Watson Analytics and its innovative way of bringing you closer to your data. Then you can add your own data and start discovering new insights in your business.

Something to note before you start: the screen captures in this tutorial show the Professional edition of Watson Analytics in the Google Chrome browser. If you use a different browser or a different edition of Watson Analytics, the product may look a little different.

Accessibility features and the tutorial

Watson Analytics HTML documentation has accessibility features. Go to IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter/SS4QC9/kc_gen/com.ibm.solutions.wa.doc_no_category_toc-gen1.html) for the accessible version of the documentation. PDF documents are supplemental and, as such, include no added accessibility features.
Chapter 2. Uploading data

Let's start by getting data for the tutorial. There are lots of sample data assets on the IBM Watson Analytics Community, including the one that's used in this tutorial.

About this task

Here's a short video that gives you a look at some of the details about adding data in Watson Analytics.

https://youtu.be/VlwBJuQGdWg

Procedure

1. Go to [Human Resources Training on the Watson Analytics Resources page](https://www.ibm.com/communities/analytics/watson-analytics-blog/human-resources-training/)
2. Select “WA_HR_Training 2013-16.csv”. Depending on your browser, you may be asked what you want to do with it. Tap Save.
3. In Watson Analytics, tap New data.
4. Tap Local file and browse to where you saved “WA_HR_Training 2013-16-1.csv”.

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5. Tap the **Import** button.

While uploading the file, Watson Analytics analyzes the data and metadata, creates hierarchies from the metadata, and identifies concepts to use in analyses.

The data asset appears as a tile in the **Data** landing page and you’re ready to get to work.
Chapter 3. Asking questions and discovering insights

Now that you’ve added sample data, let’s start discovering new insights in the data.

About this task

Here’s a short video that gives you a look at some of the details about discovering insights in IBM Watson Analytics.

https://youtu.be/8tN0qc0Y90s

Procedure

1. On the Data landing page, tap the “WA_HR_Training 2013-16-1” tile. You can ask a question, select a starting point that we created for you after analyzing your data, or create a visualization on your own. Let’s ask a question.

2. If you’re wondering how to ask a question, there’s a coach to help you. Tap How to ask a question. You see categories of questions. Take some time to look through the questions in each category. If you select one of the questions, you’ll see a new set of starting points.
3. But for the tutorial, tap to return to previous page where we will ask the question “what is the cost of courses by organization?” Press Enter. The question provides a context for the starting points so now the new starting points are marked as most relevant or somewhat relevant. Starting points are sorted by relevancy starting with the most relevant.

4. Select the “What is the breakdown of Course cost by Organization?” starting point.

take a look at the visualization, which is a treemap. The size of each box in the treemap tells you the amount of training spent by each organization.
5. You can easily get more details about the data that a part of a visualization represents. Let’s look at the numbers for one of the largest boxes. Touch and hold, or hover over, “GO Central Europe operations”.

Before going further, take a look at the Discoveries panel.
Without you having to do a thing, IBM Watson Analytics identifies patterns and associations in your data and automatically creates other starting points for you to explore. As you change the data in the visualization, you'll see new starting points that reflect the changes you make. Because Watson Analytics is constantly improving the smarts that create these starting points, you might not see the same discoveries that are shown in the tutorial.

You'll get to use the **Discoveries** panel later in the tutorial.

6. This visualization shows you data for all years but let's find out how costs have evolved over time. The data slots at the bottom of the window show where you can add data.

   Complete the following actions:
   a. Tap **Multiplier**.

Last updated: 2017-05-10: Getting started with Watson Analytics
b. Scroll down and tap **Year**.

c. Tap **Done**.

You see the cost for courses by year.

7. Double-click the “Untitled 1” tab above the visualization and change it to “Course cost”.

Chapter 3. Asking questions and discovering insights
8. To explore the data from other perspectives, let’s add one of the starting points from the Discoveries panel now. Tap “Course cost by Department”.

Improvements are constantly being made to the smarts that create the starting points and you might not see this discovery in the panel. If this has happened, complete these actions:

- Tap next to the “Course cost” tab.
- Enter the question “how do the values of course cost compare by department?”
- Select the starting point with the same name.

On a new tab, you see course costs by department.

9. Let’s find out how many new hires are planned for each department. Tap Course cost in the interactive title for the visualization. Tap External hires.

When you tap the blue text in the title, you see the most relevant columns first but you can select any column.
You see that the Sales departments hire the most external people followed by the Finance departments.

10. Let's use a different visualization type for this discovery. Tap **Visualization** and select **Packed bubble**.

Notice how the **Discoveries** panel is automatically closed. To reopen it, tap **Discoveries**.
11. Close the **Visualization** side panel and change the “Untitled 1” tab to “External hires”.

12. We have info about costs and hiring. Now let’s see what is driving expenses. To create a different starting point, tap next to the “External hires” tab.

13. Ask the question “What drives expense total” and then select the starting point with the same name.
Watson Analytics applies statistical algorithms to the data to discover insights, patterns, and correlations in the data. The spiral visualization shows you the key drivers for the target, Expense total. The closer the driver is to the center, the stronger it is.

14. To have more room for the visualization, tap to hide the Discoveries panel. Then change the tab name to “Expense total”.

15. Tap, or hover over, a dot in the spiral visualization to see which driver is highlighted in the Drivers list.

You see the predictive strength of each driver. Predictive strength measures how accurately a driver predicts a target. A driver of 100% perfectly predicts a target. In this case, the combination of Position and Organization impacts Expense total with 94% accuracy.
16. To add the detailed visualization for the **Position and Organization** driver, tap ✗ next to it.
You see a new tab that contains information about how position and organization affect the target, Expense total.

17. To have more room for the visualization, hide the **Discoveries** panel.

18. Change the “Untitled 1” tab to “Drivers”.

19. Save the discovery set in the **Personal** folder and name it “Tutorial - discoveries”.

20. Return to the landing page.
Chapter 4. Creating a display to share with others

You can easily communicate the analysis and insights that you discover in IBM Watson Analytics by combining visualizations with text, images, and shapes. Create a dashboard, infographic, or Expert Storybook where you can monitor and share these insights. In this tutorial, let's create a dashboard.

About this task

Here's a short video that gives you a look at some of the details about getting started with Display in Watson Analytics.

https://youtu.be/WKRiZF3Bn-Y

Procedure

1. On the landing page, tap Display and then tap New display.
2. Complete the following actions:
   a. Name the display “Tutorial - dashboard”.
   b. Ensure that the Dashboard display type is selected.
   c. Tap Create.
3. You see predefined layouts that contain grid lines for easy arrangement and alignment of visualizations and other elements in a display. Let's select the layout that has 4 panes for our dashboard.
4. Let's add the discoveries that you created in Discover. Open the Personal folder to see your discovery set.
5. Expand “Tutorial - discoveries”.

6. Drag “Course cost” to the top left pane and drop it on the square that appears in the pane.
You can change the data that’s shown in the discovery if you need to. Simply tap the discovery and then tap \( \square \). For example, you can use the interactive title, change the columns in the data slots, or change the visualization type.

7. Add “External hires” to the bottom left pane.
8. Add “Expense total” to the top right pane.

9. Add “Drivers” to the bottom right pane.

10. Let’s add a filter to the current tab of the display to see the impact of the duration of courses on the visualizations. Tap Filters.
11. Tap next to Course days to add it to the This tab filter area. Close the Filters panel to have more room on the canvas.

12. To apply the filter, tap Course days in the This tab filter area. Move the slider to show courses with a shorter duration, or type a new end point. We picked 14.5 as the end point but feel free to select a different one. As you move the slider, the visualizations change to reflect the filter.
13. To close the filter box, tap **Course days** again.
Info about what is filtered is shown in the **This tab** filter area and under the title for each visualization.

14. Save the dashboard to your **Personal** folder.
15. To find out how to enhance the dashboard, visit the **Docs** in the **Help** menu. Here are some ideas:
   - Add tabs to the display for additional discoveries.
   - Use text widgets to annotate the dashboard with descriptions or to add a title.
   - Provide more info by adding media and links to web pages.
   - Format the dashboard, such as changing the colors or theme.
   - Add images and shapes to add visual appeal.

16. Tap **Share** to share this dashboard. If you are using the Professional edition of Watson Analytics, you can also move it to a shared folder where other users in the account can use it.
17. Return to the landing page.
Chapter 5. Social media

You can gain insight into social media discussions that are related to your key focus for analysis.

You can mine social media in different ways in IBM Watson Analytics:
- You can add a snapshot of Tweets and their metadata as a data asset to explore in Watson Analytics if you are subscribed to the Professional edition or the Plus edition.
- You can purchase IBM Watson Analytics for Social Media and use it to analyze social media content in visualizations that we create for you.

Adding and exploring Tweets

As you continue to develop your company’s pilot program, you are asked to analyze external social media data and identify positive ways to deliver this training. You decide to use hashtags about e-learning and mobile learning.

About this task

You can complete this task only if you are subscribed to the Professional edition or the Plus edition of Watson Analytics.

Procedure

1. On the landing page, tap Data and then tap New data.
2. On the Import tab, tap Twitter.
3. Complete the following actions:
   a. Enter these hashtags and separate them by a space: #elearning #mlearning
   b. To get a reasonable and current sample size and quick return on the query, enter a date range that starts a week before today. Or use the date ranges that are shown in the screen capture.
   c. In the Data asset name box, highlight the default name and replace it with “Tutorial - Twitter”.

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4. Tap Import.

5. Tap the data asset that was created.

IBM Watson Analytics analyzes sentiment and generates some starting points for you.

6. Enter the question “compare Tweets by matching hashtag and sentiment?”
Then, press Enter.

7. Tap the starting point that is called “How does the number of Tweet compare by Matching Hashtags and Sentiment?”
You see that there is a lot more discussion around e-learning.
8. Return to the landing page.

Results

You created a data asset of hashtags that you then explored in Watson Analytics.

Analyzing social media topics and trends

You’ve explored some hashtags and now you want to dive deeper into an analysis of what’s being posted about some of the major ways to deliver training.

About this task

IBM Watson Analytics for Social Media helps your organization answer the following types of questions:

- What do consumers say and hear about my brand?
- What are the most talked about product attributes in my product category?
- Is the feedback good or bad?
- What is the competition doing to excite the market?
- Is my employer’s reputation affecting my ability to recruit top talent?
- What are the reputations of the new vendors that I am considering?
- What issues are most important for my constituency?

In this tutorial, we’ll mine social media posts to get a broader and deeper analysis of what is being shared about e-learning and mobile learning.
Procedure

1. Tap the arrow at the far left on the app bar.

2. Tap IBM Watson Analytics for Social Media.

3. Tap New project.

4. On the Create tab, name the project “Tutorial - Social Media” and tap Next.

5. You are in the Topics area where you specify the keywords that you want to search for. In the Enter a topic box, enter “#elearning” and tap + .

This is one of the hashtags that you retrieved from Twitter in “Adding and exploring Tweets” on page 21.
6. Let’s add synonyms to the topic. Tap “#elearning” and enter the following keywords one at a time in Topic keywords:

- @elearnindustry
- electronic learning
- e-learning
- e learning

Here’s some info about keywords:

- Keywords are not case-sensitive. For example, the keyword “electronic learning” also retrieves the keyword “Electronic learning”.
- Words in documents that start with “@” or “#” are matched to keywords that you specify that don’t start with those characters. For example, if you specify “elearnindustry”, “@elearnindustry” and “#elearnindustry” are also retrieved. However, the reverse is not true. If you specify “#elearnindustry”, “elearnindustry” and “@elearnindustry” aren’t retrieved.
• Accented characters in keywords also match similar non-accented characters in documents. For example, “á” in a keyword matches “a” in a document.
• Non-accented characters in keywords aren’t matched with accented characters in documents. For example, “a” in a keyword doesn’t match “á” in a document.
• Diacritics in keywords also match their phonetic equivalents in documents. For example, “ä” and “ö” match “ae” and “oe” respectively.

As you enter keywords, Watson Analytics for Social Media captures keywords and related words in a sample of documents from these keywords. You can use the suggestions as Context keywords and Exclude keywords. You might see different suggestions based on the inherently dynamic nature of social media.

7. Let’s add “training” as a context keyword.
8. Let’s exclude “game” from our analysis.

9. Now let’s add mobile learning as a topic. Tap and enter “#mlearning”.
10. Tap “#mlearning” and add the following keywords:
    To Topic keywords:
    • mobile assisted learning
    • mobile learning
    • m-learning
    • distance learning
    To Context keywords:
    • training
    To Exclude keywords:
    • game
11. To create a richer understanding of these topics about e-learning and mobile learning, tap Themes.

12. You want to find out whether social media posts talk about where the training is provided. In Theme keywords, enter these keywords:
   - workplace
   - university
   - high school

13. Let's add synonyms to these keywords to capture as much info as we can. Tap “workplace” and add the following Theme keywords:
   - factory
   - office
   - restaurant
   - store
14. Tap and then tap “university”. Add the following Theme keywords:
   - college

15. Tap and then tap “high school”. Add the following Theme keywords:
   - secondary school

There are other areas in Watson Analytics for Social Media: Dates, Languages, and Sources. By default, all sources are mined for topic mentions in all supported languages in the past four weeks.

If you use different dates than in the tutorial, you might see different results in the analysis. If you want to match the tutorial exactly, change the date range to match the screen capture. But you don't have to do this.

16. We're ready to create and explore the analysis. Tap Create data set.

17. When the data set is created, tap View analysis to explore the visualizations that we create for you. You might see different visualizations based on the inherently dynamic nature of social media.

18. On the side is the Mentions panel where you can view the text that surrounds where your topics are mentioned. If you have the 10-day trial edition, you can't see the text of mentions. If you have a paid subscription, please explore the Mentions panel on your own and, if you need more info, check out the Docs.

The first visualization that you see is the Topics visualization, which shows you trends and share of voice for the topics that you defined.
19. Let’s explore a few of the visualizations.

a. To have more room for the visualizations, close the Mentions panel.

b. To deepen your analysis of the topics that you defined, select Themes from the visualizations list.

Here we see that the e-learning topic appears the most in “workplace” but many mentions didn’t talk about the themes that we specified.

c. To understand the tone of the social media content, select Sentiment. Sentiment terms are words that measure the tone of a mention. A mention is categorized as ambivalent when it has the same number of positive and negative sentiment terms. A mention is categorized as neutral when there are no sentiment terms that are detected in it.

Here we see that there are more neutral mentions for both topics and many negative mentions for #mlearning.
d. Take a look at the other visualizations on your own.

20. Return to the landing page.

Results

Because you can quickly tap into social media data and understand the sentiment of a series of disparate or competitive hashtags through Watson Analytics, you can now focus on key aspects of your business that might have seemed elusive in the past. This provides a means to better align with departmental goals and even organizational agendas by using the power of Watson Analytics.
Chapter 6. What's next?

You learned how easy it is to get started with IBM Watson Analytics. Now you can add your own data and start discovering new insights about your business. Here are some tips to help you get going.

Add more data

You have several options for adding more data to Watson Analytics:

• In Watson Analytics, tap New data. Then, on the Import tab, tap Sample data.
• Add other sample data assets from the Watson Analytics community.
• Upload your own data. You might want to look at your data files to see whether the files need cleaning before uploading. Visit the Docs to learn about cleaning your data.

Learn more

There is much more you can do in Watson Analytics so check out the Help menu. Expand Docs or Community to see the sections that you can jump to.

We also have videos on YouTube (https://www.youtube.com/channel/UCCf9rMXSBbnck252FD3XIqA).

Wait, there's more!

If you are subscribed to the Professional edition or the Plus edition of Watson Analytics, you have access to more types of data:

• Twitter metadata
• Cognos® BI reports
• Data from SPSS® Statistics .sav files
• Databases such as IBM DB2®, IBM dashDB™, IBM SQL Database for Bluemix®, Microsoft SQL Server, MySQL, Oracle, PostgreSQL

You also have access to other features such as:

• More storage space
• Larger data assets
• Accessing data in the cloud, such as Box, Dropbox, and Microsoft OneDrive
• Sharing assets with other users in the same account

If you want to upgrade to one of these editions, tap and tap Account settings. Then tap Learn more under Subscription to start upgrading your subscription.

Have fun!

Let’s recap: you learned how to upload data, how to ask questions and discover insights in the sample data, and how to create a dashboard. Now you’re ready to use Watson Analytics with your data.
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