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College Placement Management System Using Power BI

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Abstract

A student's placements can bring a wide range of benefits and opportunities. Manual system in colleges requires a lot of manpower and time. The major problem is difficult to searching and updating the student's data. This system will help to resolve the issue of manual work that makes the process slow and other problems such as inconsistency and ambiguity in operations. It makes placement process easier and smoother for future. The integration of advanced data analytics and visualization tools into college placement systems has revolutionized how educational institutions track, manage, and enhance their placement processes. The system is designed to collect, process, and visualize placement data by providing actionable insights. The proposed system leverages Power BI's capabilities to create interactive dashboard and reports that offer a detailed overview of student's placement details.

Keywords: Real-time data updates, visualizations, and customizable reports, which collectively enhance decision-making processes for administrators, career counsellors, and students.

1 Introduction

Microsoft Power BI is a collection of apps, software services and connectors that come together to turn unrelated data into visually impressive and interactive insights. Power BI can work with simple data sources like Microsoft Excel and complicated ones like cloud-based or on-premises hybrid Data warehouses. Power BI has the capabilities to easily connect to your data sources, visualize and share and publish your findings with anyone and everyone. Power BI constitutes of a Microsoft Windows desktop application called Power BI Desktop, an online SaaS (Software as a Service) called Power BI Service and a mobile Power BI app that can be accessed from Windows phones and tablets, and also available on Apple iOS and Google Android devices. These three elements Desktop, the Service, and Mobile apps - are the backbone of the Power BI system and lets users create, share and consume the actionable insights in the most effective way.

2 Methodology

Microsoft Power BI is used to find insights within an organization's data. It can help connect disparate data sets, transform and clean the data into a data model and create charts or graphs to provide visuals of the data. All of this can be shared with other Power BI users within the organization. Data models created from Power BI can be used in several ways, including the following: Telling stories through charts and data visualization. Power BI also provides executive dashboards for administrators and managers, giving management more insight into how departments.

2.1 Visualizations

A visualization is a representation of data in a visual format. It could be a line chart, a bar graph, a colour coded map or any visual way to present the data. Visualizations can be a simple number representing a significant calculation or it could be more complex like multiple charts showing the proportion of users participating in a survey. The main idea of visualization is to show the data in a way that tells the story that is lying underneath it.

2.2 Datasets

A dataset is a collection of data that Power BI uses to create its visualizations. You can have a simple dataset that's on a single table from a Microsoft Excel workbook, similar to what's shown in the following image. Dataset can also be a combination of many different sources, which can be filtered using Power BI and combined into one to use.

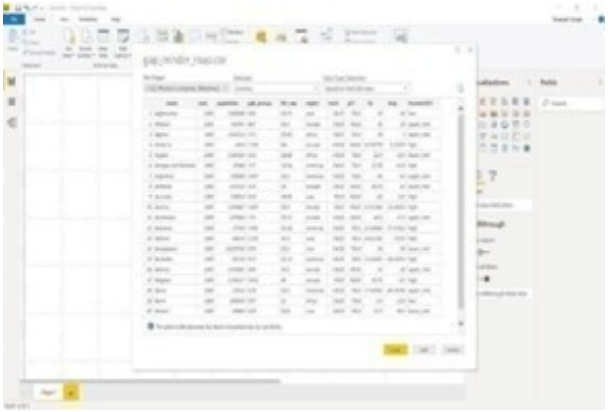

Figure 1:

2.3 Reports

In Power BI, A Report is a collection of visualizations that appear together on one or more pages. A report in Power BI is a collection of items that are related to each other. We will be working with the gap minder data to create the report below that looks at the GDP, population and life expectancy by global regions.

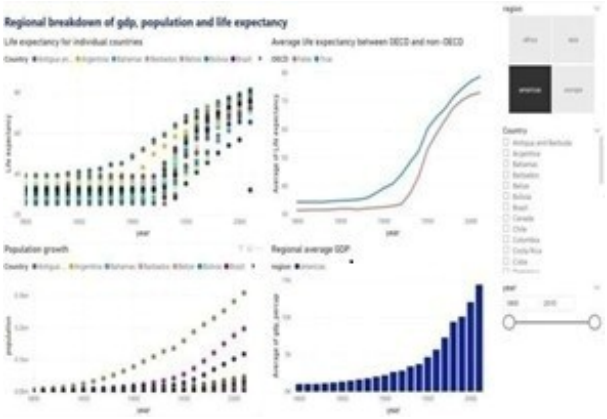

Figure 2:

2.4 Dashboards

A Power BI dashboard is a collection of visuals from a single page that you can share with others. Often it is a selected group of visuals that provide quick

insight into the data or story you are trying to present. A dashboard must fit on a single page, often called a canvas (the canvas is the blank backdrop in Power BI Desktop or the service, where you put visualizations). Think of it like the canvas that an artist or painter uses a workspace where you create, combine, and rework interesting and compelling visuals. You can share dashboards with other users or groups, who can then interact with your dashboards when they're in the Power BI service or on their mobile device. Power BI Services

3 Power BI Services

Power BI Desktop is a free application for PCs that lets you gather, transform, and visualize your data. In this module, the learn how to find and collect data from different sources and how to clean or transform it. If also learn tricks to make data-gathering easier. Power BI Desktop and the Power BI Service work together. You can create your reports and dashboards in Power BI Desktop and then publish them to the Power BI Service for others to consume. Power BI Service is the online component of Power BI is publish your dashboards and reports. Also view other dashboard and reports that have been shared with you. One thing to be aware of is that once the report is published, the report and underlying data will be stored on Microsoft servers and is not private. Be aware of any privacy or confidentiality issues with your data and Power BI license This version allows to use all the functionalities of the desktop version such as loading, analyzing and visualizing data. It will create as many visuals and reports as you would like with the free license. However publishing and sharing your reports and visuals online with another person or publically requires a Power BI license.

Figure 3:

4 Existing System

The existing system for college placement management typically refers to traditional approaches and legacy systems used to track students' placement processes. It may rely on spreadsheets, manual reports, or older databases to track student data, companies, placement status, and other related information.
Manual Data Entry
Most of the data input is manual and can be error-prone. This can lead to inconsistencies and a lack of real-time information. Limited Reporting Capabilities
Generating custom reports or visualizing data may require complex Excel formulas or other static reporting tools that are not interactive. Time-Consuming Processes
Placement coordinators spend a significant amount of time generating and sharing updates manually. Lack of Advanced Analytics
Traditional systems often don't provide in-depth data analysis, trends, or forecasting of placement outcomes, making it difficult to improve or adjust strategies based on past performance.
we suggest using another approach or tool if cannot anonymise your data.

Excel/Spreadsheets
Often the primary tool for tracking students, placements, and company details.

5 Proposed System

The proposed system leverages Power BI, a business analytics tool from Microsoft, to enhance data visualization, reporting, and decision-making in the college placement management process.
Data Collection: The system will pull data from various sources such as databases, spreadsheets, and job portals.
Data Transformation and Modeling: Power BI's Power Query tool can clean, transform, and merge data from disparate sources into one usable model.
Data Visualization and Dashboards:Use Power BI's interactive reports to create dashboards that reflect placement trends, student profiles, company details, etc. Publishing and Sharing:Dashboards and reports will be shared securely with authorized users, such as placement officers, recruiters, faculty, and students.
Real-time Access and Collaboration:Real-time dashboards provide up-to- date information, facilitating better communication between placement coordinators, students, and recruiters.
Reduced Errors & Time: Automation reduces the time spent on manual data entry and minimizes human error. Power BI's data connections also ensure that information is always up to date.

6 Experimental Result

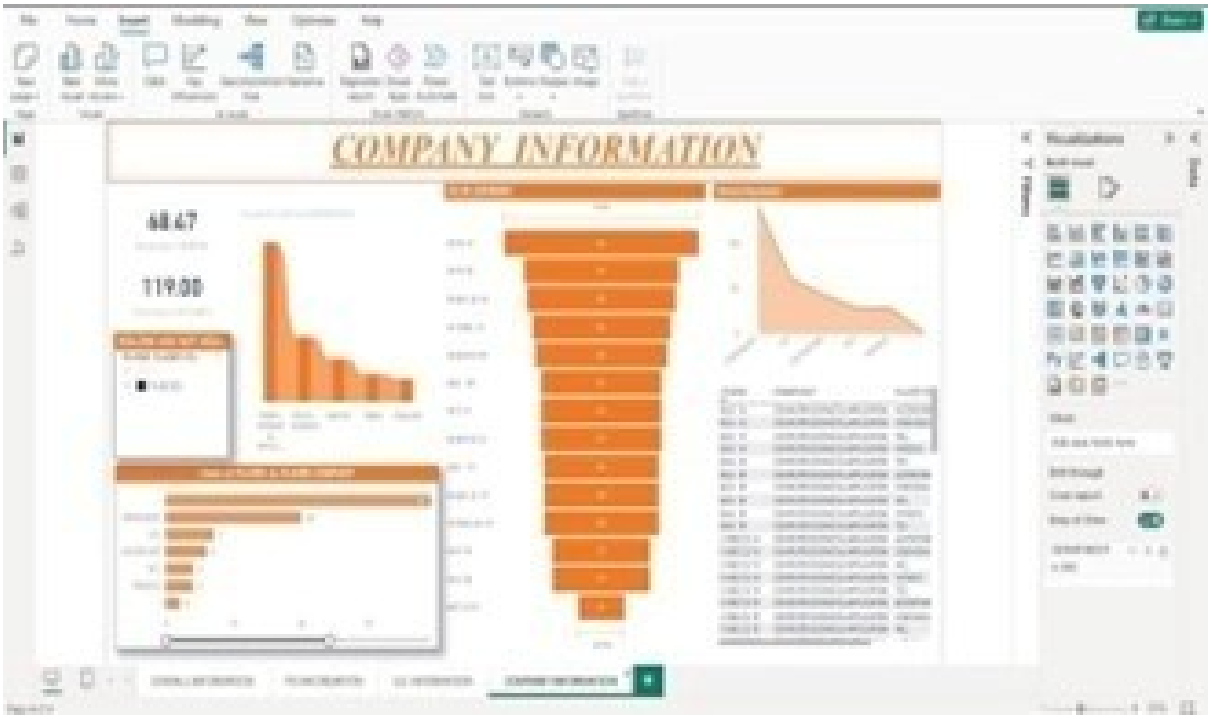

Figure 4: Power BI dashboard showcasing student placement statistics.

Figure 5: Visualization of placement trends across academic years using Power BI.

Figure 6: Interactive report highlighting student-wise placement performance.

Figure 7: Company recruitment data visualized through bar and pie charts.

Figure 8: Dashboard representing skill-set distribution among placed students.

Figure 9: Power BI visualization summarizing department-wise placement metrics.

7 Conclusion

In conclusion, the College Placement Management System(CPMS)powered by Power BI efficient, and data driven approach to managing the placement process at educational institutions. By leveraging Power BI's advanced data visualization and business intelligence capabilities, the system can streamline various facets of the placement process, including student profiles, company details, placement status, and performance metrics. The user-friendly, interactive dashboards provide a visually appealing way to track key performance indicators (KPIs) such as placement rates, student performance, recruiter feedback, and more. This enables stakeholders to monitor progress and make adjustments quickly. Power BI enables easy sharing of reports and dashboards with key stakeholders, such as faculty members, students, and recruiters. This promotes collaboration and transparency throughout the placement process.

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