IBM COGNOS POWERED HR AND PEOPLE ANALYTICS DASHBOARD

A PROJECT REPORT

Submitted by

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INTRODUCTION

OVERVIEW

This project is based on an understanding of the HR analytics dataset. It has 1470 data points (rows) and 36 features (columns) describing each data related details.

The data we worked on had the following features:

Age	Age of employees
TotalWorkingYears	Total number of years the employee worked
Attrition	Possibility of staying / leaving the company
YearsAtCompany	Number of years worked at that company
MonthlyIncome	Monthly Salary
JobRole	Type of job
YearsInCurrentRole	Number of years in holding the position
YearsSinceLastPromotion	Last dated promotion
YearsWithCurrManager	Number of years worked with the current manager
NumCompaniesWorked	Number of companies worked

PURPOSE

- To create data visualization charts like those mentioned below:
    - Table analyzing Age, TotalWorkingYears, Attrition, YearsAtCompany and MonthlyIncome
    - Attrition by JobRole
    - YearsInCurrentRole by YearsSinceLastPromotion colored by Attrition
    - Attrition for YearsWithCurrManagersHierarchy
    - Attrition by NumCompaniesWorked colored by JobRole
- To create dashboard using the data visualizations and export the analytics

LITERATURE SURVEY

EXISTING PROBLEM

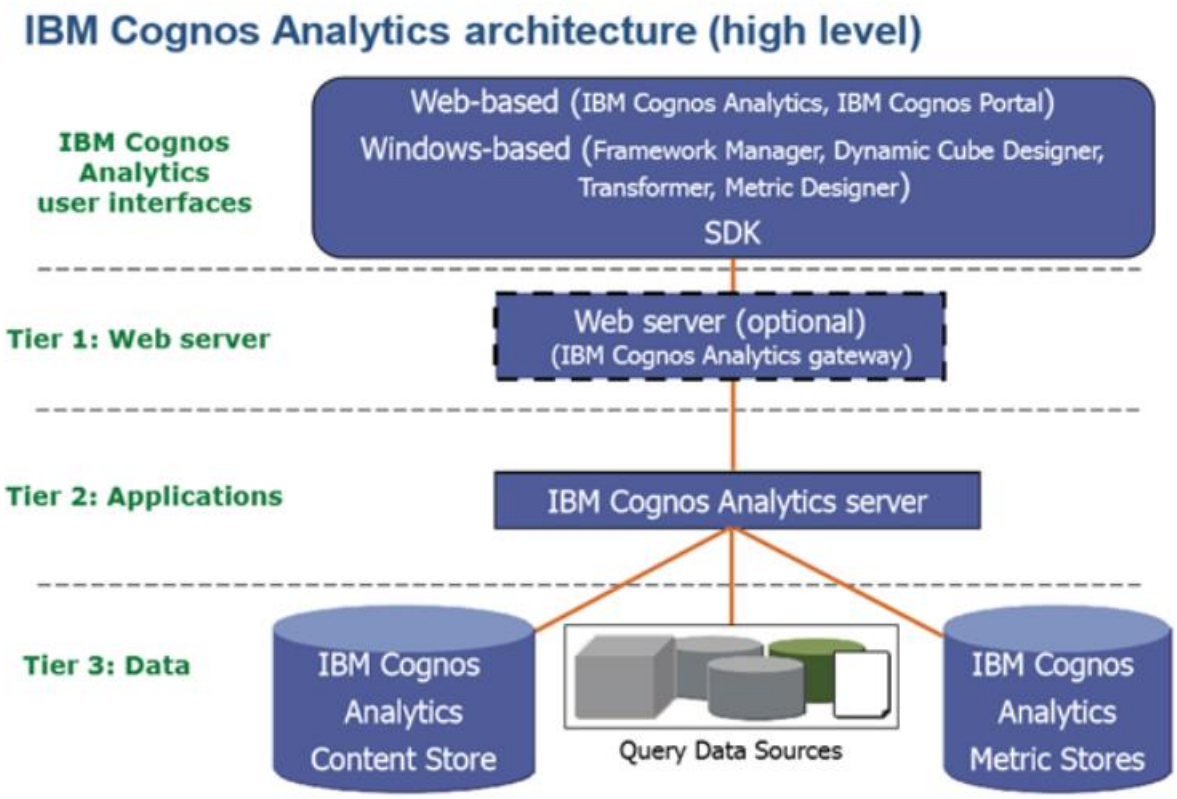
- If we are finding unusual patterns within our data analysis or our statistical significance is not strong enough, we might not have enough data to make valid conclusions
- Without doing data analysis, we won't get the opportunity to evaluate the data before making actionable plans
- Data is meaningless without context and without context, we cannot turn data into information
- Information is useless without being able to apply to something

PROPOSED SOLUTION

- To create various data visualizations using IBM Cognos
- To make a dashboard using IBM Cognos
- Making dashboards can revolutionize both our success and enjoyment in running our business

THEORETICAL ANALYSIS

BLOCK DIAGRAM

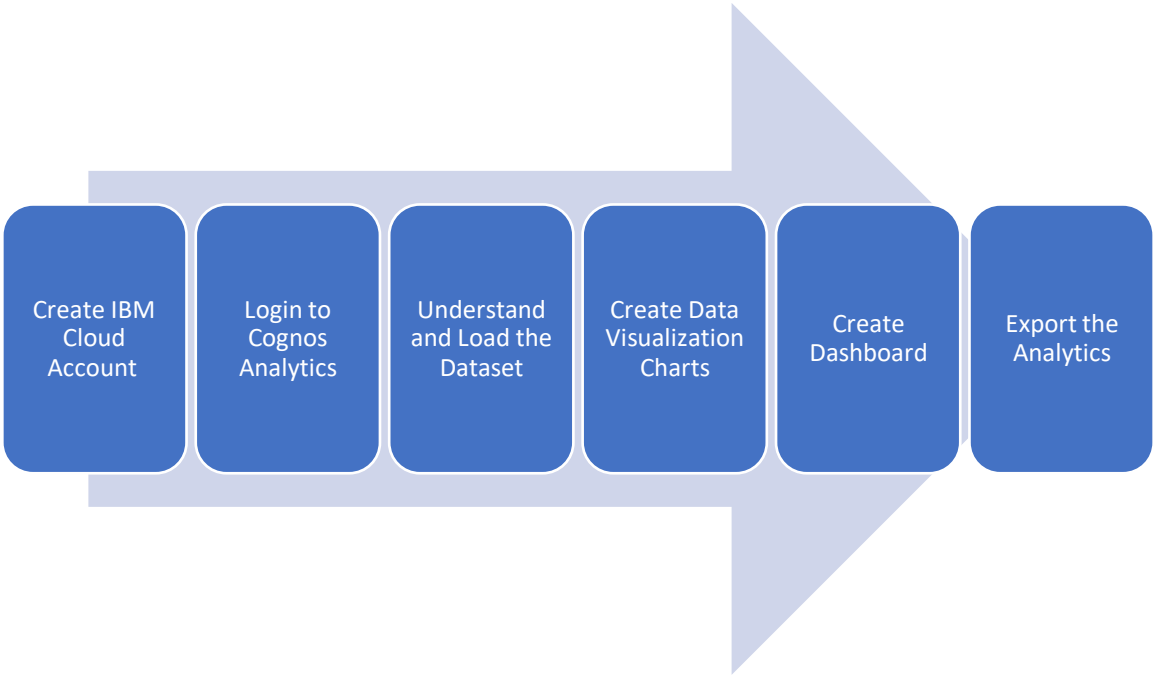


EXPERIMENTAL INVESTIGATION

DATA PREPARATION

- Split double quotations from "Age and convert type of "Age_2 to numeric
- Rename "Age_2 with Age
- Hide "Age and "Age_1 from users
- Split double quotations from YearsWithCurrManager" and convert type of YearsWithCurrManager"_1 to numeric
- Hide YearsWithCurrManager" and YearsWithCurrManager"_2 from users
- Remove columns which are not required keeping Age, TotalWorkingYears, Attrition, YearsAtCompany, MonthlyIncome, JobRole, YearsInCurrentRole, YearsSinceLastPromotion, YearsWithCurrManager, NumCompaniesWorked

FLOWCHART


Create IBM Cloud Account
Login to Cognos Analytics
Understand and Load the Dataset
Create Data Visualization Charts
Create Dashboard
Export the Analytics

RESULT

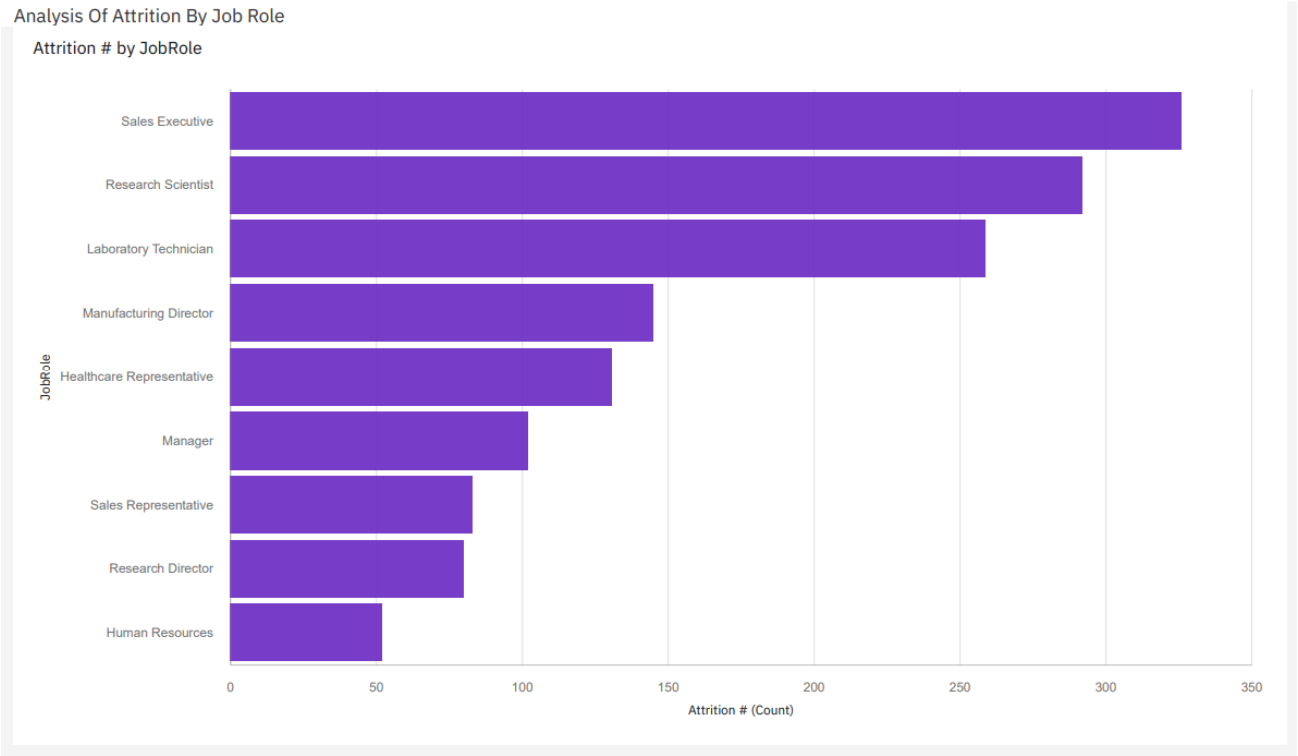
- Table for analyzing Age, Total Working Years, Attrition, Years at Company and Monthly Income:

Analysing Age, Total Working Years, Attrition, Years At Company And Monthly Income

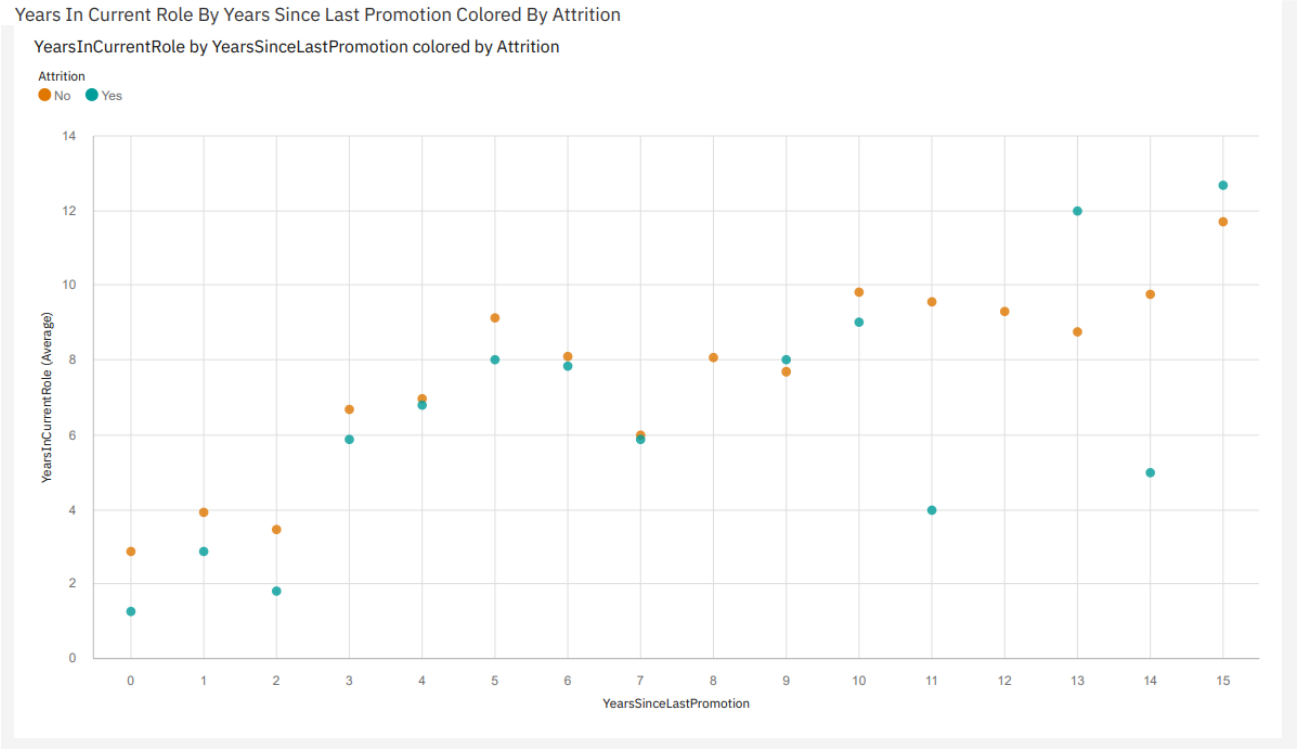
TotalWorkingYears, Age, Attrition #, YearsAtCompany and MonthlyIncome

Attrition #	Age	TotalWorkingYears	MonthlyIncome	YearsAtCompany
1,470	36.92	11.28	6,502.93	7.01

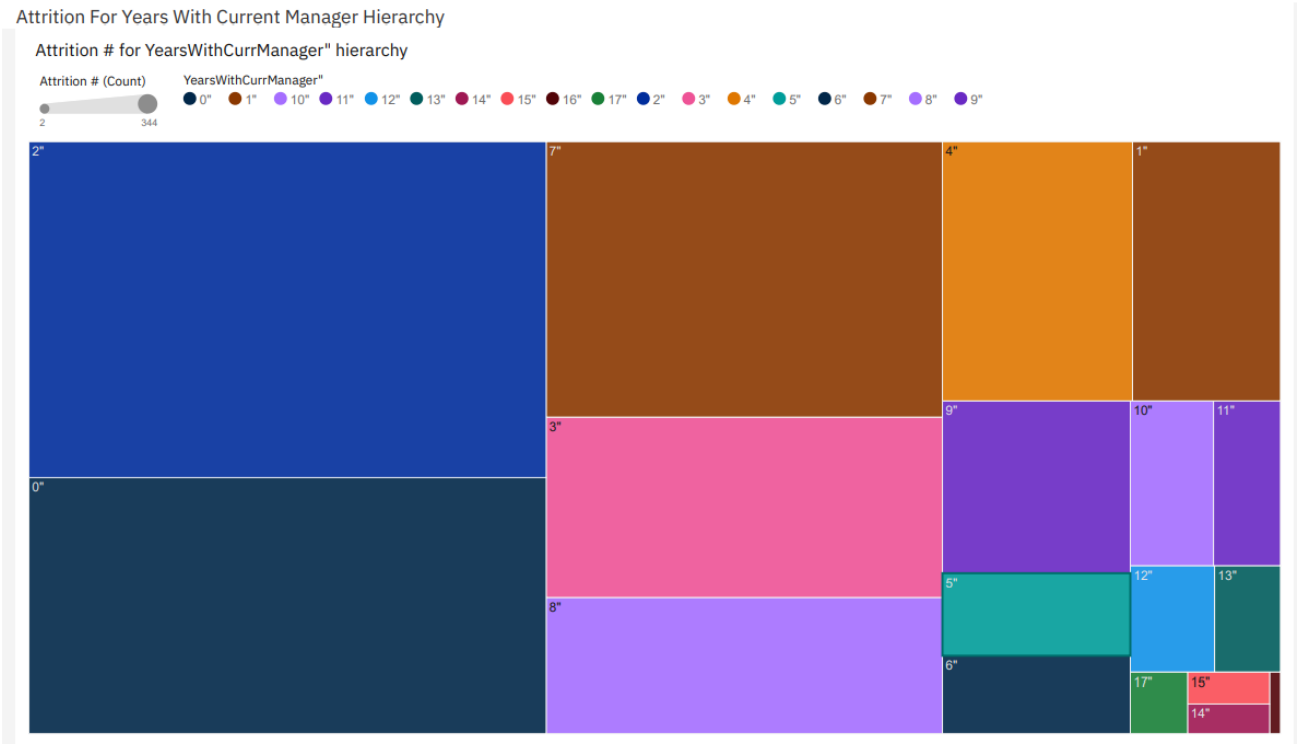
- Analysis of Attrition by Job Role:



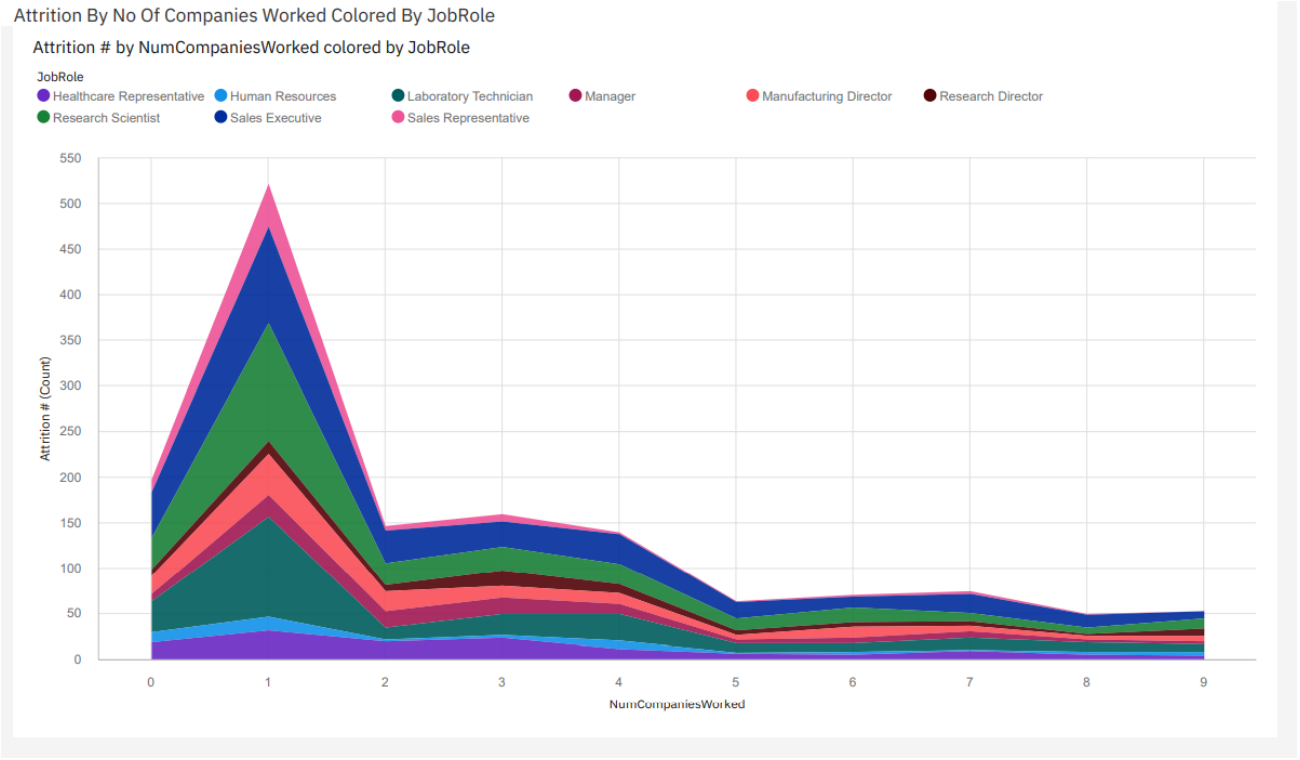
- Years in Current Role since Last Promotion Coloured by Attrition:



- Attrition For Years with Current Manager Hierarchy:



- Attrition By No of Companies Worked Coloured by JobRole:



ADVANTAGES AND DISADVANTAGES OF CREATING DASHBOARD

ADVANTAGES

- Enhanced Visibility: Dashboards provide greater visibility with information available whenever it is required to ensure businesses are better placed to respond to changing market conditions
- Timesaving Efficiency: With dashboards, we are no longer wasting valuable time generating reports from multiple systems. Instead, data is drawn from a source and displayed as an easy to interpret visual overview
- Better Forecasting: With greater insight into the data, future demand can be more accurately predicted using historic information. Businesses can be more effectively planned for demand fluctuations, setting measurable goals and deliverables for greater success
- Better Decision Making: Whether you're providing reporting and analysis for the entire organisation or functional areas of the business, a dashboard allows companies to analyse key data quickly and meticulously. Visualised interactivity serves to deliver overwhelming amounts of data in a way that is easy to understand. With the ability to easily identify what the data really means; better decisions can be made relevant to the business.

DISADVANTAGES

- Flashy or cluttered design, with users attempting to incorporate too much information without understanding constraints or considering their specific needs from the range of different measurables detailed data analysis provides.
- The technology used in the development of dashboards differs from other software solutions already employed in organisations and can be initially difficult to understand.

- The business has no predetermined rules and hierarchies for how dashboard metrics are used. This means each employee can use the metrics in different ways, resulting in a diverse set of data being reported.

APPLICATIONS

- If you manage complex campaigns, you usually end up having several analytics solutions for each platform and needing to consult them separately, which hinders the overall view. Instead, the dashboard displays data from different sources, like web analytics solutions, social media metrics. This way, makes it much easier to compare them and see how they develop.
- A good dashboard clearly shows you a number of key metrics so you don't need to be an analytics expert to understand them. If you want to look further into a particular data set, you always have the option of employing more specific tools.
- If you synchronize your dashboard automatically in the cloud, you can create different users so that your entire team can access the same information from anywhere. It's even possible to project the dashboard onto a screen in your office so that the whole team can see what is going on in real time.
- Having a centralized dashboard will save you a lot of time. Instead of collecting data from different sources and making charts on your own, dashboards do all this work for you. You just need to invest some time at the beginning to set up the metrics and decide how to present them. From that point on, the reports are created automatically.

CONCLUSION

From this project, we have successfully:

- Created multiple analysis charts / graphs
- Used the analysed chart creation of dashboard
- Saved and visualised the final dashboard in the IBM Cognos Analytics

FUTURE SCOPE

Various other charts can be prepared like:

- Monthly income vs Number of Companies Worked
- Years in Current Role vs Total Working Years
- Monthly Income vs Years at Company