IBM Cognos Powered Hr and People Analytics Dashboard

1.Introduction

1.1 IBM® Cognos® Analytics integrates reporting, modeling, analysis, dashboards, stories, and event management so you can understand your organization's data, and make effective business decisions.

- **Uploading a data**
- Let's start by getting data for the tutorial. There are lots of sample data assets on the IBM Cognos Analytics Community that you can use in IBM Cognos Analytics, including the one that's used in this tutorial.
- **Creating a dashboard**

  You can explore your data and easily communicate the analysis and insights that you discover.
- **What's next in Cognos Analytics?**

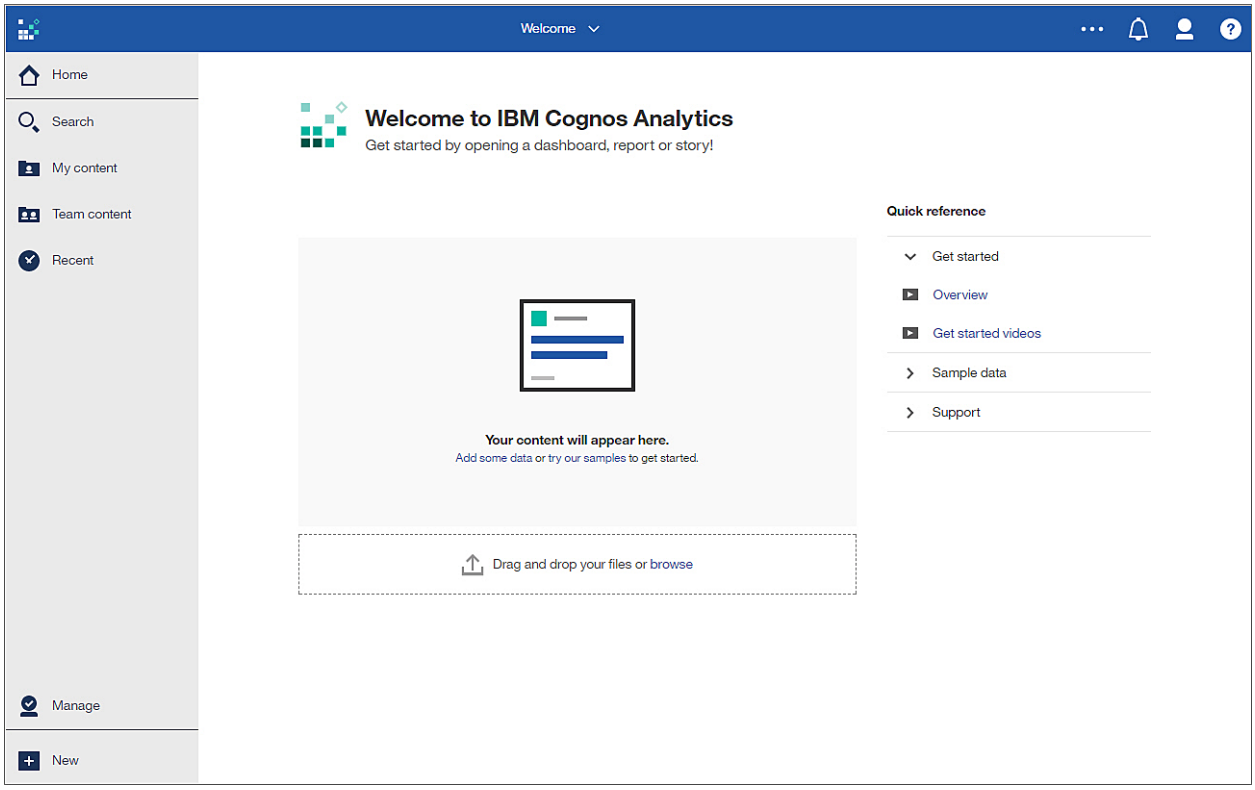
  Let's recap: you learned how to upload data, you created visualizations that showed you new insights about your data, and you filtered data in several different ways. Now you can start exploring your own data.

Uploading a data

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

Procedure

1. Go to IBM cognos Watson Analytics™ Resources page.
2. https://us1.ca.analytics.ibm.com/bi/?perspective=createBoard
3. Select “Covid_19.csv”. Depending on your browser, you may be asked what you want to do with it. Tap **Save**.
4. In Cognos Analytics, tap **Browse**.

5. You can also tap the **New** icon and then tap **Upload files**.
6. 
7. 

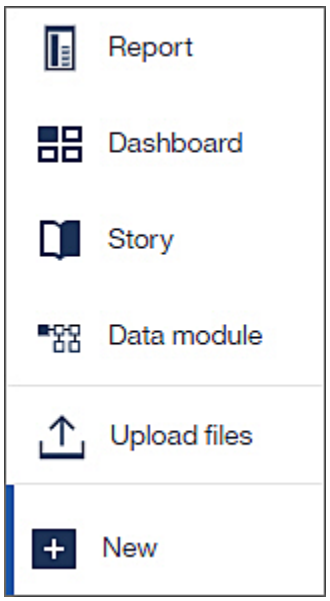
8. Go to where you saved “IBM_HR_Training 2014-17.csv” and select it.
9. The data asset appears in the **My content** folder.
10. **Note:** You can refine the data by filtering it or adding calculations or changing the properties. However, we won't refine it in this tutorial.
11. Tap **OK**.

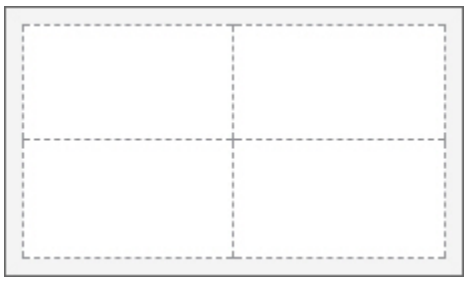
Creating Dashboard

You can explore your data and easily communicate the analysis and insights that you discover.

Procedure

1. On the home page, tap the **New** icon at the bottom of the window.

2. 
3. Tap **Dashboard**.
4. 

5. You see predefined templates that contain grid lines for easy arrangement and alignment of visualizations and other elements in a dashboard.
6. Select the template with 4 panes and then tap **OK**.
7. 

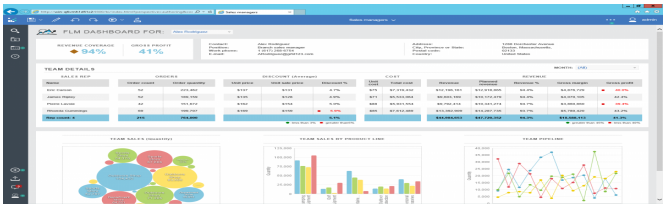
Let's recap: you learned how to upload data, you created visualizations that showed you new insights about your data, and you filtered data in several different ways. Now you can start exploring your own data.

2 Building process and output:

The reporting module is a completely new module that allows building self-service reports for analysis and data exploration as well as building sophisticated multi page, multi query reports. It has an easy and

intuitive drag and drop user interface to create ad hoc queries. This module replaces Report Studio, Analysis Studio,Studio and Workspace Advanced but uses the same metadata definition as the old studios. This means all the reports that were created in previous versions of IBM Cognos can easily be upgraded to the latest version. The reporting module is not only used to build reports but also to do ad-hoc analysis.

The interface is completely new and very intuitive, exposing functionality only when required. Despite the 'simple' look, all the functionality that was in Report Studio is there. It does take a while to get used to the new interface and find all the menu's. Using the sliding panels, the canvas is optimally used when designing a report as the user can choose to show or hide properties and free up canvas space as needed.

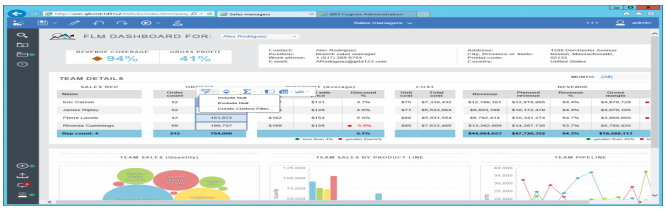


click to enlarge

A report shown in Cognos Viewer.

Viewer

A report can be shown in full interactive viewer and the normal viewer. The fully interactive viewer allows users to make changes in the report such as drilling, filtering and sorting data, choosing a different chart or switching between a crosstab and a list. This functionality resembles quite well what already was avaible in Cognos Workspace. Report consumers can save the changes they make to a report. The normal viewer offers the classic, trusted viewer that was used in the previous versions of Cognos. By default, interactivity is enabled for new reports and disabled for upgraded reports. This behaviour can be easily changed by setting a property at report level. It should be noted that standard reports can switch without issues, but special cases, like reports with JavaScript or Prompt API will need some modifications to run properly.



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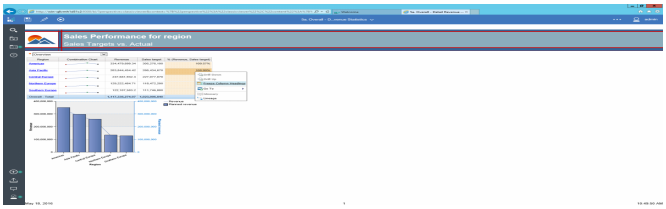
Interactive Viewer



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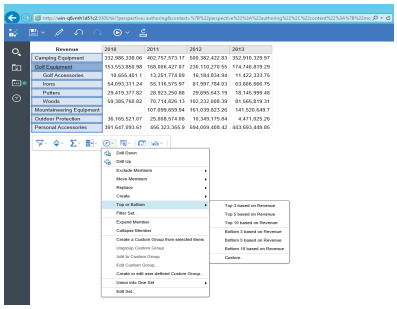
Non Interactive Viewer

Drilling up and down a hierarchy, for example: moving down through a hierarchy like world-continent-country-province-city-street-house, is a wonderful feature that has existed since the early days of OLAP analysis. It allows the user to quickly zoom into problem areas in the data. There is another form of zooming- in called drill-through. Drill-through will open another, often more detailed report, when clicking on a cell or intersection. Reporting parameters are passed from the calling to the receiving report, limiting the amount of data being shown to the context of the calling report.

The non-interactive viewer supports drill up/down and drill through exactly the same way as in the previous releases. Using the fully interactive mode drilling is supported, albeit currently there are some limitations: the fully interactive viewer will not support drill through and drill down on lists. Drill through is not supported on data modules, but it is on packages. This functionality will be added in a future release. The interactive viewer however, offers much more data exploration options than just drilling. The tool bar will allow the user to modify the filtering, sorting, adding summaries, supressing null values, swapping rows and columns and changing the chart type all together. Advanced set analysis is also available in this toolbar. Lineage and Glossary are supported for Framework Manager and Dynamic Cubes but only when running in the non-interactive viewer.



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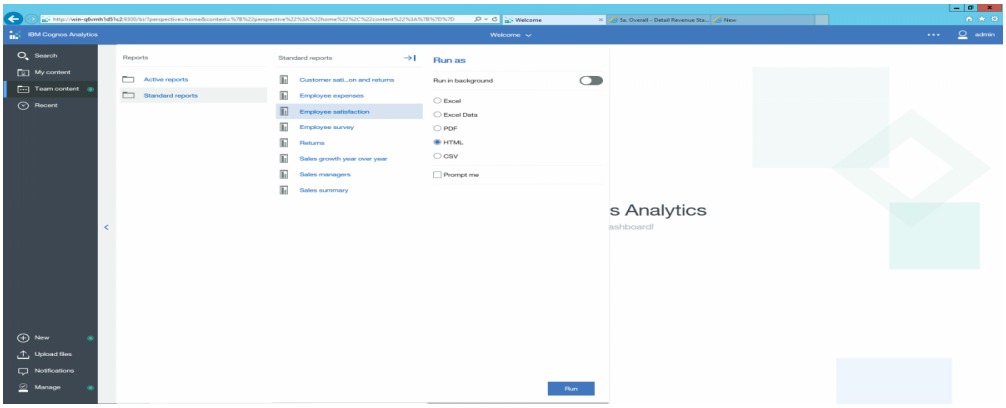
Advanced Set Analysis

The set analysis features allow the business user to do ad-hoc analysis of the data. Members can be added, excluded, moved and replaced by different levels of children. Creating a 'topX' is really easy and requires a single click. Very convenient is the feature to expand/collapse member. This feature will expand a member with its children in a new column, just like it is done in Excel. A combination of members can be added to a custom group, for example to group two regions in an overlying structure.

In terms of exporting reports there is also a difference between non-interactive viewer and the interactive viewer mode. The non-interactive viewer will export to PDF, Excel (both data and formatted) and raw data in CSV. XML has been removed from the interface, but can still be generated using the SDK. When running from within the interactive viewer only HTML and PDF can be selected. It is however possible to export to all other formats by selecting 'Run as' in the portal.



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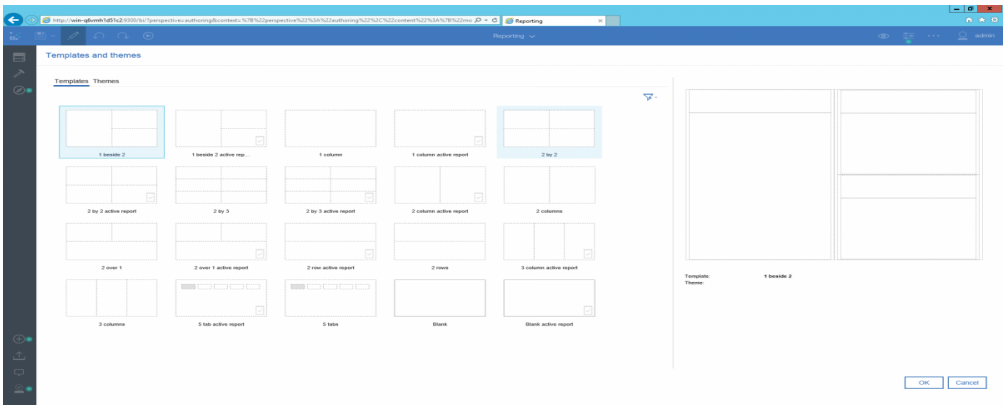
Run as menu allows for exporting to Excels

Authoring

When creating a new report, a default layout, type of report and theme can be chosen. This allows the author to quickly create a report that has a responsive layout and is beautifully styled.



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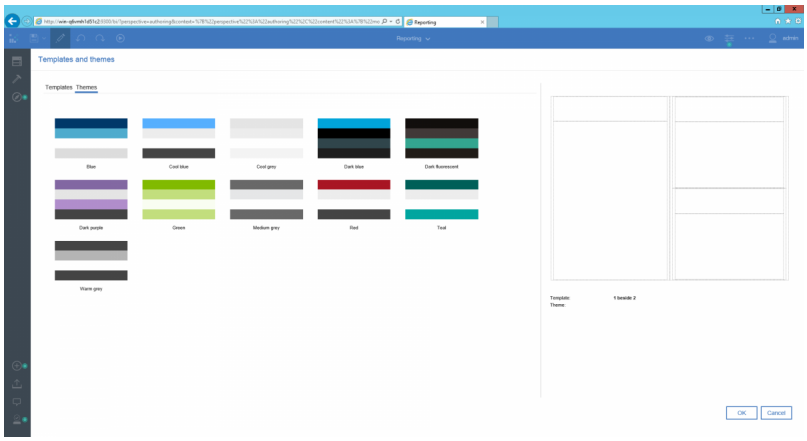
Templates



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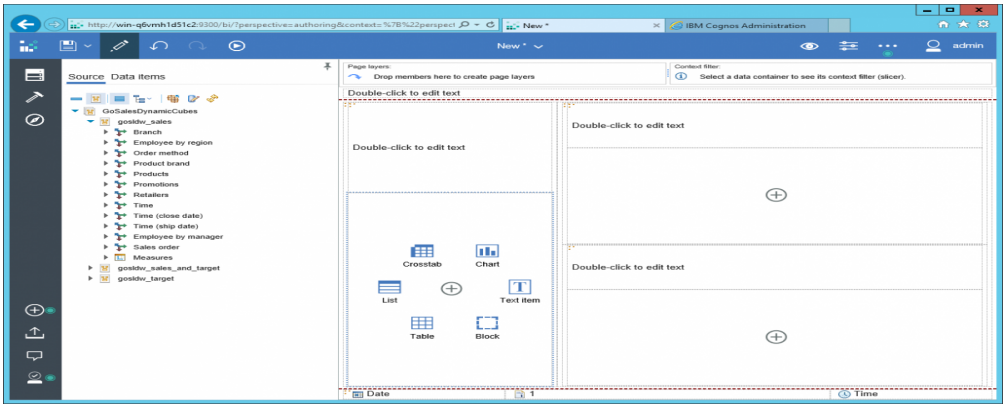
Themes

Several templates are available and a distinction is made between a normal report and an Active report. The first is for connected use, the latter can be made available offline and offers more options for interactivity.

The next step in building a report, is selecting a data source that will feed the report

with data. The source of a report can be a package and a data module. The variety of data sources that can be used to build reports is very large and includes Hadoop, cubing technologies and all major database vendors. Packaged with the Cognos Analytics installation are Dynamic Cubes, an in-memory cubing technology that is free to use and offers substantial performance gains in query times. (for more information &&hyperlink http://www.element61.be/e/resourc-detail.asp?ResourceId=754) IBM Cognos PowerCubes remain supported as a data source. PowerCubes remain the only IBM Cognos OLAP technology that allows to easily combine multiple data sources, whether these are database or flat files.

In an upcoming release IBM plans to add the capability of using multiple packages / data modules to build a report. For now, multiple data sources can be combined in a single package using Framework Manager and multiple data modules can be combined in an overlying data module.



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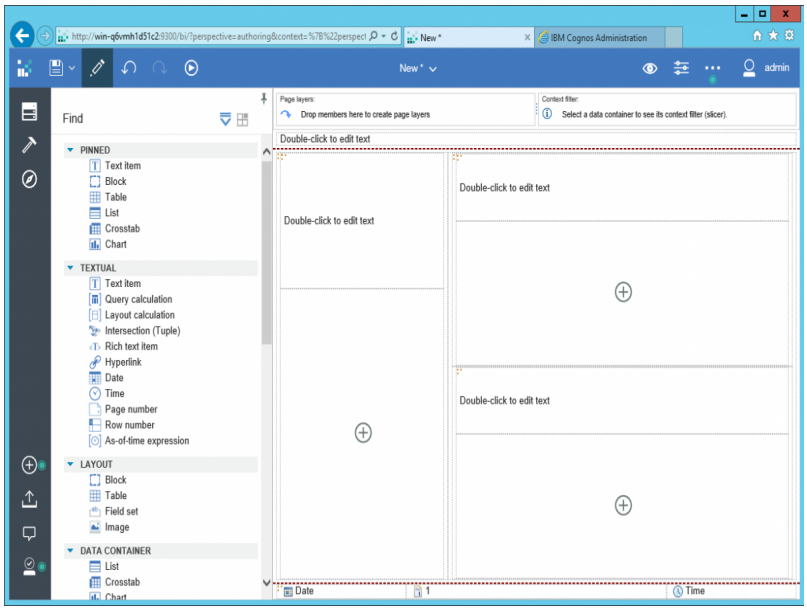
Editor interface

By clicking the plus sign, a popup menu will appear that allows quick selection of the most often used components. The templates offer a responsive layout, meaning that the columns and rows will resize depending on the device the report is ran on. The colour scheme allows to quickly format appealing reports without having to modify all the styles manually. Using the report properties, the style can be modified to a custom style or default template. For now, these templates cannot yet be customized but this is planned for an upcoming release.

At the left hand of the screen a number of icons will expose more advanced functionality. The first one will show all the data items that are in the package and in

the queries that are already in the report. The toolbox will show all components that can be inserted, categorized by use. The toolset will show different components when a normal versus active report is authored. The last item is used to see report pages, edit queries and (active) report variables.



click to enlarge

Toolbox showing all insertable components

When editing a report, the report can be shown in Page Design, Page Preview and Page Structure. Page Preview will render a report with a limited set of data, which comes in handy for quickly testing layout changes. Page Design is the normal authoring environment and page structure will show a structure of all the components on the page. This view is really useful when dealing with a lot of nested components.

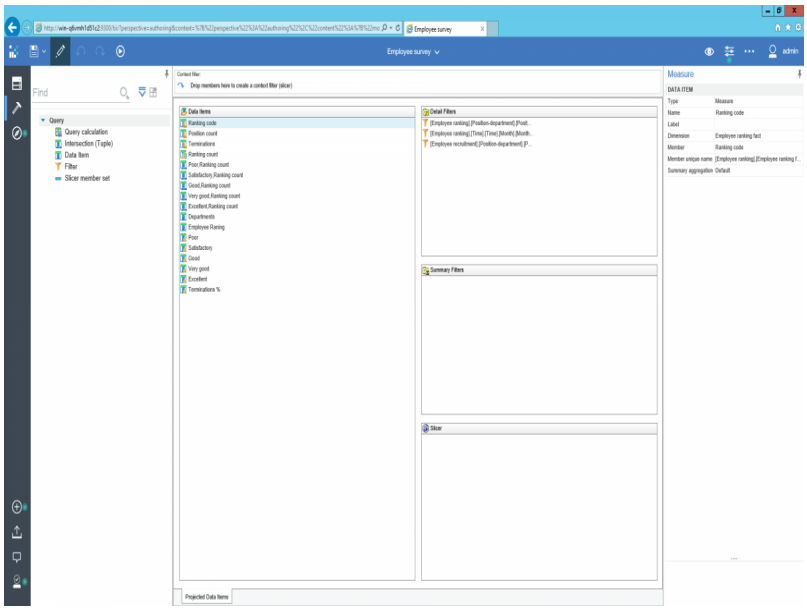
The properties pane will expose the advanced properties of objects and will look very familiar to experienced report authors.

click to enlarge

The properties panel

Editing queries looks very familiar to Report Studio. The data items can be selected

from the package or custom data items can be added. When the package is dimensional, slicer filters can be added to the query. With relational sources, detail filters can be added. When clicking on the folder Queries, an overview of all queries is shown. Combined with the toolbox, new queries can be added or existing queries can be joined using different set operations.



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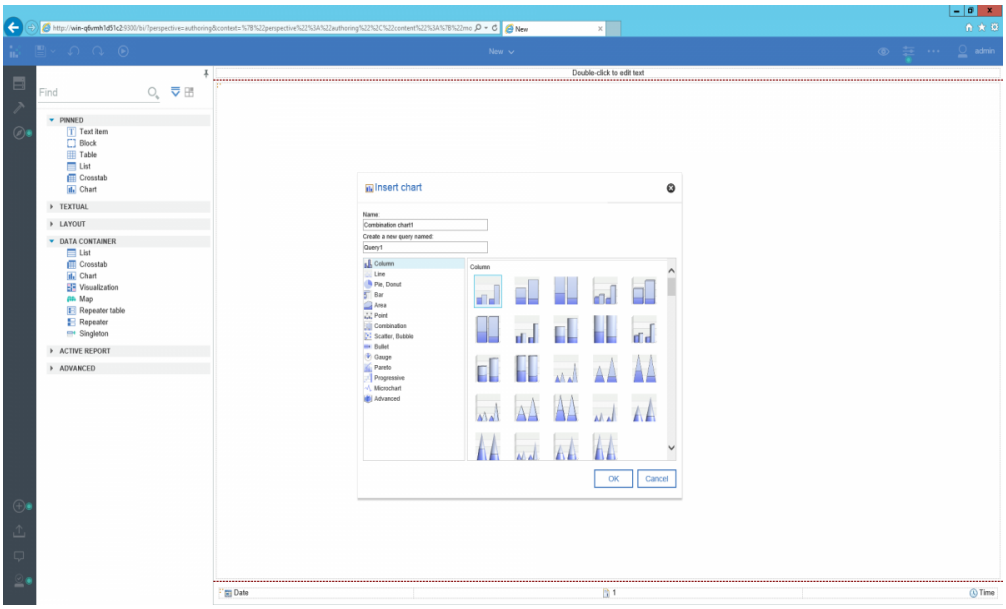
Editing queries

Charting

Cognos Analytics 11 has exactly the same charting options as IBM Cognos Business Intelligence 10.2.2. Both classical charts (even Cognos 8 style) and visualizations are available to use. The classical charts offer much more flexibility as a lot more properties are available for modification than with visualizations. However, all the new charts are only available as visualizations such as the Bubble chart with person shaped bubbles or the Packed Bubble chart. In standard reports a combination of classic charts and/or visualizations can be used.



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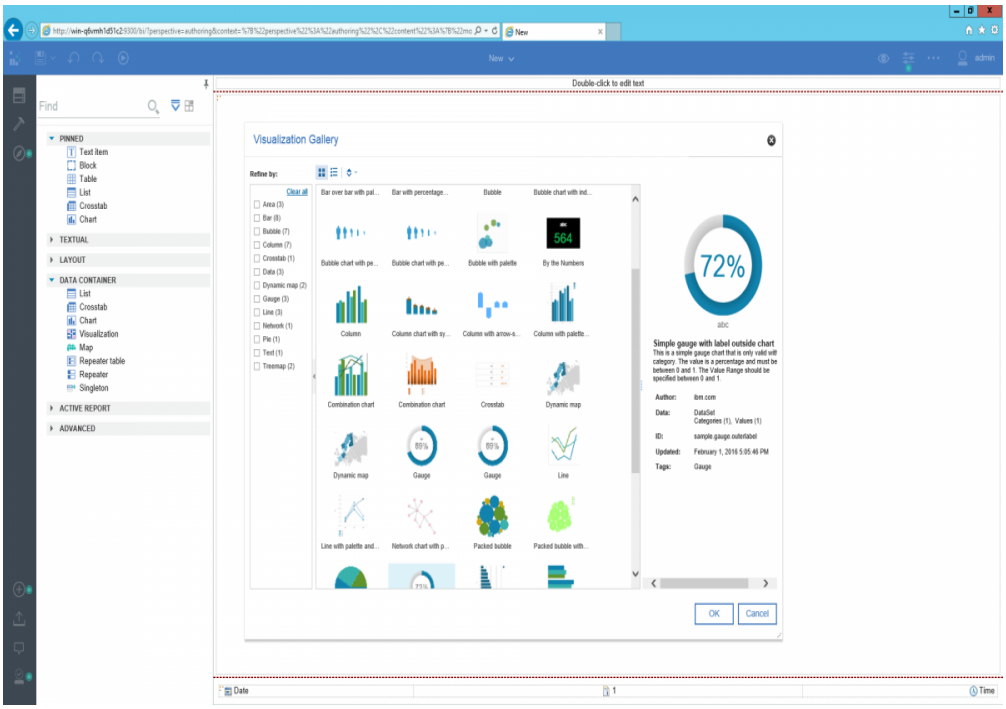
Cognos Analytics 11 Charting

In Active Reports however, visualisations are a *condicio sine qua non*. Only a visualisation can be used to filter data using another Active Report Control. This feature shapes the interactivity of an Active Report. When clicking on a control data is filtered in another control. Classic charts in Active Reports only allow for the selection of data on the chart and not filtering. To accomplish the same behaviour a master detail relation would be needed, but in the context of complex Active Reports this is not feasible.

In IBM Cognos Business Intelligence 10.2.2 effort was done to increase the number of adjustable properties, but there is still some work needed on that part. The charts are written in JSON and can be customized using the Visualization Customizer. However, new releases of visualisations often mean the reports using them need rework to replace visualisations with the new versions. It is also possible to import upgraded visualisations definitions from previous releases. This will keep reports running but the visualisations used will be the old version. Currently IBM is working on Rave 2.0 which should provide a significant improvement to visualizations.



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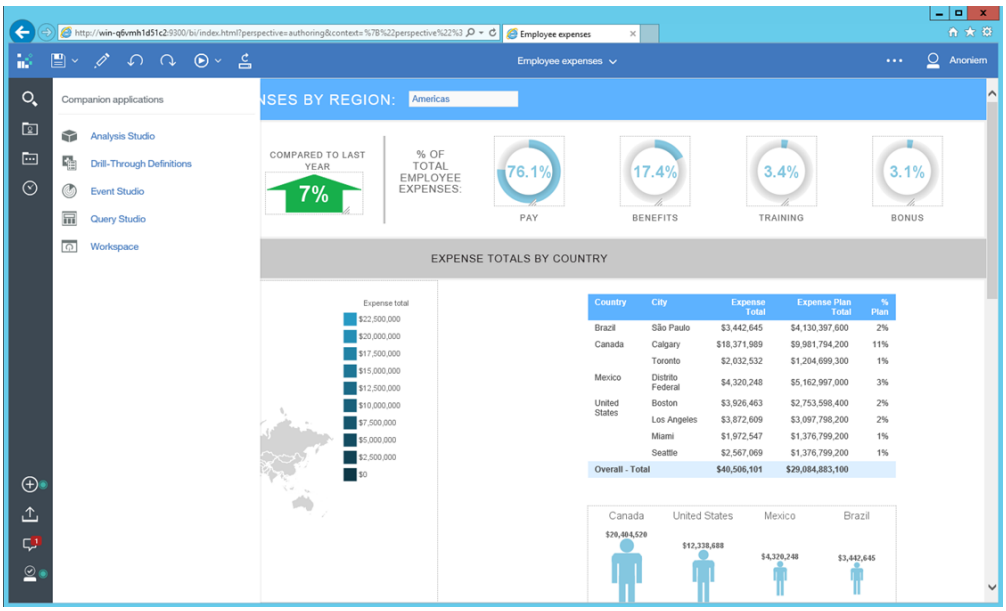
The visualization gallery

Companion Apps

The old applications Query Studio, Analysis Studio, Event Studio and Cognos Workspace are included as companion apps. That being said, IBM immediately states that they will drop Query Studio, Analysis Studio and Cognos Workspace the next release. Cognos Workspace will be replaced by the Dashboard module. Functionality of Query and Analysis Studio will be ported to the Reporting Module. Event Studio is still available in Cognos Analytics and will be so until the functionality is ported.

Cognos Analytics will not allow the creation of new portal pages. Upgrade pages can be maintained but cannot be set as Home. The use of portal pages is discouraged and should be abandoned as quickly as possible. My Inbox is accessible and remains unchanged versus Cognos Business Intelligence 10 but only appears when the Legacy Applications are enabled. The same applies for My Watch Items, however no new items can be created. It is planned to be included in a future

release of Cognos Analytics.



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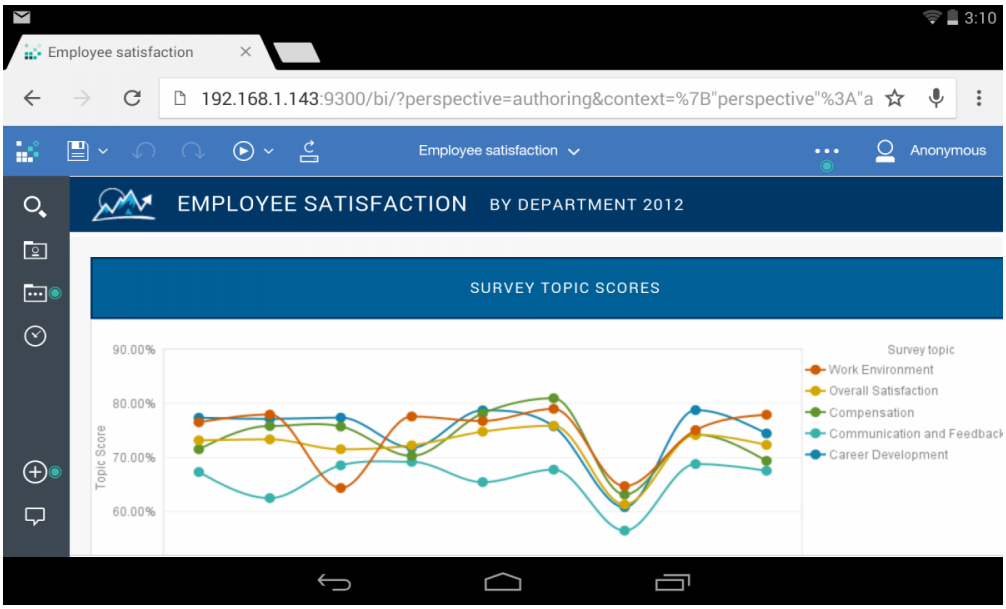
Companion Apps

Companion apps are always launched in a new window and look exactly the same as in Cognos Business Intelligence 10.2.2. They are only available if the legacy applications are enabled. This option can be set during install or enabled later by modifying the Legacy Switch that is locatedconfiguration file. Mobile



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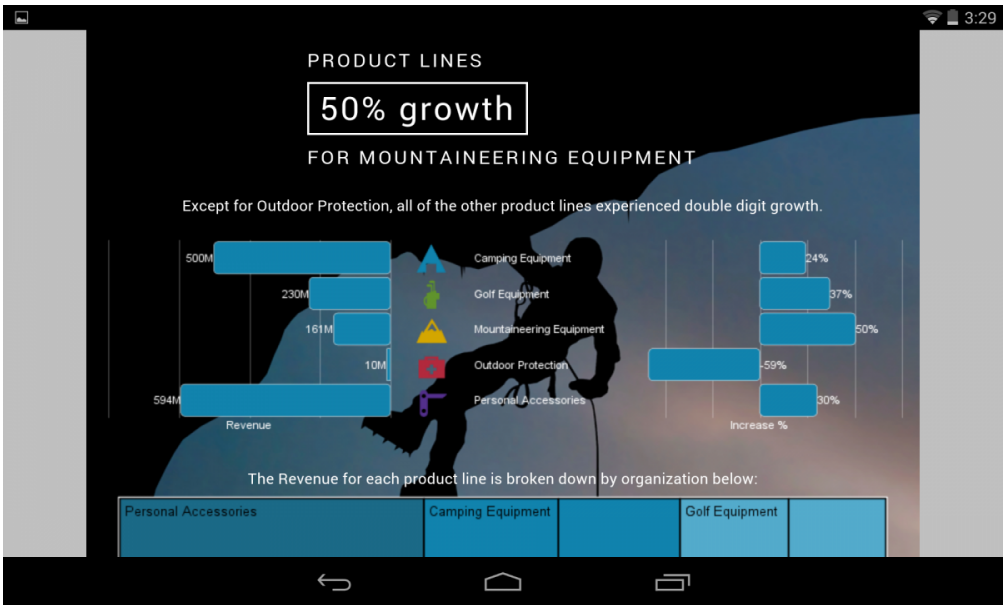
Standard reports run from the browser on a mobile device.

Cognos Analytics 11 makes a clear distinction between online and offline content when consumed from a mobile device. Online content such as running a report or browsing the content store is no longer done from within the app but should be done from a browser just like when working on a desktop computer. The new interface of Cognos Analytics is fully touch enable, providing a better and more consistent user experience. Content will be shown exactly the same using a browser on a tablet or desktop computer, but can be easily manipulated using gestures, such as the swipe gesture. The native app is only used to consume pre-run saved Active Reports. For users using previous versions of Cognos nothing changes. The latest release of the app is fully backward compatible.



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Advantages:

You can enhance the dashboard that you created. Here are a few ideas:

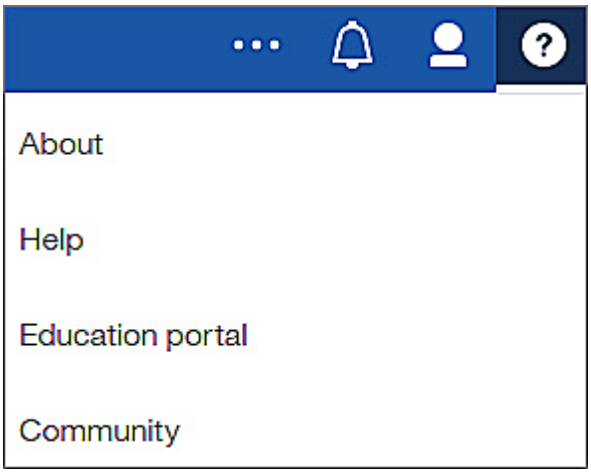
- Use text widgets to annotate the dashboard with descriptions.
- Provide more info by adding media and links to web pages.
- Format the dashboard, such as changing the colors or theme.
- Add images and shapes to add visual appeal.
- Create a story in your dashboard. A story consists of visualizations and an over-time narrative.

Wait, there's more!

There is much more you can do in Cognos® Analytics:

- Build sophisticated, multi-page, multi-query reports against multiple databases.
- Use data modeling to access and shape data from data servers or uploaded files.
- Schedule activities.
- Manage content and manage the account.
- And more!

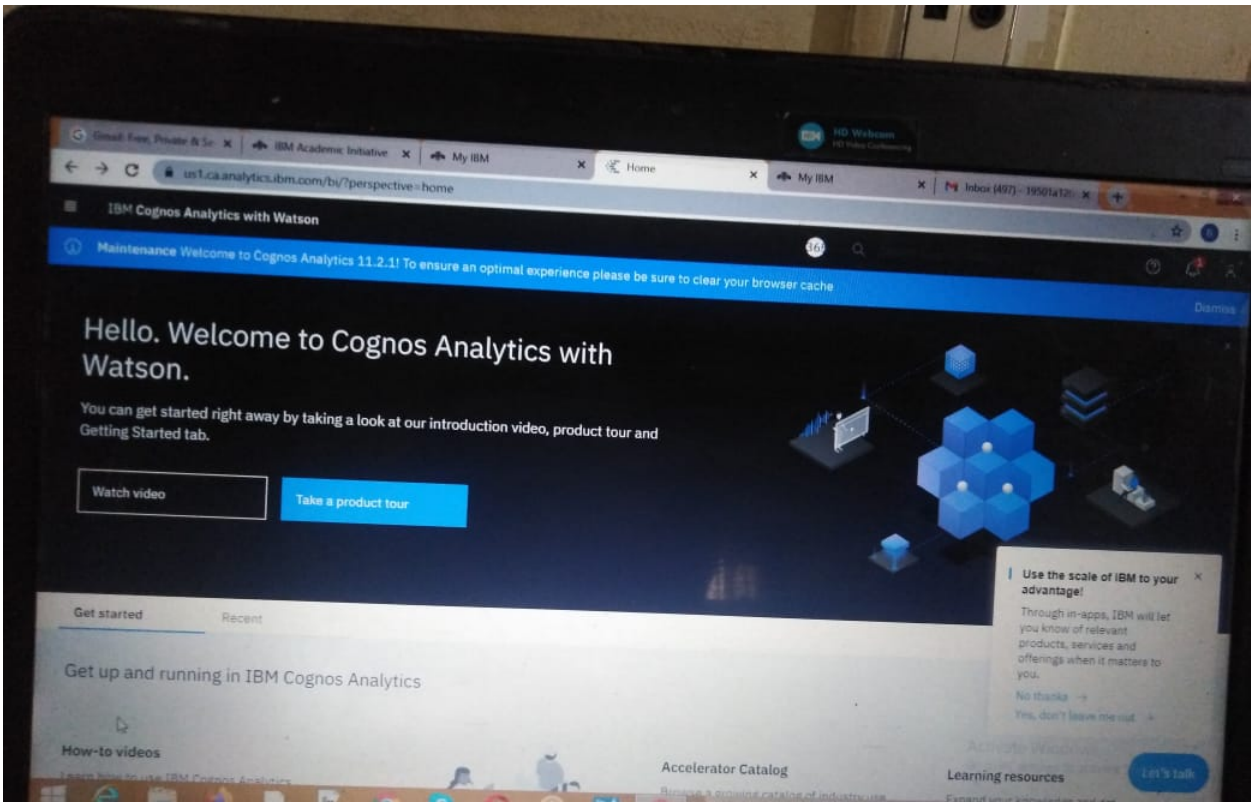
For more info, check out the **Help** menu.



Disadvantages:

- Total Cost of Ownership (TCO) is more significant than other tools.
- Minimal forecast capabilities.
- Investment in Cognos R&D by IBM is declining.
- Won't work smoothly with large data sets having many parameters.
- Cross-browser compatibility is often problematic.

Result: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Home
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us1.ca.analytics.ibm.com/bi/?perspective=home
IBM Cognos Analytics with Watson
Maintenance Welcome to Cognos Analytics 11.2.1! To ensure an optimal experience please be sure to clear your browser cache
Dismiss
Hello. Welcome to Cognos Analytics with Watson.
You can get started right away by taking a look at our introduction video, product tour and Getting Started tab.
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Take a product tour
Use the scale of IBM to your advantage!
Through in-apps, IBM will let you know of relevant products, services and offerings when it matters to you.
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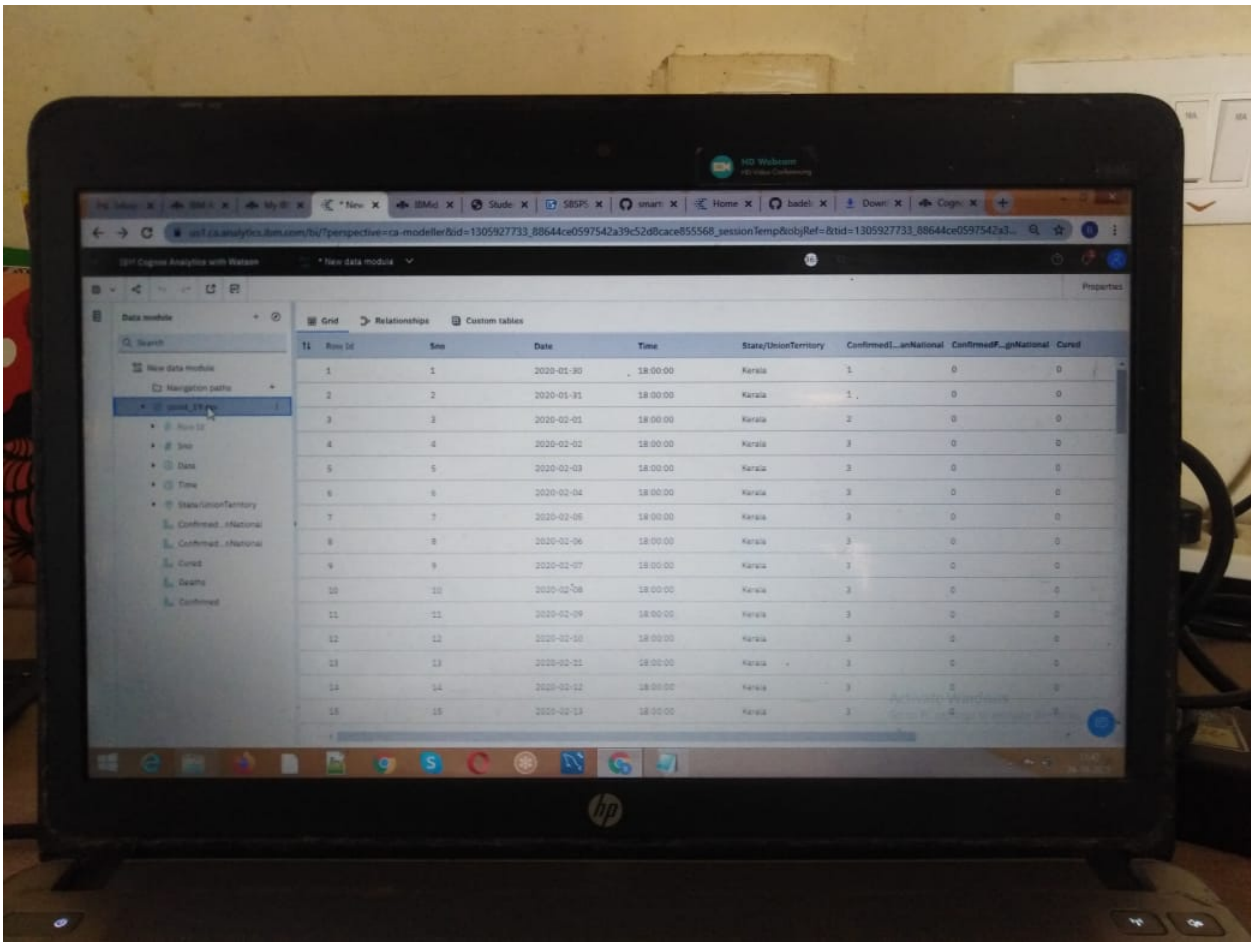
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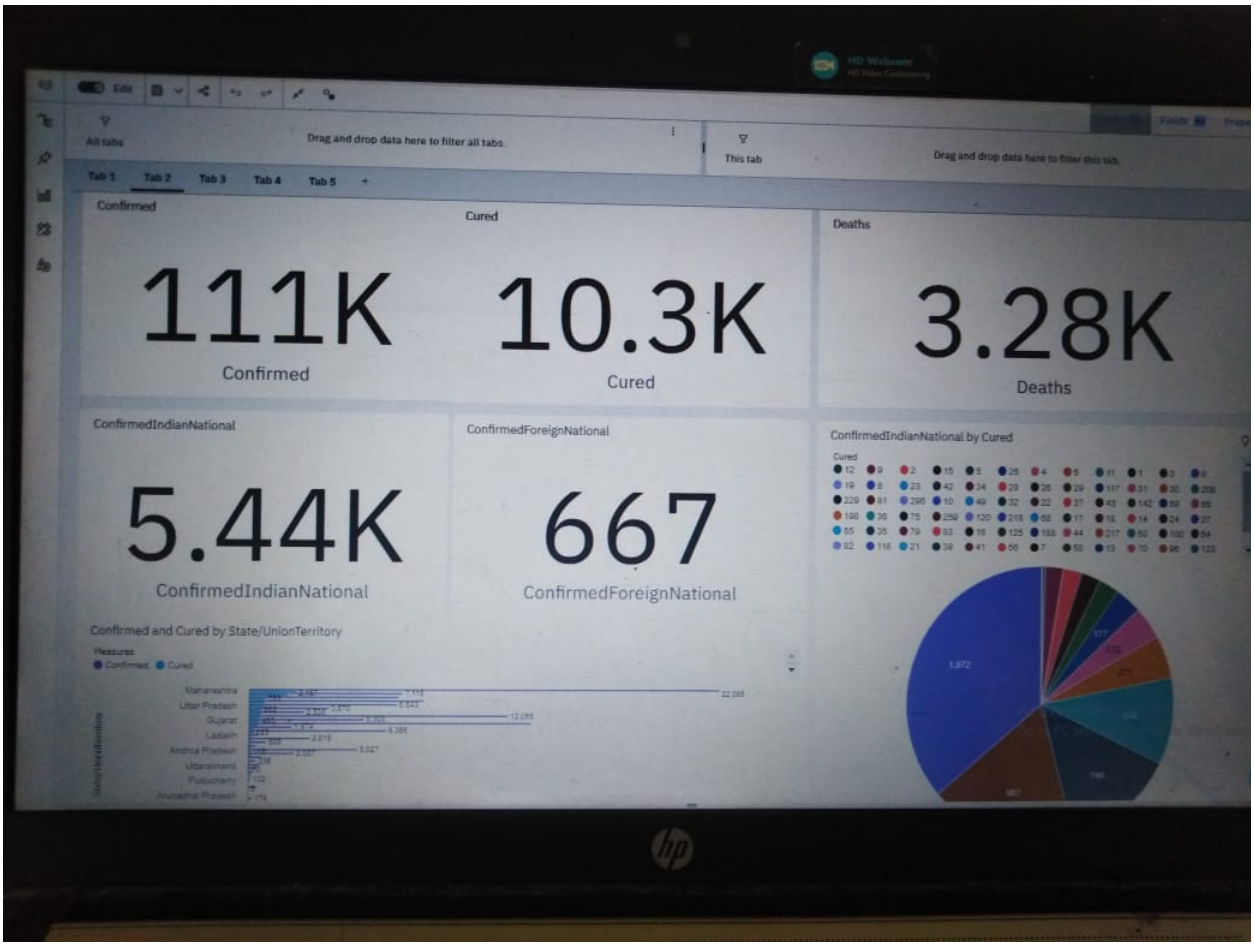
Drag and drop data here to filter all tabs.
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Tab 1
Tab 2
Tab 3
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Confirmed and Cured by State/UnionTerritory
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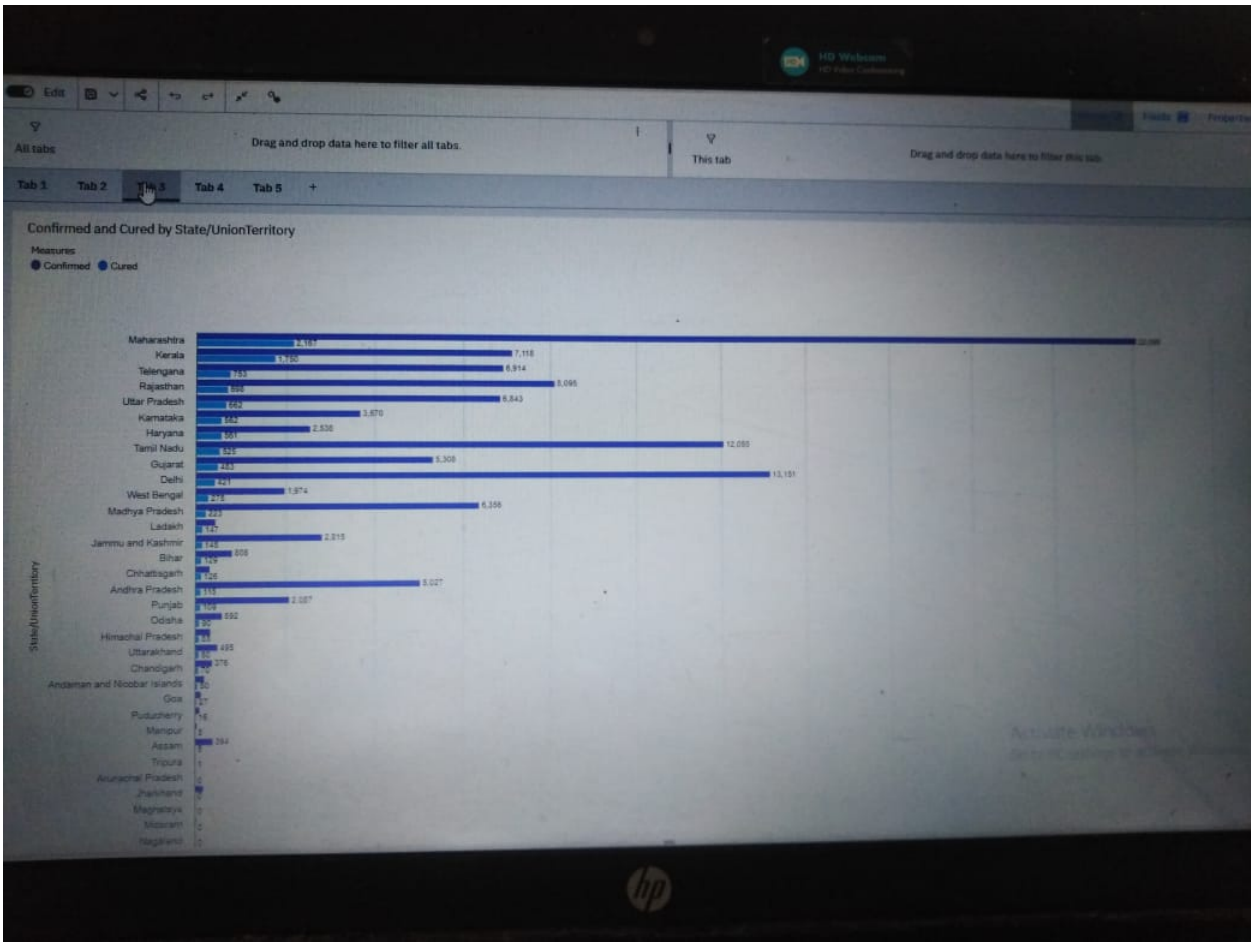
Uttarakhand
Puducherry
Arunachal Pradesh



Applications:

- Query performance.
- General production system performance.
- Aggregate view of data vs transactional view.
- Complex SQL.
- Normalized databases are typically tuned for simple queries.
- Data cleaning and for personalizing.

Conclusion:

I uploaded the data from downloaded files into ibm cognos analytics with watson .

Selected on Refined dataset and added.

Prepare data:

Use data modules from clean and connect data from multiple modules.

Exploration:

Quickly find unbiased answers by identifying in your data with data exploration.

Present data:

Create sophisticated,multi-page,multi-query dashboards,reports or stories.

Reference:

ibm cloud

data science

ibm clouds analytics

Source code:

"Covid_19.csv"

"Sample_hr.csv"

THE END OF PROJECT

THANK YOU FOR READING MY PROJECT