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**Exploring the World of paid Time Off: A Global Perspective on Vacation Equality**

Enhancing Data Insights: A MakeoverMonday Visualization Redesign

Hands-On Data Visualisation for Data Science

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# Introduction:

Welcome to a journey through data and design, where we explore the intricate balance of work and leisure across the globe. In the realm of data science, the power of visualization lies in its ability to transform raw data into a compelling story that resonates with its audience. Recognizing this power, I embarked on a project to enhance a dataset from MakeoverMonday, which examines the distribution of paid vacation days around the world.

The dataset chosen for this project presents a global perspective on vacation policies an essential component of employee well-being and organizational culture. The original visualization, while informative, offered scope for a more impactful narrative through improved interactivity and clarity.

This endeavor aims to refine the visualization to not only make it more visually appealing but to also ensure that the insights derived are both intuitive and actionable. Join me as we delve into this dataset, uncovering the subtleties of paid leave and its implications on the global workforce.

# Project Scope and Data Gathering

The original visualization I chose to makeover presented an overview of the world's paid time off policies. It can be viewed in its original form here:

<https://data.world/makeovermonday/2022w50>

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Figure 1 Original Visualisation

Upon initial review, the existing visualization struck me as a strong starting point. It mapped out the key components of global vacation policies effectively. However, it became evident that there were opportunities to deepen the analysis and enhance the user experience. The visualization was primarily static, offering limited interaction, which I felt could be expanded to allow for more personalized exploration by users. Additionally, while the visual did a commendable job of displaying the data, it lacked the narrative element that could make the information more relatable and memorable for the audience.

# Data Exploration and Analysis

## Understanding the Dataset's Structure and Quality

Diving into the dataset from MakeoverMonday revealed a straightforward yet rich structure. Each entry in the dataset represents a different country, accompanied by three key metrics: the number of statutory paid leave days, paid public holidays, and the total number of paid vacation days. A thorough quality check confirmed the dataset's robustness, with no missing values or apparent inconsistencies. This high level of data integrity allowed for a reliable and accurate analysis.

To augment the dataset and further the analysis, I introduced an additional layer by incorporating the happiness scores from the 2022 World Happiness Report. This addition was aimed at exploring the hypothesis that more paid vacation might correlate with increased happiness. By integrating this data, the analysis could extend beyond a mere account of vacation days to an exploratory narrative on the potential relationship between paid time off and a nation's happiness.

This enriched dataset allows for a multifaceted analysis that not only reflects on the number of vacation days but also the quality of life, providing insights into the interplay between work-life balance and happiness. The visualization's goal is thus to invite reflection on whether the opportunity to recharge through paid leave can indeed lead to greater national contentment.

## Initial Discoveries in Global Paid Leave

The initial analysis of the dataset uncovered several intriguing global trends:

* The **average number of paid leave days** across all countries stands at approximately 18.2 days per year.
* For **public holidays**, the global average is about 11.8 days annually.
* Combining these, the **average total paid vacation days** globally rounds up to 30 days per year.

These averages, however, only scratch the surface of the vast differences in paid leave policies around the world.

# Contrasts and Surprises in Paid Vacation Days

A deeper dive into the data revealed startling contrasts between countries:

* **Iran** emerged at the top with a staggering total of 53 paid vacation days, driven not only by its 26 days of paid leave but also by its high number of public holidays.
* On the other end of the spectrum, **Micronesia** presented a stark contrast, with only 9 total paid vacation days, highlighting a significant global disparity in work-life balance policies.

These extremes raise questions about the cultural, economic, and policy factors influencing such disparities. For instance, Iran's high number of public holidays is closely tied to its cultural and religious practices, while Micronesia's minimal paid leave reflects different socio-economic priorities.

# Insights and Answers from the Dashboard Visualization

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Figure 2 Improved Dashboard

# Exploring the Balance of Work and Leisure

Our data visualization project sought to answer several key questions about the state of global vacation policies and their potential impact on societal well-being. Using the comprehensive dashboard created in Tableau, let's address these questions with insights drawn directly from the visualization.

**1. How do paid vacation policies vary across different countries and regions?**

The map on the dashboard vividly illustrates the variation in paid vacation policies. For instance, countries like Iran are highlighted with a darker shade, indicating a high number of total paid vacation days (53 days as shown on the map). In contrast, lighter shades across continents such as North America and parts of Asia and Africa suggest fewer paid vacation days, aligning with more conservative vacation policies in these regions.

**2. Is there a correlation between the number of paid vacation days and the overall happiness of a country's citizens?**

The scatter plot below the map provides a visual exploration of the relationship between total paid vacation days and happiness scores by country. The varying sizes of the circles represent the total paid vacation days, while their placement along the x-axis (total paid vacation days) and y-axis (happiness score) indicates the level of correlation. From the dashboard, it appears that there is no strong correlation, as indicated by a mix of both large and small circles across the entire range of the happiness score axis.

**3. What patterns emerge when comparing the allocation of paid leave and public holidays with happiness scores?**

The stacked bar chart gives a detailed breakdown of the paid leave versus public holidays by country. When we look for patterns, we can see that countries with the highest happiness scores do not necessarily have the highest number of vacation days. For instance, Finland stands out with the highest happiness score but does not have the maximum number of vacation days, suggesting that while vacation is important, there

are other factors contributing to the happiness scores. This prompts a nuanced understanding that paid vacation is one of several variables affecting national contentment.

**4. Which countries deviate from the global average in terms of paid vacation days, and what might this indicate about their work culture and social norms?**

The dashboard allows us to identify outliers in terms of vacation days. Iran, for example, significantly exceeds the global average, which could suggest a strong cultural or policy-driven emphasis on work-life balance. Similarly, countries with fewer vacation days than the global average, such as the United States, might reflect different societal priorities or economic structures. Such deviations provide a starting point for deeper investigation into how different societies value time off and its implications on the workforce's health and productivity.

The data visualization dashboard provides a comprehensive tool to analyze and understand the complexities of global vacation policies and their broader implications. While it reveals significant disparities across countries and regions, it also highlights the nuanced relationship between vacation time and happiness. By allowing us to visualize and interact with this data, we gain valuable insights into the diverse ways societies approach work-life balance and the pursuit of well-being. This analysis catalyzes discussions about how we can create policies that foster happier, healthier, and more productive societies around the world.

# Defining the Visualization Purpose

In developing the new visualization, my objective was to craft a narrative that goes beyond presenting data, to one that prompts exploration and elicits understanding. The visualization was designed to answer several questions that connect the dataset to larger discussions about work-life balance and societal well-being:

1. **How do paid vacation policies vary across different countries and regions?**
   * This question is central to understanding the global landscape of work-life balance. It allows us to explore how cultural, economic, and legislative factors shape the number of paid vacation days across nations.
2. **Is there a correlation between the number of paid vacation days and the overall happiness of a country's citizens?**
   * With the integration of happiness scores from the World Happiness Report, the visualization seeks to probe the relationship between rest and well-being. This question is vital as it touches on the possible impacts of rest on national well-being.
3. **What patterns emerge when comparing the allocation of paid leave and public holidays with happiness scores?**
   * This analysis aims to identify if there is a pattern that suggests a more significant number of days off correlates with higher happiness scores, potentially influencing future policies on paid leave.
4. **Which countries deviate from the global average in terms of paid vacation days, and what might this indicate about their work culture and social norms?**
   * Identifying outliers can lead to a deeper discussion about the socioeconomic and cultural narratives that drive such deviations.

These questions are integral to our visualization because they bring to the forefront the human aspect of data. Paid leave is more than a number; it is a reflection of a country's commitment to the health and happiness of its workforce. By exploring these questions, the visualization serves as a platform for dialogue about the importance of rest in our lives and the diverse ways societies approach the balance between work and leisure.

Through this enhanced visualization, we aim to not only inform but also engage stakeholders, be it policymakers, employers, or the general public, in a conversation about the value of time off. As such, the visualization is not merely a tool for displaying data but a catalyst for change, encouraging viewers to consider the significance of vacation policies and their broader implications.

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# Analysis and Creation of the New Visualization

The process of analyzing the data was iterative and multi-faceted, beginning with a clean-up phase to ensure accuracy and consistency. A statistical overview provided a baseline understanding before diving into deeper comparative and correlational analysis.

## Analytical Process:

* **Data Cleaning**: The dataset was first scrutinized for any anomalies or inconsistencies, ensuring the integrity of subsequent analysis.
* **Descriptive Statistics**: I calculated averages, medians, and ranges to grasp the dataset's central tendencies and dispersion.
* **Comparative Analysis**: I identified trends and outliers by comparing countries and regions, gaining insight into global and local vacation policies.
* **Correlational Study**: Integrating happiness scores allowed for correlation tests to understand the relationship between paid leave and happiness.

# Tableau Design Choices:

## Design Implementation and Interactive Features

The data visualization created for this project stands out due to its multi-dimensional analysis and interactive features, which significantly enhance the original visualization from MakeoverMonday. The uniqueness of this visualization lies in the following aspects:

1. **Interactive User Experience**: Unlike the static nature of the original visualization, the new design in Tableau offers interactive elements. Users can engage with the data more deeply, filtering by region, country, or other parameters, and discovering specific information through interactive maps and clickable charts. Key features include:

* **Map Visualization**: Users can hover over any country on the map to instantly view the total paid vacation days, facilitating an easy comparison of policies across nations.
* **Stacked Bar Chart**: By hovering over the bars, which are segmented into annual paid leave and public holidays, users can access specific numbers, enriching their understanding of each country's vacation policy.
* **Scatter Plot**: This plot reveals the relationship between paid vacation days and national happiness scores. Interactive data points display specific information for each country, enhancing user engagement with the data.
* **Country Filter Selection**: Users can tailor their view using filters like "All Countries" for a global overview, "Top 10 Countries" for focused analysis, or a specific country selection, offering flexibility in data exploration.
* **Interactive Navigation**: The dashboard allows users to hover over elements for detailed information and click on a country to highlight it across all visualizations, ensuring a seamless and integrated analytical journey.

1. **Comprehensive Comparative Analysis**: Utilizing stacked bar charts and scatter plots, the visualization facilitates nuanced comparisons between countries and regions. This approach uncovers patterns and correlations that may have been obscured in the original visualization, providing a broader understanding of global vacation policies.
2. **Integration of Happiness Data**: By incorporating happiness scores from the World Happiness Report, the visualization extends beyond a mere count of vacation days to explore the potential relationship between paid time off and national happiness. This addition transforms the visualization from a simple statistical overview to a narrative about the quality of life.

In creating the new visualization for the global vacation policies dataset, specific design choices were made in Tableau to enhance the storytelling, user experience, and accessibility. These choices are detailed below:

1. **Map Visualization:**

* **Geographical Context:** A map is an intuitive way to provide geographical context to data. It allows viewers to instantly recognize and relate to the data based on familiar geographical outlines.
* **Color-Based Comparison:** Using a color gradient on a map offers a visually effective method for comparing data across regions or continents. It allows for immediate visual cues about where countries stand relative to one another concerning the variable of interest, in this case, paid leave days.
* **Regional Relationships:** By color-coding countries based on the number of vacation days, the map also facilitates regional comparisons. Users can discern patterns within continents or between neighboring countries, potentially uncovering regional trends.
* **Focus on Top 10 Countries:** The map visualization can be customized to highlight specific countries, such as the top 10 countries with the most generous vacation policies. This focus draws the viewer's attention to these countries and encourages speculation about geographical or cultural factors that may contribute to these policies.
* **Geopolitical Insights:** Displaying the top countries geographically can reveal if they are clustered or dispersed, suggesting whether geographical proximity relates to similar vacation policies, which could be influenced by cultural exchange, economic ties, or political unions like the European Union.

1. **Stacked Bar Chart:**

* **Breakdown of Leave Types:** The stacked bar chart excels in displaying the composition of data. Showing annual paid leave and public holidays together gives a clear picture of the total leave days and how they are constituted**.**
* **Comparative Analysis:** Stacked bars allow for straightforward comparisons between countries. Viewers can easily see how the total leave days stack up against one another and the proportion of paid leave versus public holidays within each total.
* **Visual Clarity:** This type of chart provides a comprehensive view without overwhelming the viewer with numbers, making the data accessible at a glance.

1. **Scatter Plot:**

* **Correlation Exploration:** The scatter plot is a classic choice for investigating the relationship between two quantitative variables. Placing paid vacation days on one axis and happiness scores on another visually demonstrates if a positive, negative, or no apparent correlation exists.
* **Intuitive Interpretation:** The scatter plot helps in interpreting complex relationships more intuitively. For instance, a trend line can be added to the scatter plot, providing immediate visual feedback on the direction and strength of the relationship between paid leave and happiness.
* **Outlier Identification:** This type of visualization makes it easy to spot outliers or anomalies that deviate from the general trend. These outliers can prompt further investigation into why certain countries differ significantly from others.

In summary, each chart type was selected not only for its aesthetic appeal and clarity but also for its ability to convey complex data in an accessible manner, fostering deeper understanding and engagement with the content. The map provides a global overview and regional comparisons, the stacked bar chart breaks down the components of vacation time, and the scatter plot investigates underlying relationships all critical for a comprehensive analysis of global vacation policies.

**2. Color Schemes:**

* **Emphasizing Accessibility**: In my project, selecting a color-blind-friendly palette was a priority, considering the diverse visual capabilities of the audience. Recognizing that a significant portion of the population experiences color vision deficiencies, it was crucial to choose colors that ensure clear differentiation for all viewers. This approach not only caters to inclusivity but also guarantees that the visual message is conveyed effectively to everyone.
* **Unified Visual Harmony**: I paid special attention to maintaining a consistent color scheme across all charts and elements of the dashboard. This consistency is vital for creating a visually coherent experience. It aids in guiding the viewer through the data seamlessly, reinforcing data interpretation, and establishing a visual link across different components of the dashboard.

**3. Layout and Interactivity:**

* **Structured Logical Flow**: The layout of the dashboard was meticulously planned to facilitate a logical narrative flow. Starting from a broad overview and progressing to detailed insights, this structure ensures that viewers can easily comprehend the overarching themes before focusing on the finer details. Such an arrangement is pivotal in effective storytelling through data visualization.
* **Enhancing Engagement with Interactivity**: To elevate the dashboard beyond a static display, I incorporated interactive features such as filters, hover-over details, and clickable segments. These elements not only make the data exploration more personalized and relevant to each user but also significantly increase engagement, leading to deeper insights and a more immersive experience.

**4. Annotations and Tooltips:**

* **Strategic Use of Annotations**: The new visualization employs annotations to guide the viewer through key insights, drawing attention to significant data points and trends without cluttering the visual space. These annotations serve as informative guides, highlighting key points and providing contextual understanding without overwhelming the viewer with excessive text.
* **Layered Information through Tooltips**: Tooltips are an understated yet powerful tool I used to add depth to the data presented. By hovering over a data point, viewers can access additional details like exact numbers, percentages, or brief explanatory notes. This feature enriches the user experience by offering on-demand information, keeping the visual space uncluttered, and is particularly useful in more complex visualizations.

# Conclusion:

As I conclude this project on global vacation policies, the goal was not only to analyze data but to synthesize what I've learned throughout this module into a meaningful narrative. The task at hand was to take an existing visualization from MakeoverMonday, assess its strengths and weaknesses, and then improve upon it.

The journey began with a careful selection of a dataset that revealed how different countries allocate paid time off. I then moved to explore the data thoroughly, considering potential limitations and biases at each stage, from collection to processing, and finally to deriving insights.

The heart of this project was to redefine the purpose of the visualization. I aimed to answer key questions about the disparities in vacation policies and their potential impact on societal well-being, thus providing users with a tool to explore these complex relationships for themselves.

By designing a new visualization in Tableau, I not only brought a fresh perspective to the data but also added interactive elements and integrated additional data points to enrich the analysis. The resulting dashboard allows for a more dynamic and user-centric exploration of the data, which was one of the main improvements over the original visualization.

The annotations, chart choices, alignments, and layouts were carefully crafted to ensure that the new visualization provides a clearer, more engaging experience for the reader. This was achieved by incorporating interactive maps, stacked bar charts, and scatter plots, all of which offer more depth and facilitate a better understanding of the data.

In adhering to the project rubric, I ensured that the new visualization was guided by a clear problem statement, improved upon the analysis of the current visualization, enhanced the annotation and display, and included proper acknowledgments to MakeoverMonday's data and original visualization.

Now, as I invite you to view the interactive dashboard, I hope it inspires you to delve deeper into the data and join the conversation about how vacation time is an essential component of our lives. Through this project, I've sought to create a visualization that not only informs but also inspires action towards policies that support a healthier, more balanced global workforce.

<https://public.tableau.com/views/Project3_HandsonDataVisualisationforDataScience/AGlobalPerspectiveonVacationEquality?:language=en-GB&:display_count=n&:origin=viz_share_link>

# Appendix:

## Visualization Links

Below are the links to the visualizations referenced and created throughout this project. These visualizations serve as a core component of the analysis and narrative presented in the main body of the blog.

**Original Visualization from MakeoverMonday:**

* **Title:** 2022/W50: Which country gets the most paid vacation days?
* **Link:** <https://data.world/makeovermonday/2022w50>

This is the starting point of our project, providing a baseline for improvements and enhancements.

**Public Tableau Dashboard (New Visualization):**

* **Title:** Exploring the World of paid Time Off: A Global Perspective on Vacation Equality
* **Link:**

<https://public.tableau.com/views/Project3_HandsonDataVisualisationforDataScience/AGlobalPerspectiveonVacationEquality?:language=en-GB&:display_count=n&:origin=viz_share_link>

This link leads to the newly designed Tableau dashboard that offers an interactive and in-depth exploration of vacation policies around the world. This visualization incorporates additional data from the World Happiness Report and interactive features that allow users to engage with the data more deeply.

**World Happiness Report:**

* **Title:** World Happiness Report 2022
* **Link:** <https://www.kaggle.com/datasets/ajaypalsinghlo/world-happiness-report-2022>

This report includes the happiness scores that were integrated into our data set for a more comprehensive analysis. It provides context and a deeper understanding of the potential correlation between vacation days and national happiness.

## Screenshots:

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A map of the world

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A map of the world

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A graph of blue and orange bars

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