

PROJECT REPORT : **"IBM Cognos Powered Hr and People Analytics Dashboard"**

1. INTRODUCTION:

1.1 Overview

An HR dashboard is a business intelligence tool that allows Human Resource teams to monitor, manage, track, and report on data. Using this business intelligence tool enables you to track, analyze and report on HR KPIs. numbers.

1.2 Purpose

The interactive dashboard which is created by using IBM Cognos Analytics, leverage an **HR analytics** platform which makes it easy to combine data from all systems and to deeply explore the data directly within the dashboard. This way, HR teams can quickly find insights that will improve recruiting, optimize workplace management and enhance employee performance.

2. LITERATURE SURVEY:

2.1 Existing problem **How can you reveal the data needed from a complex data?**

Methods or approaches:

1. Grouping manually and analysing: We have to group the data manually that is needed, and this process takes more time and in the middle if we have to modify with some more data then we have start this process from the beginning which takes more efforts and time.

2. By using Dashboard:

- **Makes the complex simple:** We have lots of information, lots of data that changes all the time and different analytical needs and questions. we can take all this complexity and make it simple.
- **Tells a clear story:** We want to be able to connect data to its context in the business and to answer the viewer's questions. This is where the visual layout of a dashboard plays a crucial role.
- **Expresses the meaning of the data:** The chosen data visualizations need to correctly represent the data and the information you want to extract from it.
- **Reveals details as needed:** The viewer can access to the data they need -- no less but also no more.

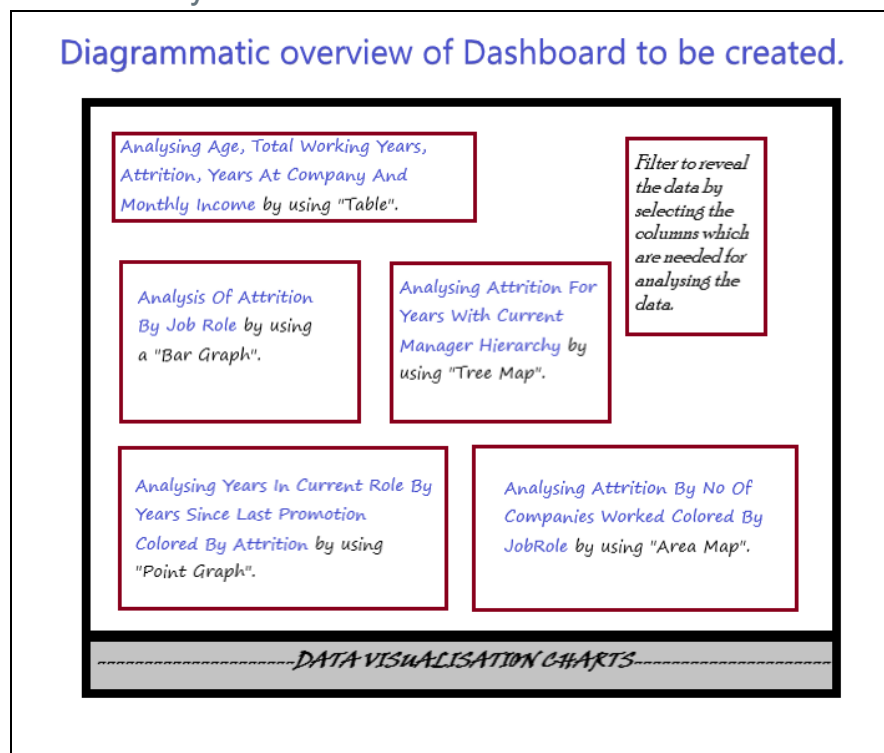
2.2 Proposed Solution

- A dashboard is a visual display of all of your data. While it can be used in all kinds of different ways, its primary intention is to provide information at-a-glance, such as KPIs.
- Dashboards allow all kinds of professionals the ability to monitor performance, create reports and set estimates and targets for future work.
- A dashboard usually sits on its own page and receives information from a linked database. In many cases it's configurable, allowing you the ability to choose which data you want to see and whether you want to include charts or graphs to visualize the numbers.

3.THEORITICAL ANALYSIS:

3.1 Block Diagram

The image below is the Diagrammatic overview of the Dashboard that have to created by analysing the data in different data visualization charts and they are filtered by giving the filter tab in the dashboard.This feature filters the data and shows the analysed data which we want to see.



3.2 Hardware / Software

"IBM COGNOS ANALYTICS"

- ✓ **IBM Cognos** is a business intelligence tool for web-based reporting and analytics.
- ✓ It is a Online based BI Tool.
- ✓ **BI(Business Intelligence)** is a set of processes, architects, and technologies that convert raw data into meaningful information.
- ✓ The various features of **IBM Cognos** are **Dashboard Creation,Reporting,Analysis,Data Integration.**

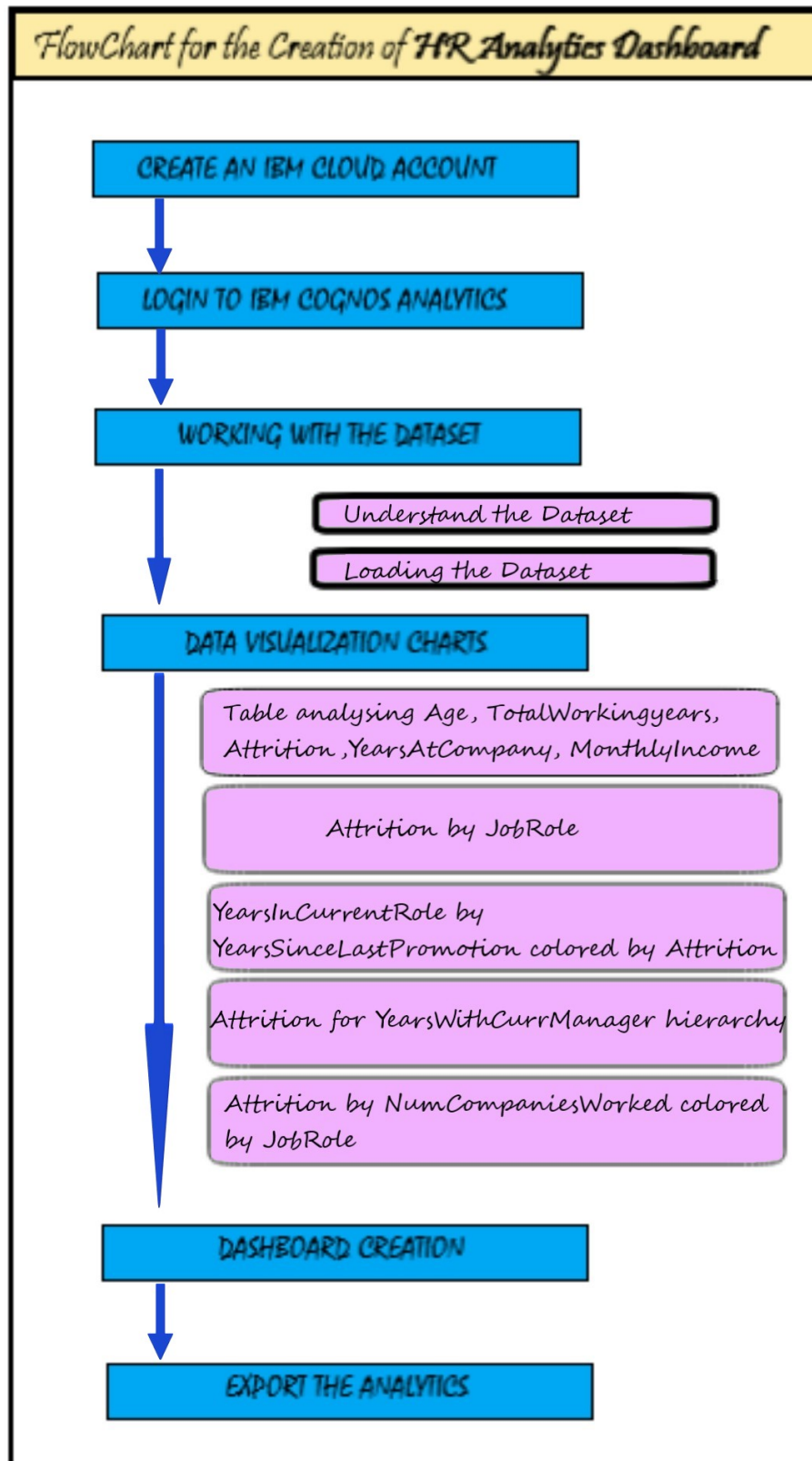
4.EXPERIMENTAL INVESTIGATIONS

The dataset has to be refined and are having non-null values.We have to choose the data on which graph it can be analysed gives us the information.

The graphs for which the data has to come up by using a suitable graph like comparison,relationship,composition,distribution.

- Comparison charts are used to compare one or more datasets. They can compare items or show differences over time.
- Relationship charts are used to show a connection or correlation between two or more variables.
- Composition charts are used to display parts of a whole and change over time.
- Distribution charts are used to show how variables are distributed over time, helping identify outliers and trends.

5. FLOWCHART



6.RESULTS

1.Analysing Age,Total Working Years,Attrition,Total Working Years,Attrition,Years At Company and Monthly Income by using a "Table".

Table 1

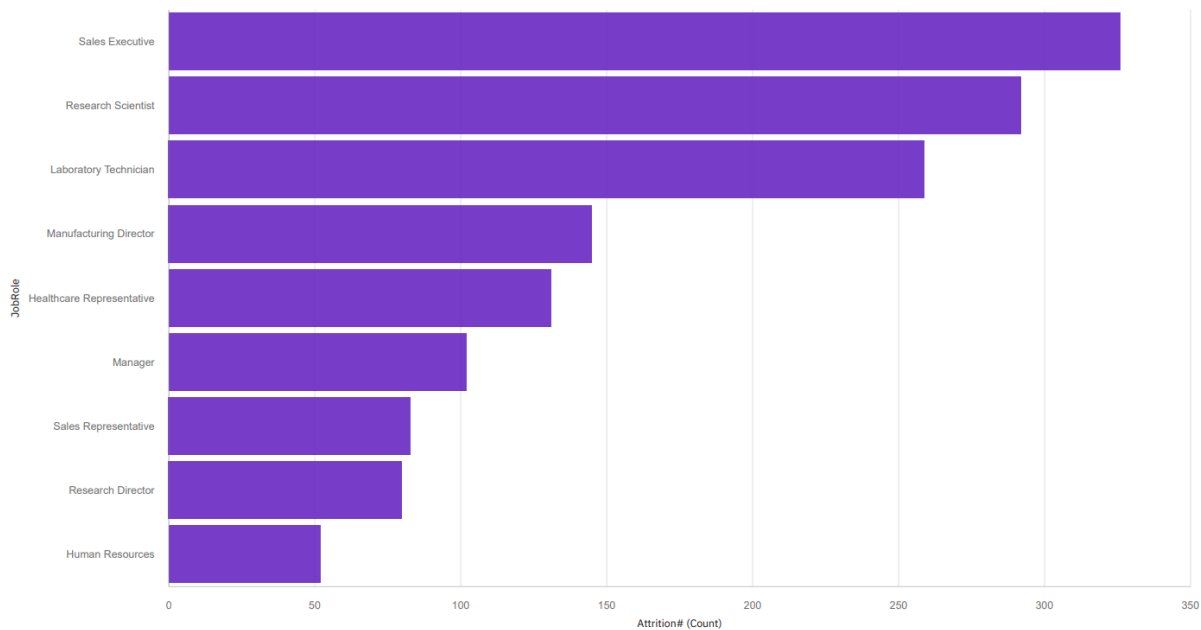
Attrition#, MonthlyIncome, Age, YearsAtCompany and TotalWorkingYears

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

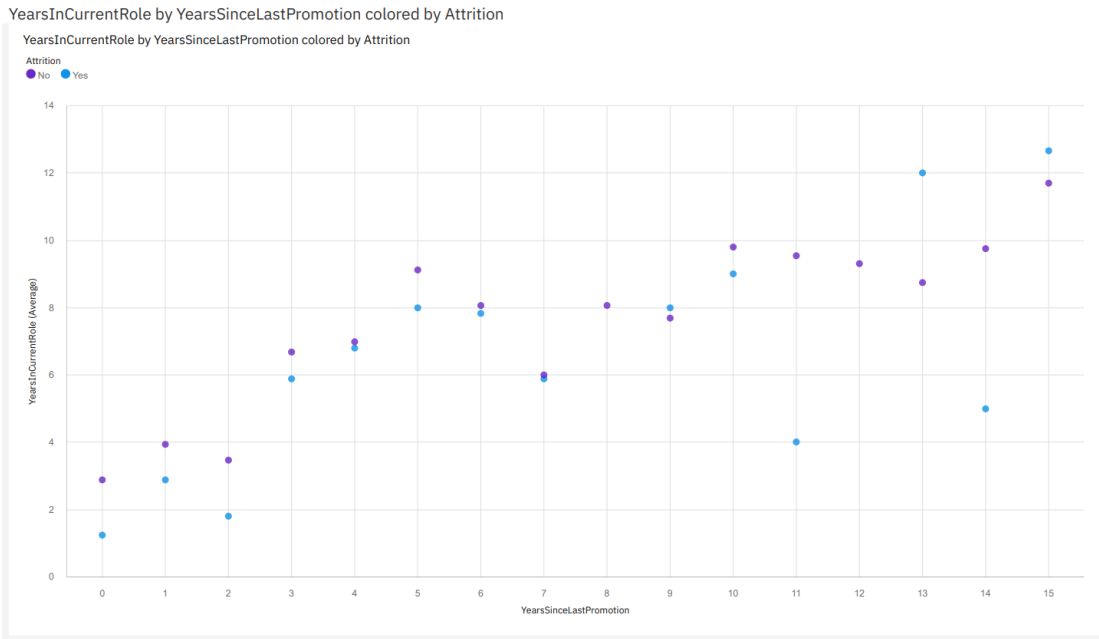
2.Analysis of Attrition by JobRole by using a "Bar Graph".

Attrition# by JobRole

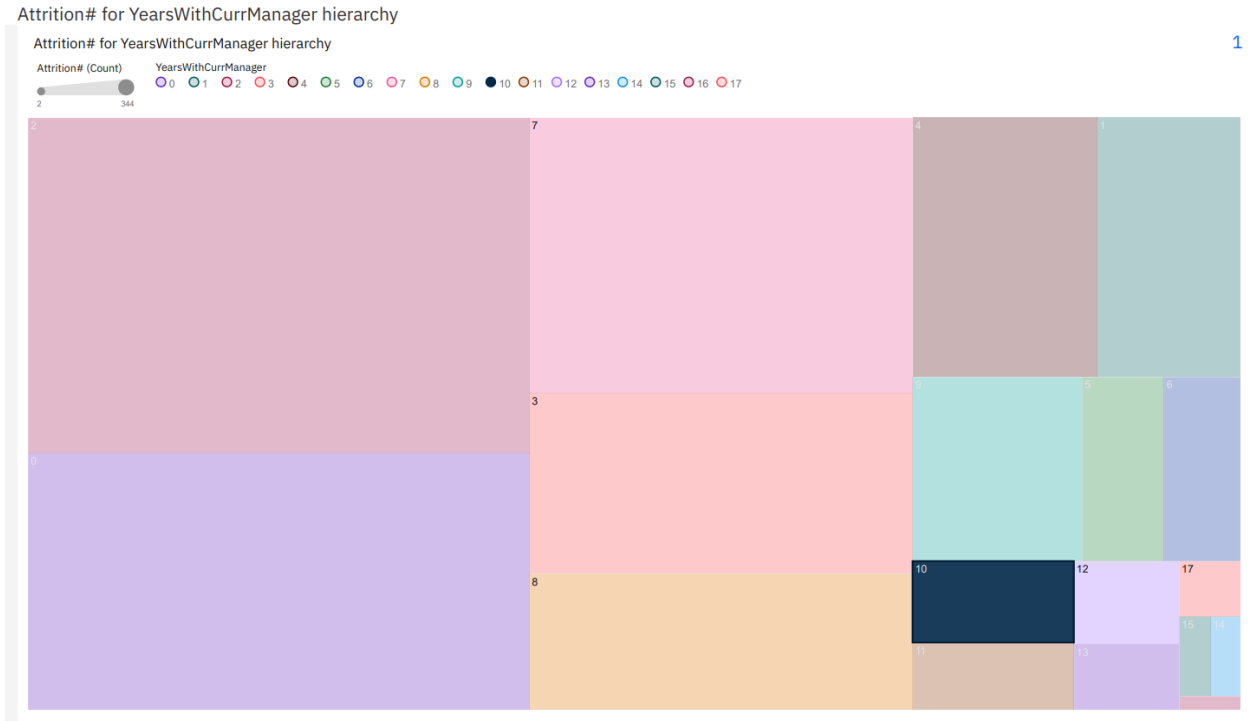
Attrition# by JobRole



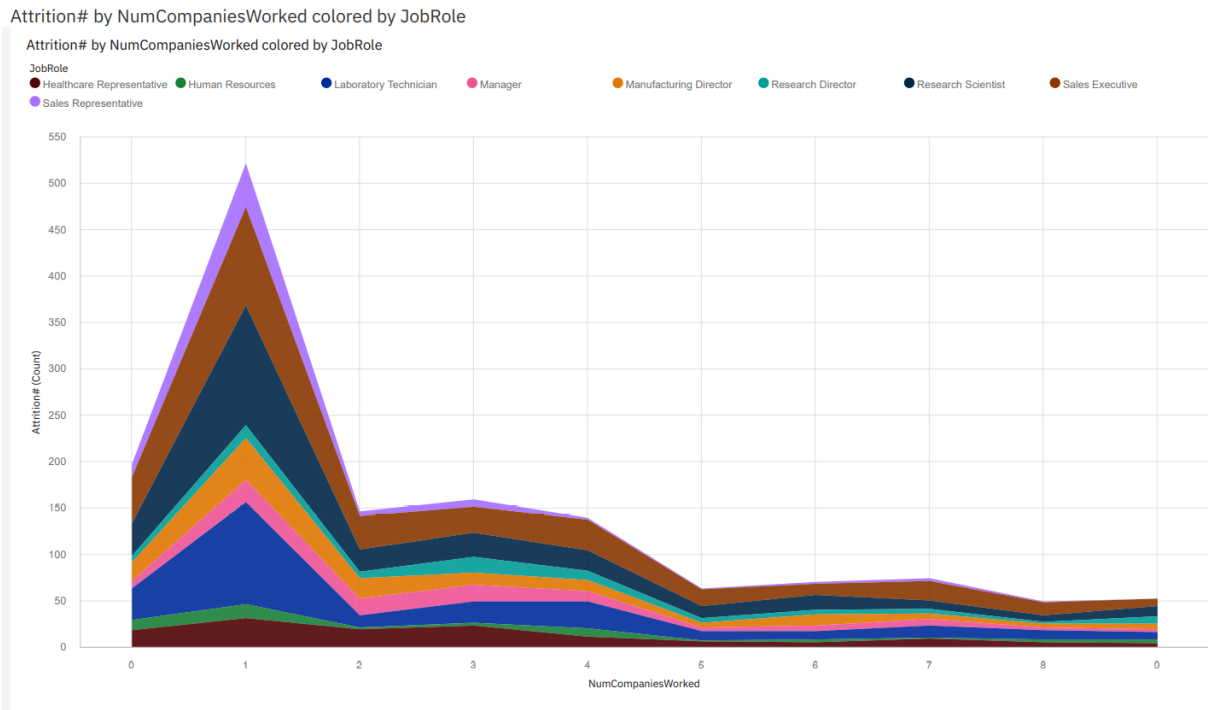
3. Years In Current Role By Years Since Last Promotion Colored By Attrition *by using a "Point Graph".*



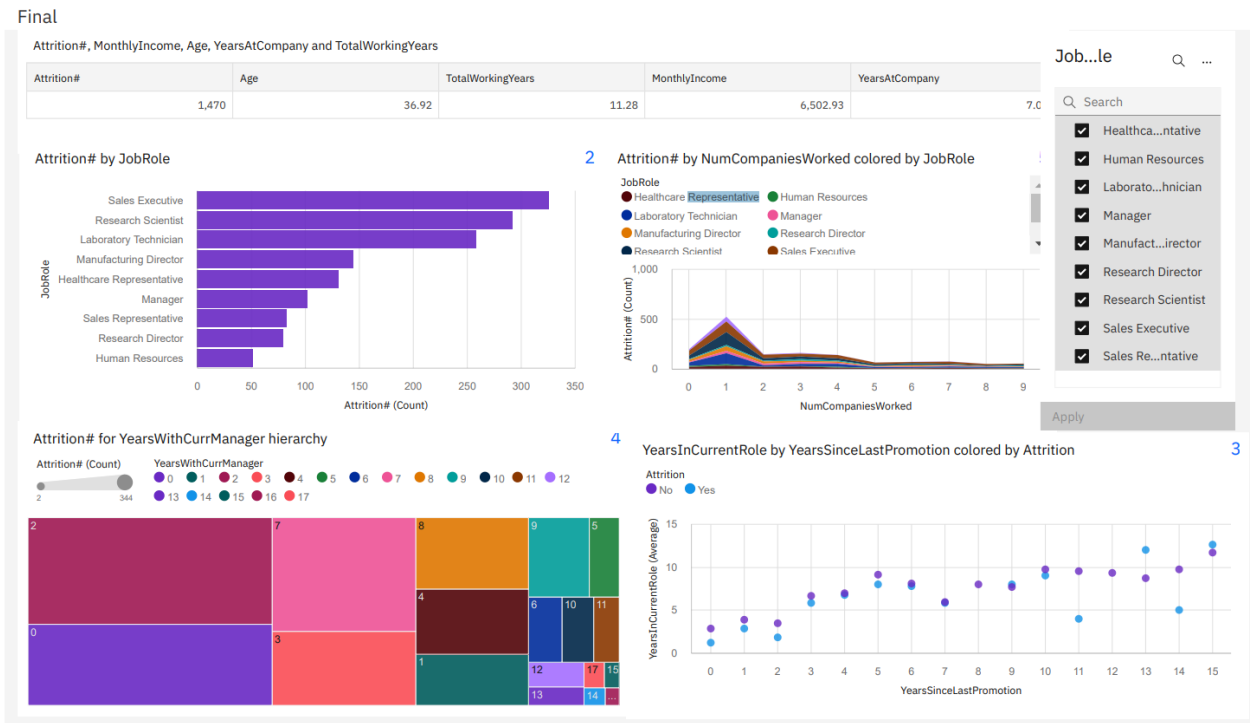
4. Attrition For Years With Current Manager Hierarchy *by using "Tree map".*



5.Attrition By No Of Companies Worked Colored By JobRole



-----The Final output after the creation of HR Analytics Dashboard:-----



7.ADVANTAGES & DISADVANTAGES

Advantages:

- a quick, synthetic and dynamic representation of:
 - the efficacy of HR management
 - social problems within the organization, which may or may not have been anticipated and affect employee retention or employee satisfaction
- easy communication between the employees and their managers and the executive board
- precise analysis thanks to the use of data and relevant metrics
- a good basis to write other key reports and recommendations

--> These benefits make the HR dashboard an essential tool to help with decision making. Indeed, it provides an accurate, real-time overview of the current situation of human resources. Data and insights make it possible for HR managers to define a coherent strategy to take actions that will be grounded in the reality experienced by operational teams.

Dis-Advantages:

1. There are also a couple of disadvantages, since HRs deal with huge amount of sensitive and confidential data, security and privacy are two main concerns.
2. Any HR analytics system which handles this data must be designed to prevent any unauthorized access. There have to be multiple levels of access and the system must be constantly monitored for any data theft.
3. Maintaining such a system will obviously lead to greater costs and that's the second main disadvantage to implementing HR analytics.
4. High acquisition and maintenance costs mostly act as a deterrent, especially for smaller companies to implement such a system. Also, operating a sophisticated HR analytics tool requires special expertise and that results in additional training costs, or the costs of hiring an IT expert to handle this system.

8.APPLICATIONS

☆ Executive HR Dashboard.

Human resource executives need to be able to quickly review and analyze all critical KPIs in one place. This example displays high-level metrics such as employees by role and by location and key ratios such as gender and training.

☆ Employee Performance Dashboard.

Employee performance dashboards help HR teams and business managers understand the effectiveness, satisfaction and goal progress of their workforce. To analyze compensation vs. performance this example shows the number of active employees by rating level and salary by employee rating.

☆ Employee Development Dashboard.

Employees are the most important asset within an organization. This HR dashboard example shows an HR leader training program metrics such as completion percentage, hours and cost. Interactive charts allow the user to break out data by dimensions like department, program, gender and more.

☆ Workforce Demographics Dashboard.

HR executives strive to maintain a diverse and balanced workforce, so they need to fully understand the demographic characteristics of their employees. This HR dashboard template allows them to deeply analyze data on age, gender, location, department and ethnic groups.

☆ Workforce Diversity Dashboard.

Using an interactive dashboard, HR professionals can dig deeper into demographic data and analyze one variable, such as ethnic diversity. This example shows the number of employees for each ethnicity and breaks out the data by country and by salary.

☆ Women in the Workforce Dashboard.

An HR professional can use a dashboard to analyze how one particular group is represented in the workforce. This example shows how data visualization helps convey overall gender data and the break

out by job role, by country, and in management..

☆ Gender Salary Comparison Dashboard.

HR professionals can use an interactive dashboard to dig deeper in the data, and analyze one variable. In this example, average salary is compared by gender and broken out by management positions, employee tenure and country.

9.CONCLUSION

- ◎ From the above report we can conclude that the overall performances at different departments can be displayed and can be understandable by seeing the Dashboard.
- ◎ In this project we have to create a IBM Cloud Account and login to the IBM Cognos Analytics.
- ◎ Then, we have to upload the Dataset of HR employee Analytics and understand the data and refine it without having any null values.
- ◎ The Refined data is used to plot graphs with various comparisons in each tab.
- ◎ These tabs are moved to a single tab to create a Final Dashboard.
- ◎ And in the Final Dashboard we can see the filter that can be applied and see the statistics in between our given combinations.
- ◎ We have plotted the graph's such as:
 - 1.*Analysing Age,Total Working Years,Attrition,Total Working Years,Attrition,Years At Company and Monthly Income by using a "Table".*
 - 2.*Analysis of Attrition by JobRole by using a "Bar Graph".*
 - 3.*Years In Current Role By Years Since Last Promotion Colored By Attrition by using a "Point Graph".*
 - 4.*Attrition For Years With Current Manager Hierarchy by using "Tree map".*
 - 5.*Attrition By No Of Companies Worked Colored By JobRole*
- ◎ The above graphs are moved to a single tab for the creation of Dashboard and the filter is added to the Dashboard over Department.

10.FUTURE SCOPE

- ↪ As we have seen the Dis-advantages,as HRs deal with huge amount of sensitive and confidential data, security and privacy are two main concerns.
- ↪ Any HR analytics system which handles the data will be designed to prevent any unauthorized access. They will implement such that the data has multiple levels of access and the system must be constantly monitored for any data theft.
- ↪ Secondly, High acquisition and maintenance costs mostly act as a deterrent, especially for smaller companies to implement such a system. Also, operating a sophisticated HR analytics tool requires special expertise and that results in additional training costs, or the costs of hiring an IT expert to handle this system. This is also can be solved in the future by giving the company a simple tool and they can create the dashboard simply.

11.BIBILOGRPHY

Website Links:

<https://www.aihr.com/blog/hr-reporting-hr-report-hr-dashboard/>

<https://www.klipfolio.com/human-resources-analytics-tool>

Books:

The New HR Analytics

<http://u.camdemy.com/sysdata/doc/f/fb30e8a98c5d9a85/pdf.pdf>

Source Code:

```
<iframe  
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Dashboard link:

https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FIBM%2BCognos%2BPowered%2BHR%2Band%2BPeople%2BAnalytics%2BDashboard&action=view&mode=dashboard&subView=model0000017ca2bfb259_00000000