

Getting Started with Minitab Solution Center

A large, decorative blue curved shape that starts from the left edge of the page and sweeps upwards and to the right, ending near the bottom right corner. It consists of two concentric-like curves, creating a wide, flowing band of blue.

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1. Introduction to Solution Center workflows

Use the Minitab Solution Center for all your data analytics projects.



The Minitab Solution Center provides the following workflows.

Analytics: Analyze your data in Minitab Statistical Software

After quick preview of your data via the data center or the dashboards, you may notice relationships in variables and trends that you need to further investigate.

Use Minitab Statistical Software to apply modern data analysis techniques for the exploration and modeling of your data.

Brainstorm: Brainstorm creative solutions

The brainstorm tool contains many ways to map out and identify relevant elements of your processes or projects. Use AI to help generate ideas to improve your brainstorming capabilities.

Data Prep: Clean and prepare your data for analysis

From the Minitab Data Center, you can preview your data and perform necessary data prep steps. You can select from many basic steps to apply to the entire data set or separate columns.

You can save your data prep steps in a data center file to apply to other data sets.

Dashboard: Create and share customized dashboards

Use Minitab Dashboards to monitor and analyze critical metrics through interactive charts, graphs, and other visualizations.

Learn about this guide

Use this tutorial to learn about the most commonly used features and tasks in the Minitab Solution Center.

What's next

Let's get started!

Go to [Data set description](#) on page 4 to learn about the example used throughout this tutorial.

2. Data set description

Scenario: A compliance team is concerned about fraud detection accuracy as well as the key drivers that cause fraudulence in the automotive industry.

Download data: [Insurance Fraud Data](#)

Worksheet column	Description
claim_number	The claim identifier
age_of_driver	Age of the driver
gender	Gender of the driver: M or F
marital_status	Marriage status of the driver: 0 or 1
safety_rating	Safety rating: 2 - 100
annual_income	Annual income of the driver
high_education	Education status of the driver: 0 or 1
address_change	Address change status of the driver: 0 or 1
property_status	Does the driver own or rent
zip_code	ZIP code
claim_date	The date the claim was made
claim_day_of_week	The day of the week the claim was made
accident_site	The location of the accident: highway, local, parking lot
past_num_of_claims	Total number of previous claims
witness_present	Was a witness present: 0 or 1
liab_prct	The liability percentage: 0 - 100
channel	How claim was initiated: broker, phone, online
police_report	Was a police report filed: 0 or 1
age_of_vehicle	Age, in years, of the vehicle: 0 -14
vehicle_category	The type of vehicle: compact, large, medium
vehicle_price	The price of the vehicle
vehicle_color	The color of the vehicle
total_claim	Total claim amount in dollars
injury_claim	Injury claim amount in dollars
policy_deductible	The amount in dollars of the policy deductible
annual_premium	The annual policy premium
days_open	Number of days claim is open
form_defects	Number of errors on form: 0 to 13
fraud_reported	Whether fraud was reported: Y or N

What's next

Learn how to sign into your online repository to get started.

Go to [Sign into a repository](#) on page 6.

3. Sign into a repository

Sign into your online repository to easily save all your Minitab Solution Center files in one location.

1. From the Minitab Solution Center home page, sign into an online repository.
2. Select **Settings** in the repository section of the landing page.



3. Ensure that **Autosave** is on.
4. If you want, select **Change** to browse to the location where you want to save your files and then choose **Select**. Your save location is displayed.
5. Select **OK**.

What's next

Learn how to prep your data in the Minitab Data Center.

Go to [Prep your data](#) on page 7.

4. Prep your data

Open your data source

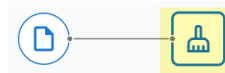
From the Minitab Solution Center home page, you can access the Minitab Data Center.

1. From the Solution Center home page, select **Data Prep**.
2. Select **Add Data**. Sign into an online repository. You can also add a local data file.
3. Browse to the file location, then select **Open**.

A schematic diagram represents the data processing steps.

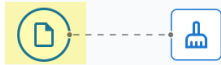
Cleanup view

You can begin cleaning your data when you are in the **Cleanup** view.



Data Source view

If you need to change the data set schema or any settings that affect the entire data set, select the data source file icon to open the **Options** panel.



For more information, go to [Edit the data set schema](#) or [Set data source options](#).

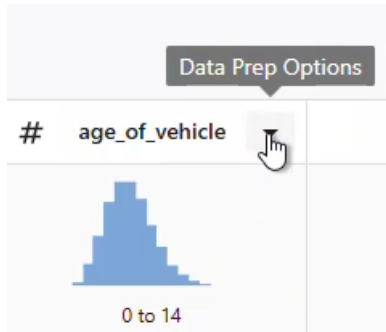
Data prep steps

In this example, a compliance team is concerned about fraud detection accuracy in the automotive industry; however, the data need prep before analysis can begin. Follow these steps to prepare *insurance_fraud_data.csv* for further analysis.

1. Open **Insurance Fraud Data** in the Minitab Data Center.
2. Make sure you are in the **Cleanup** view.



3. Select the column and open the **Data Prep Options** dropdown menu to access the column cleanup options.



4. For claim_number, change the data type from numeric to text.
5. For claim_number, prepend # to the column values.
6. For age_of_driver, filter to only include drivers that are less than or equal to 100 years old.
7. In gender, change *M* to *male* and *F* to *female*.
8. For annual_income, filter to only include drivers that make more than 1.
9. For address_change, change the data type from numeric to text.
10. In address_change, change 1 to yes and 0 to no.
11. For zip code, change the data type from numeric to text.
12. Use **Advanced Sort** to sort by fraud, injury claim, and ZIP code.

Use Minitab AI to clean your data

The Minitab Data Center provides a conversational interface that guides your data preparation, while in the **Cleanup** view. For the example above, you can enter the following text into the **Minitab AI** prompt to get the same results as individual steps.

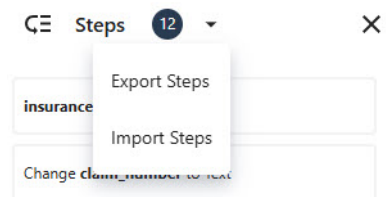
Make claim numbers to text. Add the number symbol to claim numbers. Remove drivers that are older than one hundred. Change m to male and f to female. Remove drivers that don't have a valid income. Change address_change to text. Make 1 to yes and 0 to no for address changes. Sort by fraud, injury claim, and zip code.

For more information on using **Minitab AI** in the Data Center, go to [Using Minitab AI to clean your data](#).

Export data prep steps

After you apply all the prep steps, save the steps to use for future data sets with the same columns. To save the steps, export them as a .mdcs file.

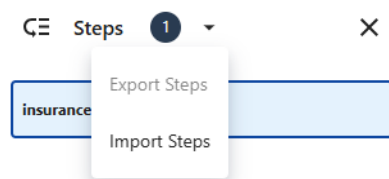
1. In the Steps pane on the left, select **Export Steps** from the dropdown menu.



2. The file is saved to your downloads folder or other save location and uses the same name as your data file. Change the name accordingly.





Import data prep steps

To apply the steps to a new data file, import them as a .mdcs file. Select **Import Steps** from the dropdown menu in the **Steps** pane.



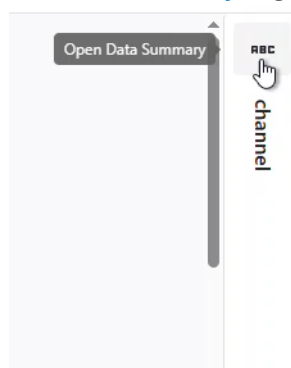
Explore data summaries

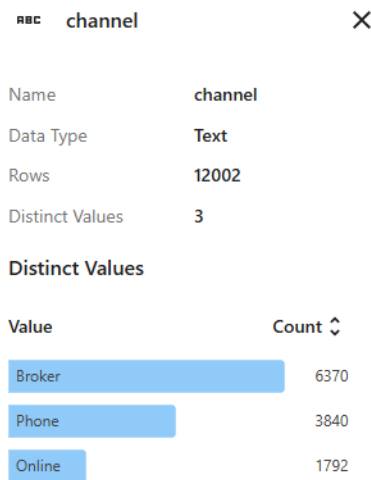
Each column has a summary that shows the shape of the data, the range of the data, and an icon that represents the data type.

 channel ▼	 # days open ▼
 3 levels	 2.30331 to 15.1772
Online	3.19745
Online	3.83653
Online	4.18795

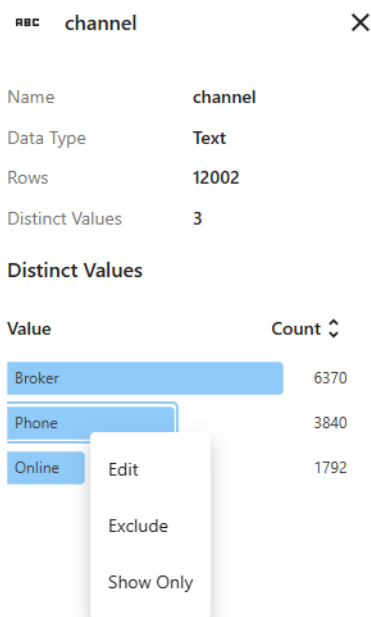
A quick look at the column graphical summaries show that **channel** has 3 levels and **days open** shows a bimodal distribution.

Open the **Data Summary** to get more information on the summary statistics on these columns.





The data summary for **channel** shows the frequency for each of the 3 levels.



Use the right-click menu to edit the grouping label, exclude the group from the data set, or show only the rows that contain this value.

What's next


Because the data for **days open** indicate two distributions, the insurance company wants to look at this further. Go to [Analyze your data](#) on page 11.

5. Analyze your data

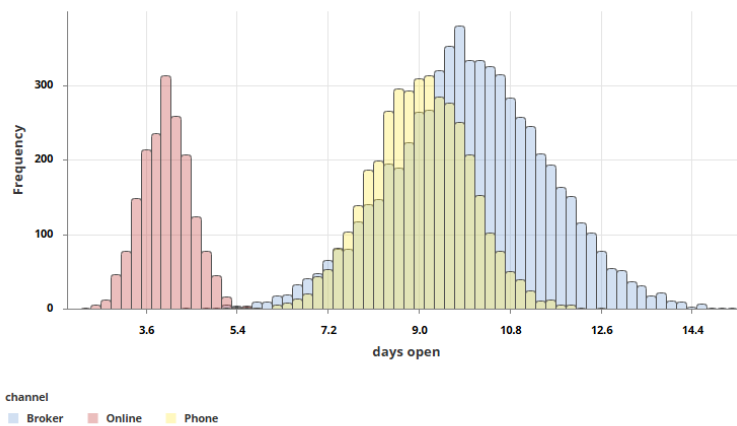
Use the Graph Builder to visualize your data

This example uses the prepped data set from the [Prep your data](#) on page 7. Complete the following steps to explore data with the Graph Builder.

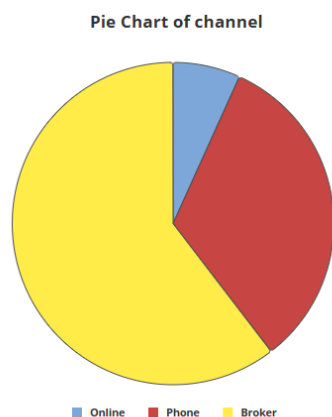
1. From Minitab Solution Center Data Prep, select **Open in > New Minitab Project**.
2. Select the drop down at the top of the page and enter *Insurance Fraud analysis* in **File Name**.

Insurance Fraud analysis -  Saved ▼

3. Choose **Graph > Graph Builder**.
4. In **Variables**, enter *days open* and *channel*.
5. In **Gallery**, use the gallery scroll bar to visualize the data in different graph types. Select **Histogram**.
6. Select **Create**.
7. Choose **Graph > Graph Builder**.
8. In **Gallery**, select **Pie Chart**.
9. Select **Create**.



This histogram shows the three distinct distributions by channel.

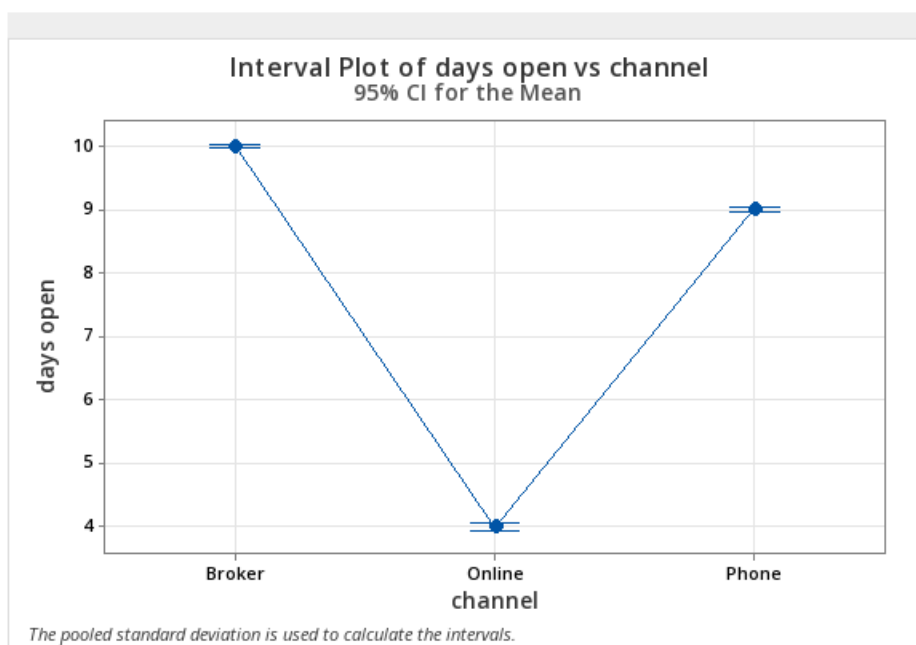


This pie chart shows the percentages of the three channel types.


Use One-Way ANOVA to determine differences

From the graphical visualizations, there appears to be a difference in the amount of time it takes to close a claim that depends on the channel. To statistically test this difference, the insurance company performs a one-way ANOVA test.

1. Choose **Stat > ANOVA > One-Way**.
2. From the dropdown, select **Response data are in one column for all factor levels**.
3. In **Response**, enter *days open*.
4. In **Factor**, enter *channel*.
5. Click **OK**.



Generate AI interpretation of results

Use Minitab AI to evaluate your results. Simply select the Minitab AI button , and your tables are transformed into clear, easy-to-understand natural language summaries. Minitab does not use or save any user input or AI-generated output.

Method

Null hypothesis All means are equal
 Alternative hypothesis Not all means are equal
 Significance level $\alpha = 0.05$
Equal variances were assumed for the analysis.

Factor Information


Factor	Levels	Values
channel	3	Broker, Online, Phone

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
channel	2	50962	25480.8	16137.71	0.000
Error	11999	18946	1.6		
Total	12001	69908			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.25657	72.90%	72.89%	72.89%

 Minitab AI




Summary of Statistical Analysis

Purpose

The analysis aims to determine if there are significant differences in the average number of days open for claims based on the channel through which the claims were filed (Broker, Online, Phone).

Key Findings

- Significant Differences Detected:** The ANOVA results indicate a statistically significant difference in the means of days open across the three channels, with a P-Value of 0.000, which is less than the significance level of $\alpha = 0.05$.
- Mean Days Open by Channel:**
 - Broker:** The average days open is 10.0163 with a standard deviation of 1.5282.
 - Phone:** The average days open is 9.0214 with a standard deviation of 0.9719.
 - Online:** The average days open is significantly lower at 3.9964 with a standard deviation of 0.4988.
- Model Fit:** The model explains 72.90% of the variability in days open, indicating a good fit for the data.
- Confidence Intervals:** The 95% confidence intervals for the means are:
 - Broker: (9.9855, 10.0472)
 - Phone: (8.9817, 9.0612)
 - Online: (3.9383, 4.0546)
- Equal Variances Assumed:** The analysis assumes equal variances across the groups, which is a standard practice in ANOVA, supporting the validity of the results.


Important: AI technology may make mistakes. It is the user's responsibility to ensure the output is accurate, appropriate, and meets your organization's standards and requirements. For more information, see the [Minitab Trust Center](#).

What's next

Because there is a significant difference between channels, the team wants to explore how to open more claims online versus through a broker or over the phone. Go to [Brainstorm ideas](#) on page 14.

6. Brainstorm ideas

Choose your brainstorm tool

To select a tool, go to the [Home](#)  page and select **Brainstorm**. All brainstorming tools encourage creative thinking for identifying new ideas and solving problems. The Minitab Brainstorm tool offers several different ways to organize your ideas.

- Fishbone (Cause and Effect)
- Man Machine Materials
- CT Tree
- Mind Map
- Idea Map
- 4S
- 8P

Generate a brainstorm list


In a fishbone, an idea map, CT tree, or mind map, you can quickly generate a brainstorm list by typing items in the task pane, or by importing variables from other tools in your project.

You can also use Minitab AI to generate ideas. To generate more precise results, enter a custom prompt. Minitab does not use or save any user input or AI-generated output.

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Use AI to generate affinities for an idea map

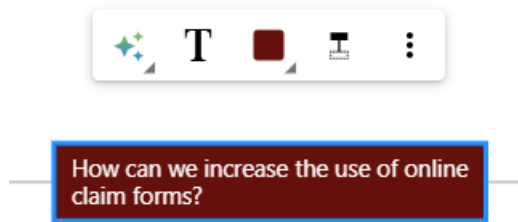
In this example, a quality improvement team would like to brainstorm ideas to increase the proportion of online claim requests. Currently, claims are accepted over the phone and online and it is faster and more accurate to submit online claim requests. The team decides to quickly generate brainstorm ideas using Minitab AI.

1. Go to the [Minitab Solution Center Home](#)  page.
2. Select **Brainstorm** and then select **Idea Map**.

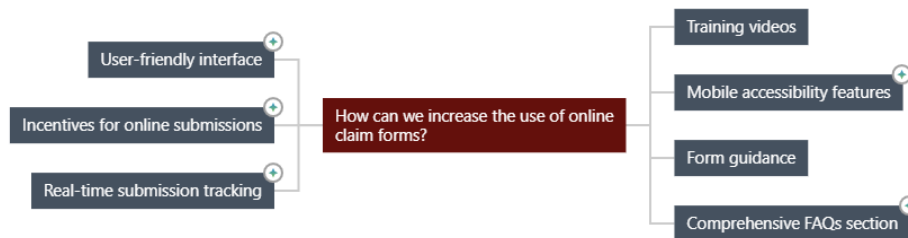


3. Select the drop down at the top of the page and enter *Insurance Fraud idea map* in **File Name**.
4. In Central Question, replace the text with *How can we increase the use of online claim forms?*

5. Select the central question of the idea map to access the context menu. Then open **AI Options**.



6. Select **AI Custom Prompt** and enter the question you want to generate ideas for. For example, *How can we increase the use of online claim forms?*
7. Select **Generate**.
8. Review the results, then drag the new nodes to arrange the diagram as needed. You can rename nodes or add and delete nodes to customize your idea map.

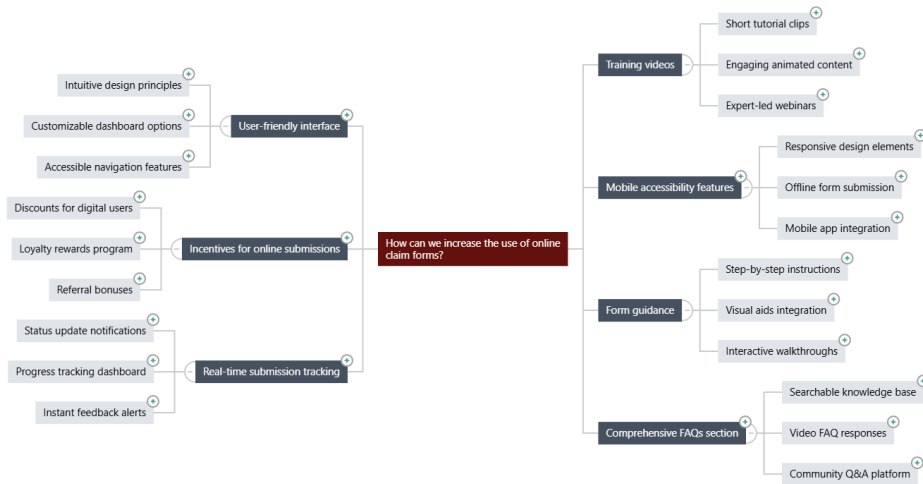


All nodes that were generated by Minitab AI have a symbol on them. Nodes that were added or modified by the user do not have the symbol.

Use AI to generate ideas for each affinity

In this example, we use AI to generate ideas for each affinity.

1. Select each node (affinity) to add ideas to. Then open **AI Options**.
2. Select **AI Quick Generate**.
3. Review the results, then drag the new nodes to arrange the diagram as needed. You can rename nodes or add and delete nodes to customize your idea map.



Customize the appearance of your brainstorm

Minitab Brainstorm offers countless ways to customize your brainstorm diagrams. Complete the following steps to customize the AI generated idea map from the previous section.

1. Open the **Idea Map** options on the right side of the canvas.
2. Select **Title** and enter a title such as *Online Claim Form Ideas*.
3. Brainstorm, change the type to **Mind Map**.
4. In Density, select **Compact**.
5. Right-click a node and select **Priority** to assign priorities to various affinities and ideas.

There are many other ways to format your maps to communicate improvement ideas.



What's next

Use the dashboard to visualize important metrics.



Go to [Create a dashboard](#) on page 18.

7. Create a dashboard

Add data to your dashboard

This example uses the prepped data set from the [Prep your data](#) on page 7. You can alternatively open a data set directly in the dashboard but clean up steps will not be available.

Important: Each data connection can live in only one dashboard or project. Because you opened the previous dataset in [Minitab Statistical Software](#), you need to open a second instance of the same data set to use it in [Minitab Dashboards](#).

1. From the [Minitab Solution Center Home](#)  page, select [Data Prep](#).
2. Select [Add Data](#) and open [Insurance Fraud Data](#).
3. Select [Import Steps](#) from the dropdown menu in the [Steps](#)  pane on the left. Then browse to the steps that you exported in the [Prep your data](#) on page 7 topic.
4. Select [Open in](#) > [New Dashboard](#).
5. Select the drop down at the top of the page and enter *Insurance Fraud Dashboard* in [File Name](#).

Create assets for your dashboard

Complete the following steps to create a dashboard to quickly monitor key metrics.

Follow these steps to create a [U Chart](#).

1. From the left pane, open [Assets](#).
2. Under [Process Quality](#), select [U Chart](#).
3. Ensure the insurance fraud data set is selected and select [Open](#).
4. In [Variable](#), enter *form defects*.
5. In [Subgroup size](#), enter *1*.
6. Select [OK](#).


Follow these steps to create a [Normal Capability](#) analysis.

1. Under [Process Quality](#), select [Normal Capability](#).
2. Ensure the insurance fraud data set is selected and select [Open](#).
3. In [Data column](#), enter *safety_rating*.
4. In [Subgroup size](#), enter *1*.
5. In [Upper spec](#), enter *90*.
6. Select [Transform](#). Select [Box-Cox power transformation \(\$W = Y^\lambda\$ \)](#).
7. Select [OK](#) in each dialog.

If you want, add other assets to your dashboard.

Create assets with Minitab AI

Minitab Dashboards provides artificial intelligence that creates visualizations and places them on the dashboard. This can give you a good starting point to create an informative dashboard. You can edit and delete these visualizations after **Minitab AI** creates them.

To generate the visualizations, select **Minitab AI** , select the insurance fraud data set, and then select **OK**. **Minitab AI** creates a new page to place the visualizations.

Note: AI technology may make mistakes. It is the user's responsibility to ensure the output is accurate, appropriate, and meets your organization's standards and requirements. For more information, see the [Minitab Trust Center](#).

Rearrange assets

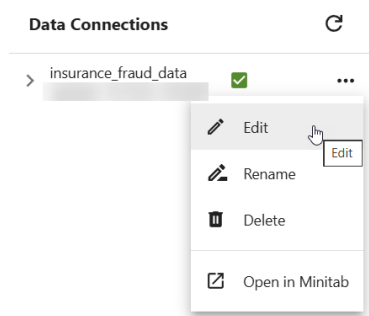
You can arrange the assets on the dashboard canvas to find the best way to display your visualizations. Your dashboard can include multiple pages.



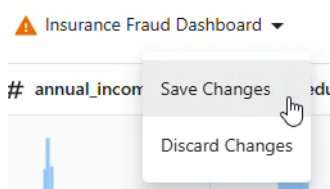
Sync data after a new data prep step

In the previous step, we created a dashboard with a data connection to monitor key metrics. The improvement team decided that some of the safety ratings may be incorrect, so they want to apply a filter to remove safety ratings that are less than 25.

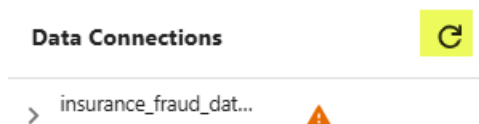
1. Select **Data**  from the left pane. From the **Data Connections** pane, select **Edit** to add the data prep step in the Data Center.



2. From dropdown menu for the *safety_rating* column, select **Filter Rows**. Then enter *safety_rating, greater than or equal to, 25* and select **OK**.
3. Refresh the data connection to save the changes. You can refresh from the **Minitab Data Center** or from the **Dashboard**.
 - From the Data Center, use the dropdown menu and select **Save Changes** to refresh the data connection.



- From the Dashboard, Select the **Refresh** icon to refresh the data connection.



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Minitab Our mission is to help people discover valuable insights in their data.

Minitab helps companies and institutions to spot trends, solve problems and discover valuable insights in data by delivering a comprehensive and best-in-class suite of data analysis and process improvement tools. Combined with unparalleled ease-of-use, Minitab makes it simpler than ever to get deep insights from data. Plus, a team of highly trained data analytic experts ensure that users get the most out of their analysis, enabling them to make better, faster and more accurate decisions.

For nearly 50 years, Minitab has helped organizations drive cost containment, enhance quality, boost customer satisfaction and increase effectiveness. Thousands of businesses and institutions worldwide use our products to uncover flaws in their processes and improve them. Unlock the value of your data with Minitab.

Automation and Reporting



Minitab Connect®

Integrate and transform data for analysis, reporting and monitoring

Data Analysis & Predictive Modeling



Minitab®

Powerful statistical software everyone can use



SPM®

Machine Learning and Predictive analytics software

Model Deployment and Monitoring



Minitab Model Ops®

Model lifecycle management on a simple yet powerful platform

Visual Business Tools



Minitab Workspace®

Visual tools to ensure process and product excellence

Project Ideation & Execution



Minitab Engage®

Start, track, manage, and execute innovation and improvement initiatives

Self-paced Learning



Education Hub™

Master statistics and Minitab anywhere with online training

Quality Solutions



Real-Time SPC™

Monitor, respond, and deliver immediate quality and process monitoring

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Last updated September 2025