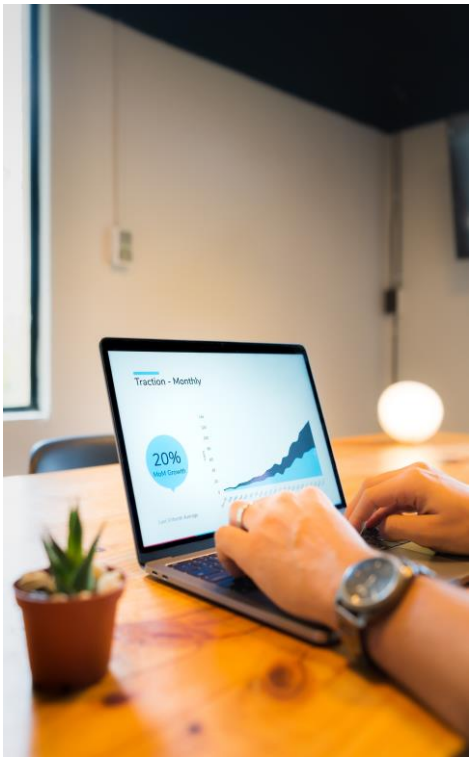
BIZ ANALYTICS

JUNE 2022 QUARTERLY NEWSLETTER

The data visualisation issue

As Business Analytics students, I'm sure we are all very familiar with the humble pie chart. A pie chart is an effective tool that can be used to depict statistics in an easy-to-read format. However, have you ever wondered whether a particular set of data can be better presented in a different manner? The answer to this question lies in Data Visualisation. Fundamentally, Data Visualisation is the graphical representation of data. It essentially communicates the message behind statistics, allowing for an easier understanding of trends in datasets and potentially complex concepts. In SUSS, we learn about Data Visualisation with the use of Tableau (Data Visualisation software).



PREPARED BY:

Ashwin Singh, Keerth Kaur Shergill and Shannon Fernandez

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Diving deeper into Data Visualisation

In the data industry, Data Visualisation is used to represent data via the use of graphics in order to study trends and understand potentially complicated content easier. Essentially, data is only valuable when it is properly refined, understood, and retained as knowledge. Therefore, Data Visualisation is considered a powerful tool that can simplify the process of data understanding, which in turn drives key business decisions in organisations. Some commonly used software in the industry include Tableau, Microsoft's Power BI, and QlikView. Each software has its own advantages and disadvantages, each of which must be considered by the user alongside the data project's goal. In this newsletter issue, we shall explore the aforementioned software packages, and gain a better understanding of them.

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A comparative look at 3 commonly used Data Visualisation software packages

	Power BI	Tableau	Qlikview
For Beginners	- Beginners are able to download the desktop version for free	- Can also be downloaded for free but has limited features to play around with	- Similar to Tableau, Qlikview can be downloaded for free but has very limited features
Advanced Versions	- Users can choose between two advanced versions, Power BI Pro and Power BI Premium Packages - Packages have a subscription cost of $10 - Compared to Tableau and Qlikview, Power BI is the cheapest	- Tableau's subscription for its advanced versions costs about $100 which may be too expensive for middle scale industries	- Has a $30 subscription fee
Analytics and Interpretation	- Power BI has many advanced features which allows for precise analytics and interpretation of the data	- Amongst the three, Tableau is best as it comes with many drill-down and filtering options	- Qlikview lacks proven analytics
Data Capturing and Warehousing	- Power BI easily connects to many data sources such as SQL and Azure.	- In terms of data source connections, Tableau is on par with Power BI	- Qlikview is also has good capabilities in fetching data from any source
Ease of Learning	- Relatively easy to comprehend as it is similar to Excel	- Tableau may be for more advanced users who have a data science background	- Similar to Tableau, Qlikview requires users to have programming skills to be able to effectively work this tool
Customer Community	- Power BI, comes with Office 365 package and is easily accessible	- Tableau has a long history and has a big customer community	- Qlikview is known to be for those with programming skills

Source: https://www.wallstreetmojo.com/power-bi-vs-tableau-vs-qlikview/

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A comparative look at 3 commonly used Data Visualisation software packages

Power BI:

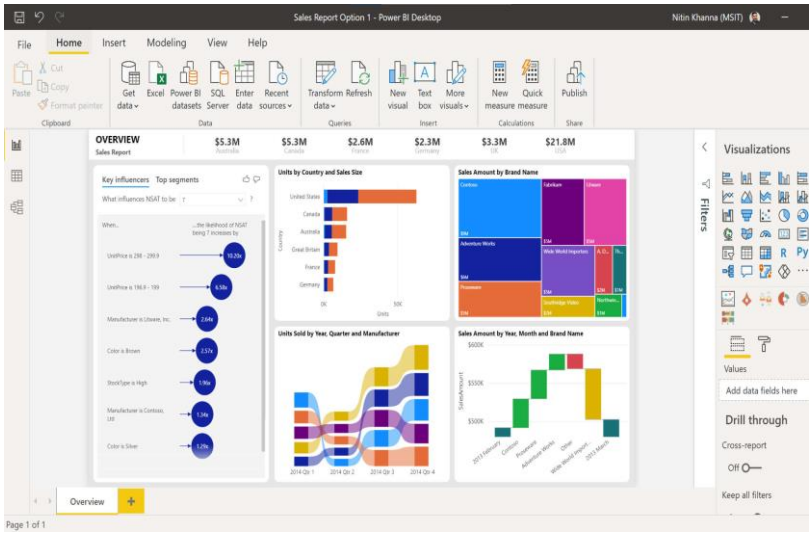
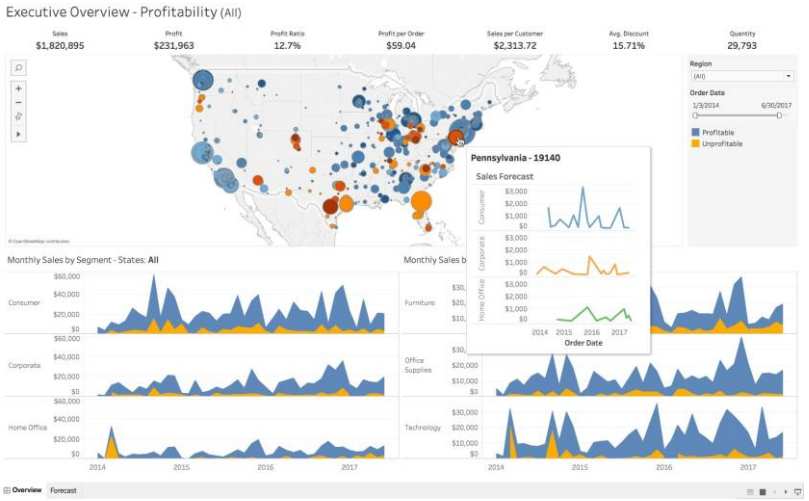
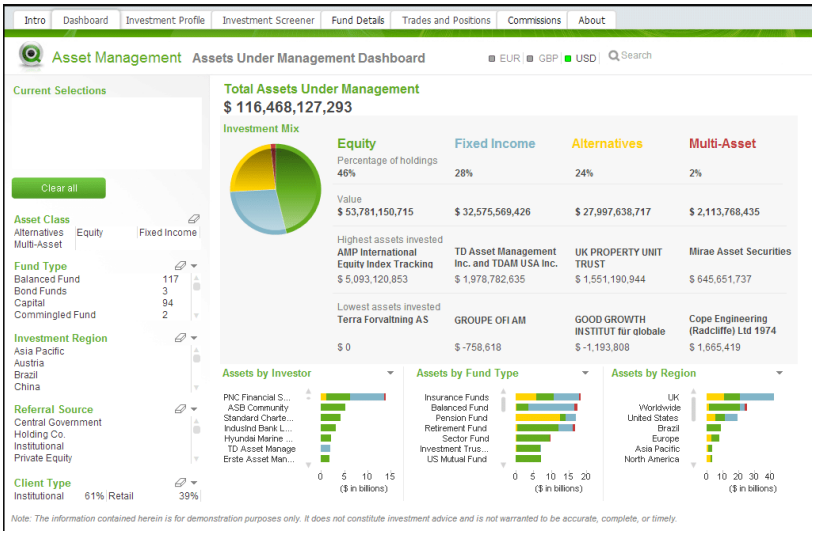


Tableau:



QlikView:



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To understand more about Data Visualisation, we spoke to Martin Ng, the Asia Regional Manager at StoryIQ

A little bit about our guest:

Martin is a a firm believer that data forms the lifeblood of any organisation. He enjoys working towards building an organisation's data-driven culture by focusing on the three key tenets of people, processes and systems.

Martin is also a co-founder of Marvin's Academy that focuses on character building, career guidance and training the requisite skills for the next generation to tackle the future

Ashwin (A): Hi Martin! Glad to have you here with us! Before we begin, could you share a little about yourself?

Martin (M): Hi! It's my pleasure to be here. I'm Martin, one of the lead trainers as well as the Asia Regional Head at StoryIQ, a global training company in data analytics and data storytelling.

A: How much planning went into the decision to join this field?

M: I guess it goes back to my passion for computers (and gaming!) This got me interested in pursuing a Bachelor's Degree in Computer Science (Information Systems). Entering the field of data was a natural progression from my early days of dabbling with command lines in MS-DOS! So probably not much planning since this was always a passion of mine since I was in my teens.

A: What drives you on this journey in data?

M: Being able to work with our clients to run trainings for their staff presents many opportunities to help them solve their real-world data challenges. This keeps things challenging and there is never a dull moment when helping them to unlock the true value of data. Seeing the learners' faces light up with the "ah-hah!" moment when you teach them how to inspire action through data storytelling never gets old.

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A: What does a day at work look like to you?

M: Being the Asia Regional Head, I handle all things happening in Singapore and most parts of Asia, ranging from strategy planning, client meetings, sales, business development to even delivering the training itself. Being actively involved in shaping the trainings for clients means I'm with them throughout the entire journey and can ensure the trainings are tailored to the actual needs of our clients' learners. Time permitting, I'm sometimes also working on datasets from clients as I unravel their data stories so they can be incorporated into the trainings. So almost every day is different. There truly never is a dull moment!

A: In your opinion, what sets Tableau apart from other Data Visualisation software?

M: Tableau is an excellent visualisation and dashboarding software that is both user-friendly and easy to use. A lot of core visualisation and design principles are already built into Tableau and whether you are using it to explore your datasets or create dashboards, you can rest assured that you would have got it almost right without needing to tweak too many things. However, as with any tool, understanding the right visualisation principles is still key to creating useful and effective dashboards, e.g. how to ensure that considerations like the colour, layout and interactivity of the various visualisations are applied correctly to help your audience focus on the things that matter.

Fun fact:

Do you know Tableau has its own foundation? Aptly named "Tableau Foundation", it helps non-profit organisations with their data needs. Tableau Foundation seeks to focus on social issues such as "racial injustice, the homeless crisis, fighting hunger, and how they can help reverse climate change and many other ways to use their technology to create a better world"

Source: https://moneyinc.com/tableau/

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A: How has the industry changed in the last 5 years? How will you predict the industry in the next 5 years?

M: Over the past 5 years, I have seen a lot more automation built into the tools that we use. Data analysis is now a given. The focus has been on how to do it more efficiently and quickly. As such, many tools have near instant analyses of data built in as default functions (e.g. MS Excel and MS Power BI providing quick data exploration and suggested insights with the click of a button). Working with data is now the norm and rightly so, considering it is the lifeblood of any organisation.

Moving forward, I believe it will be crucial for companies to focus on building their pool of analytics translators. Communication between the business folks and data team has always been a challenge. The former tends to be more focused on the business bottom line while the latter is happier to stick to conversations about their models, statistics and other technical jargon. For a company to thrive, there needs to be good collaboration between these two groups of people and the analytics translator role is crucial to building that bridge.

A: How do you, or your team define success?

M: At StoryIQ, we focus on delivering the most instantly useful and engaging courses for our learners. Success to us is when our learners walk out of our trainings with a changed outlook of how to work with their data and are immediately able to create compelling data stories that inspire action.

"My advice is to never think of anything as a waste of time but learn from it and see how you can use it to move forward. In fact, this is almost like how you would work with data – it may not be very clear at the beginning what its value is. But as you apply more models to analyse your data, the true value of your data may be revealed"

- Martin Ng

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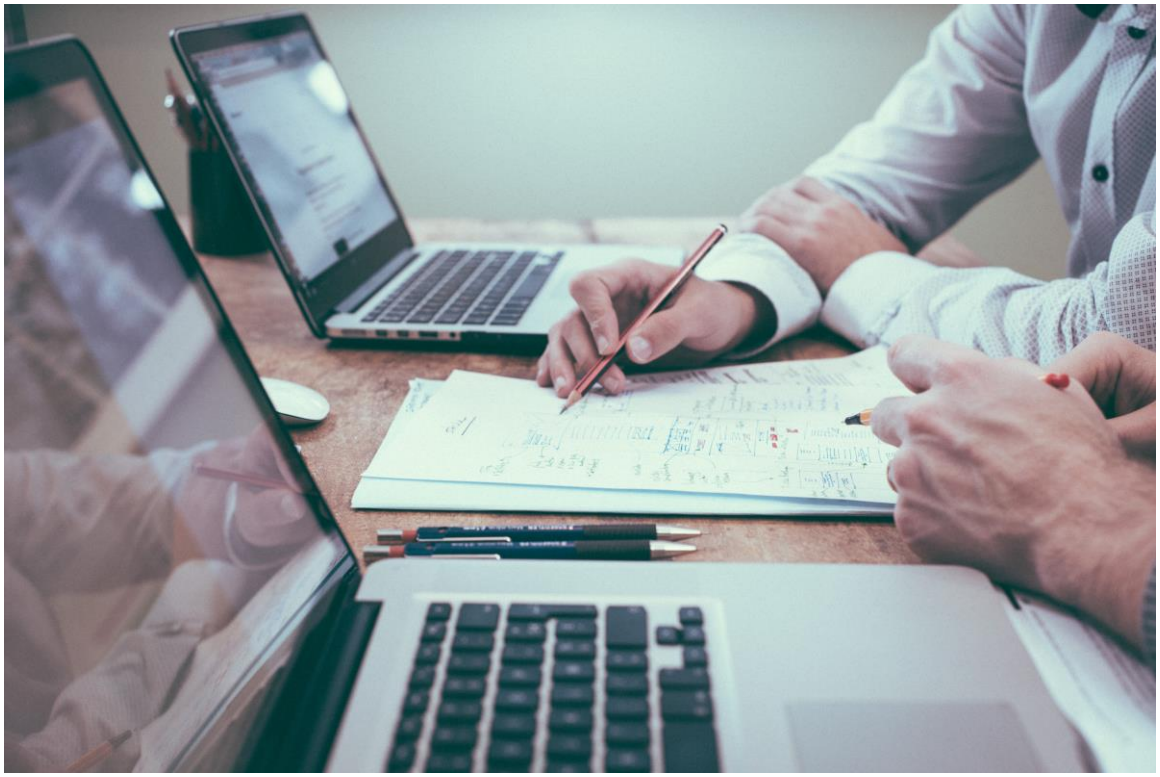
The data industry is one that is constantly evolving, and Data Visualisation packages are getting better with each new update released by the software developers. We hope that this BA newsletter has shed light on Data Visualisation, and sparked new conversations among your peers, paving the way to new learning and knowledge!



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Solution to Mini Python Challenge (March issue)

Given an integer array nums, return true if any value appears at least twice in the array, and return false if every element is distinct.

Example 1:

```
Input: nums = [1,2,3,1]
Output: true
```

Example 2:

```
Input: nums = [1,2,3,4]
Output: false
```

Example 3:

```
Input: nums = [1,1,1,3,3,4,3,2,4,2]
Output: true
```

Constraints:

- 1 <= nums.length <= 10^5
- -10^9 <= nums[i] <= 10^9

```
class Solution:
    def containsDuplicate(self, nums: List[int]) -> bool:

#Write your code here
```

The code solution is as follows:

```
class Solution(object):
    def containsDuplicate(self, nums):
        #this is to sort the numbers in asc order
        nums.sort()
        try:
            for i in range (len(nums)):
                if nums[i] != nums[i+1]:
                    pass
                else:
                    return True
        except IndexError:
            #in the case where the list only has one number
            return False
```

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Mini Python Challenge

Given an array nums containing n distinct numbers in the range [0, n], return the only number in the range that is missing from the array.

Example 1:

Input: nums = [3,0,1]
Output: 2
Explanation: n = 3 since there are 3 numbers, so all numbers are in the range [0,3]. 2 is the missing number in the range since it does not appear in nums.

Example 2:

Input: nums = [0,1]
Output: 2
Explanation: n = 2 since there are 2 numbers, so all numbers are in the range [0,2]. 2 is the missing number in the range since it does not appear in nums.

Example 3:

Input: nums = [9,6,4,2,3,5,7,0,1]
Output: 8
Explanation: n = 9 since there are 9 numbers, so all numbers are in the range [0,9]. 8 is the missing number in the range since it does not appear in nums.

Constraints:

n == nums.length
1 <= n <= 104
0 <= nums[i] <= n
All the numbers of nums are unique.

Look out for the answers in the next Issue!