INTERNATIONAL DEBT STATISTICS

HIGH LEVEL DESIGN (HLD)

PROJECT DETAILS

Project Title	**Analyze International Debt Statistics**
Technologies	**Business Intelligence**
Domain	**Finance**
Project Difficulties level	**Intermediate**
Tools used	**Jupyter Notebook, tableau,excel**

Team members :

1. PRASHANTH S
2. THARUN S
3. UDHAYA PRIYA S
4. SAIRAM G

DOCUMENT VERSION 1.0

LAST REVISION DATE 23.07.2022

CONTENTS:

1.ABSTRACT:

The debt of a country is an important factor in deciding the economic status of a country and it also helps in deciding whether the country is developed or not. Here we are going to analyze the debt of the each country from the data provided by the world bank

2.INTRODUCTION :

2.1 WHAT IS A HIGH LEVEL DOCUMENT ?

High level design document in short HLD is an overall system design . HLD describes the overall description or architecture of the application , this documents contains the necessary detail to the current project description and also helps for the suitable coding

High level design will

- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Give brief description on system,services,platform and relationship among the modules
- Describe the performance requirements
- Includes the system architecture and the data base design

3.GENERAL DESCRIPTION :

3.1 PROBLEM STATEMENT:

It's not that we humans only take debts to manage our necessities.

A country may also take debt to manage its economy. For example, infrastructure spending is one costly Ingredient required for a country's citizens to lead comfortable lives. The World Bank is the organization that provides debt to the countries. In this project, we are going to analyze international debt data collected by The World Bank. The dataset contains information about the amount of debt (in USD) owed by developing countries across several categories. We are going to find the answers to questions like

1. What is the total amount of debt that is owed by the countries listed in the dataset.

2. Which country owns the maximum amount of debt and what does that amount look like?

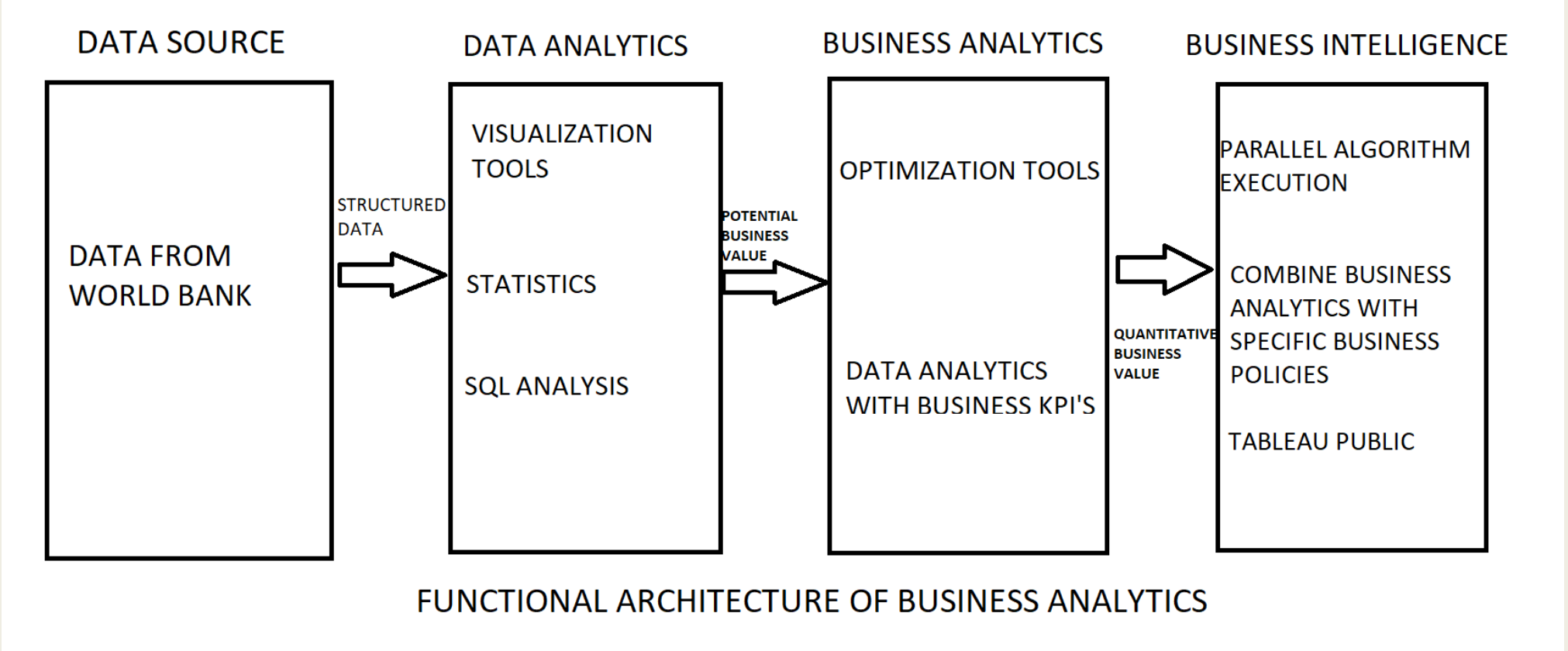
3. What is the average amount of debt owed by countries across different debt indicators?

4.TOOLS USED

We used the business intelligence tools and library works such as numpy , pandas , Excel , Tableau are used to build the whole framework

5.DESIGN DETAILS :

5.1FUNCTIONAL DETAILS:



FUNCTIONAL ARCHITECTURE OF BUSINESS ANALYTICS

5.2 OPTIMIZATION

- **Your data strategy enhances efficiency.**

Reduce the amount of records and fields as much as possible.

By materialising calculations, reducing duplicate data, and optimising extracts to speed up upcoming requests the usage of accelerated views and columns

In your opinion, fewer marks (data points) are acceptable.

- **Analytics that are guided**

There is no requirement to show everything you intend to in a single presentation view assemble relevant views, connect them with action filters, and move from overview at the speed of cognition, to very specific views.

Take unnecessary measurements off the detail shelf.

Investigate Aim to present your data in several views.

- Limit your filters by number and type:
- Reduce the amount of filters being used.
- Excessive filtering on a view will result in a more complicated query with a longer return time.
- Double-check your filters, and get rid of any that are unnecessary.
- Apply an include filter. While include filters only load a portion of a dimension's domain, exclude filters load the whole domain. Particularly for dimensions with lots of members, an include filter operates significantly more quickly than an exclude filter.
- Apply a continuous date filter. Continuous date filters (relative and range-of-date filters) are quicker than discrete date filters and can benefit from your database's indexing features.
- Apply Boolean or numerical filters. Integers and Booleans (t/f) are processed by computers far more quickly than strings.
- Employ action filters and parameters. These lighten the workload of queries and operate across data.

OPTIMIZE AND MATERIALIZE YOUR CALCULATIONS

- Reducing the number of nested calculations while still doing calculations in the database.
- Lessen the level of detail in the view's LOD or table calculations. The more specific the longer it takes to calculate.
- LODs - Take note of the number of distinct members used in the calculation.
- Table calculations will take longer to complete if there are more marks in the view.
- When possible, substitute MIN or MAX for AVG. AVG demands additional processing. unlike MIN or MAX. Rows are frequently duplicated and show the same outcome with AVG, MAX, or MIN
- Use calculations to create groups.
- In contrast to Tableau's group function, which loads the full domain, computed groups only load named members of the domain.
- Instead of using text computations, use Boolean or numeric calculations. Strings are slower for computers to process than integers and Booleans (t/f).Boolean>Int>Float>Date>DateTime>String

6.KEY PERFORMANCE INDICATORS:

Dashboards will be implemented to display and indicate certain KPIs and relevant indicators , dashboards will be included to display charts over time with progress on various indicators or factors

key indicators :

1. Worlds bank international debt data
2. Several different countries have debt with bank
3. Number of distinct debt indicators
4. Total amount of debt that owned by countries
5. Country that has highest debt with the world bank
6. Average amount of debt across indicators
7. Common debt indicator
8. Highest principle repayment amount
9. Other relevant debt problems and conclusions

7. DEPLOYEMENT

Tableau prioritizes choice in flexibility to fit, rather than dictate, your enterprise architecture. Tableau Server and Tableau Online leverage your existing technology investments and integrate into your IT infrastructure to provide a self-service, modern analytics platform for your users. With on-premises, cloud, and hosted options, there is a version of Tableau to match your requirements.

A Tableau workbook is made up of all the numerous worksheets that have been produced.

Each worksheet has a name that reflects the kind of chart visualisation used.

The Tableau programme connects to the Tableau Public Software using a user's personal email address and login information when we save all of the worksheets. The dashboard is published on a user's personal Tableau Public profile and is accessible to the general public.

THANK YOU.