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World Bank Loan Data Analysis

Using MySql

Introduction

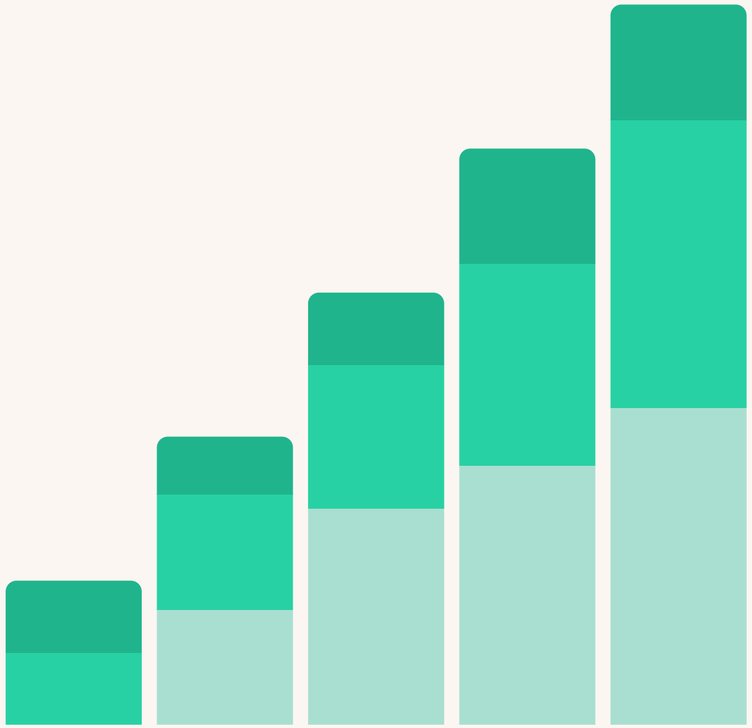
This report provides an in-depth analysis of loans provided by the World Bank to various countries, with a focus on India. By examining the loan data, we aim to understand the patterns of borrowing, repayment statuses, and the effectiveness of projects funded through these loans. This analysis will support better decision-making for future financial engagements.

Methodology used in the analysis

The dataset utilized for this project is sourced from The World Bank Group, encompassing over a million records and 30 columns. For the analysis, SQL (Structured Query Language) serves as the primary tool to extract insights from the data.

The dataset focuses on International Development Association (IDA) credits, which represent public and publicly guaranteed debt extended by the World Bank. IDA offers development credits, grants, and guarantees to its member countries at concessional rates to support their development needs. The values are expressed in U.S. dollars, and calculated using historical rates.

This dataset includes historical snapshots of the IDA Statement of Credits and Grants, providing a comprehensive view of the credits over time. The World Bank adheres to all applicable sanctions related to its transactions.
After reviewing the global data, the analysis will concentrate primarily on India.



SQL queries based on our analysis questions.

How many Countries have taken loans from the World Bank?

```
SELECT
    COUNT(DISTINCT `Country / Economy`)
FROM
    ida_statement;
```

	COUNT(DISTINCT `Country / Economy`)
▶	115

There are a total of 115 Countries That have taken the World Bank.

Top 5 Countries with the highest Loan amount.

```sql
SELECT
    `Country / Economy`,
    CONCAT('$',
            FORMAT(SUM(`Original Principal Amount`) / 1000000000,
                0),
            ' B') AS Total_Loan
FROM
    ida_statement
GROUP BY `Country / Economy`
ORDER BY SUM(`Original Principal Amount`) DESC
LIMIT 5;
```

Country / Economy	Total_Loan
India	$105 B
Bangladesh	$84 B
Pakistan	$66 B
Nigeria	$56 B
Ethiopia	$46 B

India is having the Highest Loan amount($105 B) then Bangladesh, Pakistan, Nogeria, Ethiopia

Top 5 Countries with the highest Due amount.

```sql
Select `Country / Economy`,
    CONCAT('$',
            ROUND(SUM(REPLACE(`Due to IDA`, ',', '') + 0) / 1000000000,
                    0),
            'B') AS `Due Loan Amount`
FROM
    ida_statement
GROUP BY `Country / Economy`
ORDER BY SUM(REPLACE(`Due to IDA`, ',', '') + 0) DESC
LIMIT 5;
```

Country / Economy	Due Loan Amount
Bangladesh	$41B
Pakistan	$36B
India	$32B
Nigeria	$32B
Ethiopia	$26B

Here India has ($32B) of the Due Loan

Top 5 Countries who have taken most loan amount in percentage.

```sql
SELECT
    `Country / Economy`,
    ROUND((SUM(`Original Principal Amount`) / (SELECT
                    SUM(`Original Principal Amount`)
                FROM
                    ida_statement) * 100),
            2) AS loan_percentage
FROM
    ida_statement
GROUP BY `Country / Economy`
ORDER BY loan_percentage DESC
LIMIT 5;
```

Country / Economy	loan_percentage
India	11.54
Bangladesh	9.19
Pakistan	7.23
Nigeria	6.14
Ethiopia	5.05

Here INDIA has taken about 11.54% of the total Loan

Project First Approved Loan for India.

```sql
SELECT
    `Project Name`,
    `Board Approval Date` AS `First Approved Date`
FROM
    ida_statement
WHERE
    `Country / Economy` = 'India'
        AND STR_TO_DATE(`Board Approval Date`, '%m/%d/%Y') = (SELECT
            MIN(STR_TO_DATE(`Board Approval Date`, '%m/%d/%Y'))
        FROM
            ida_statement
        WHERE
            `Country / Economy` = 'India')
LIMIT 1;
```

	Project Name	First Approved Date
▶	HIGHWAYS	6/20/1961

The First Loan which has been approved by World Bank to India was on 20-Jun-1961 which was for the Project named HIGHWAYS

Top 5 Projects in India having Highest Loan.

```sql
SELECT
    `Project Name`,
    CONCAT('$',
            ROUND(SUM(REPLACE(`Original Principal Amount`,
                        ',',
                        '') / 1000000000),
                    2) - ROUND(SUM(REPLACE(`Cancelled Amount`, ',', '') / 1000000000),
                    2),
            'B') AS `Total Loan Amount`
FROM
    ida_statement
WHERE
    `Country / Economy` = 'India'
GROUP BY `Project Name`
ORDER BY SUM(REPLACE(`Original Principal Amount`,
    ',',
    '') + 0) DESC
LIMIT 5;
```

Project Name	Total Loan Amount
IN: Elementary Education (SSA II)	$2.7B
IN: SSA III	$2.01B
IN: National Rural Livelihoods Project	$1.05B
IN: PMGSY Rural Roads Project	$1.79B
India COVID19 Response Social Protection	$1.1B

India has taken Highest Loan amount for Elementary Education($2.78 B) then PMGSY Rural Roads Project($1.79 B)

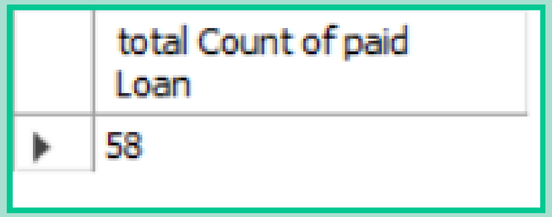
Top 5 Projects in India having the highest loan and the Due amount of those loans.

```sql
SELECT
    `Project Name`,
    CONCAT('$',
            ROUND(SUM(REPLACE(`Original Principal Amount`,
                        ',',
                        '') / 1000000000),
                    2) - ROUND(SUM(REPLACE(`Cancelled Amount`, ',', '') / 1000000000),
                    2),
            'B') AS `Total Loan Amount`,
    CONCAT('$',
            ROUND(SUM(REPLACE(`Due to IDA`, ',', '') / 1000000000),
                    2),
            'B') AS `Due Loan Amount`
FROM
    ida_statement
WHERE
    `Country / Economy` = 'India'
GROUP BY `Project Name`
ORDER BY SUM(REPLACE(`Original Principal Amount`,
    ',',
    '') + 0) - SUM(REPLACE(`Cancelled Amount`, ',', '') + 0) DESC
LIMIT 5;
```

	Project Name	Total Loan Amount	Due Loan Amount
▶	IN: Elementary Education (SSA II)	$2.7B	$1.22B
	IN: SSA III	$2.01B	$1.27B
	IN: PMGSY Rural Roads Project	$1.79B	$0.97B
	India COVID 19 Response Social Protection	$1.1B	$1.08B
	IN: National Rural Livelihoods Project	$1.05B	$0.48B

Total number of loan projects that have fully repaid the loan.

```sql
WITH CTE AS (
    SELECT
        `Project Name`,
        CONCAT('$', ROUND(SUM(REPLACE(`Original Principal Amount`, ',', '') / 1000000000), 2) -
               ROUND(SUM(REPLACE(`Cancelled Amount`, ',', '') / 1000000000), 2),
               'B') AS `Total Loan Amount`
    FROM
        ida_statement
    WHERE
        `Country / Economy` = 'India'
        AND `Credit Status` IN ('Fully Repaid')
    GROUP BY
        `Project Name`
    ORDER BY
        SUM(REPLACE(`Original Principal Amount`, ',', '') + 0) -
        SUM(REPLACE(`Cancelled Amount`, ',', '') + 0) DESC
)
SELECT
    COUNT(*) AS `total Count of paid Loan`
FROM
    CTE;
```



	total Count of paid Loan
▶	58

So, there are a total of 58 projects for which India has taken the loan and fully repaid those loans.

Top 5 Maximum approval time in a project for India.

```sql
SELECT DISTINCT
    `Project Name`,
    ROUND(DATEDIFF(STR_TO_DATE(`Closed Date`, '%m/%d/%Y'),
                   STR_TO_DATE(`Board Approval Date`, '%m/%d/%Y')) / 365.25,
          0) AS `Loan Process Time (years)`
FROM
    ida_statement
WHERE
    `Country / Economy` = 'India'
        AND `Closed Date` IS NOT NULL
        AND `Board Approval Date` IS NOT NULL
ORDER BY `Loan Process Time (years)` DESC;
```

Project Name	Loan Process Tim
UPPER INDRAVATI POWE	12
IN: National Ganga River Basin Project	11
IN: RAJ WSRP	11
IN: Vocational Training	11
MAHARASHTRA IRRIG. I	11
NATIONAL AGRIC. RES.	11
TAMIL NADU WATER SUP	11
AGR.CR. DAIRY I	10
BODHGHAT - HYDRO	10
BOMBAY III WATER SUP	10
BOMBAY URBAN DEVELOP	10
EDUCATION AGRIC.UNIV	10
GUJARAT MEDIUM II	10
ICDS II (BIHAR & MP)	10
IN: Assam Agric Competitiveness	10
IN: Dam Rehabilitation & Improvement	10
IN: ICDS Syst Strength & Nut Imp Prog	10
IN: Integrated Coastal Zone Mgmt Project	10
IN: KARN Tank Mgmt	10
IN: Karnataka Health System Dev	10
IN: Mid-Himalayan (HP) Watersheds	10
IN: UP WSRP	10
Jhelum and Tawi Flood Recovery Proj	10

UPPER INDRAVATI POWE was the Project for which the Processing time is the longest having approx 12 years.

Top 5 Minimum approval time in project for India.

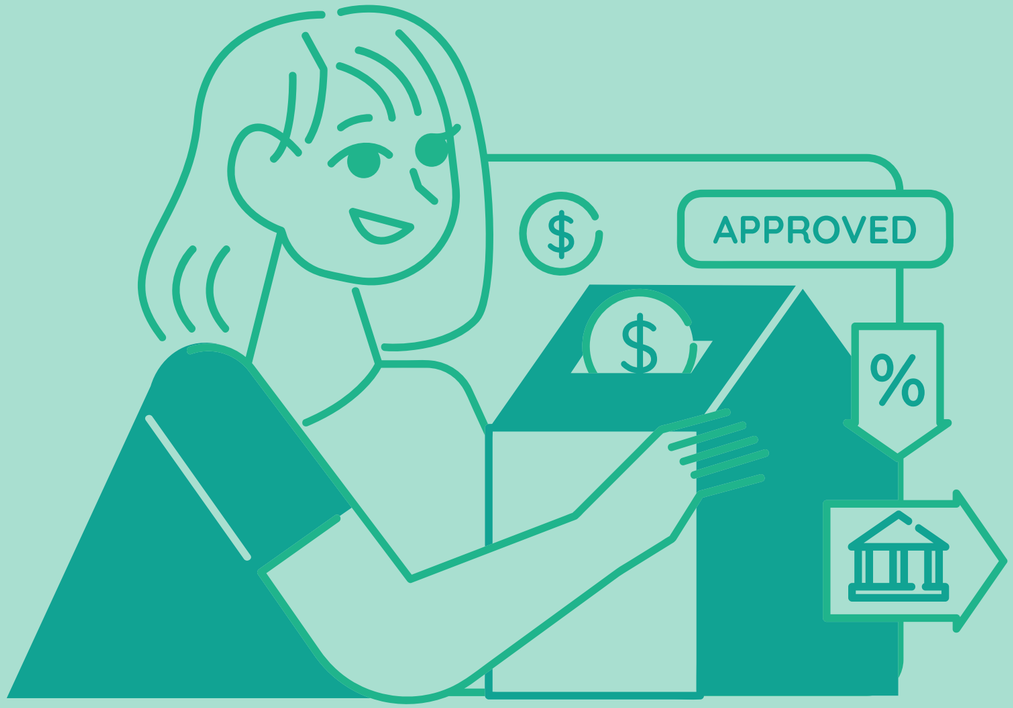
```sql
SELECT
    `Project Name`,
    DATEDIFF(STR_TO_DATE(`Closed Date`, '%m/%d/%Y'),
            STR_TO_DATE(`Board Approval Date`, '%m/%d/%Y')) AS `Approval Time (Days)`
FROM
    `world_bank_analysis`.`ida_statement`
WHERE
    `Country / Economy` = 'India'
ORDER BY `Approval Time (Days)` ASC
LIMIT 5;
```

Project Name	Approval Time (Days)
IN: MIZORAM ROADS	71
IN: MIZORAM ROADS	71
First Low-Carbon Energy Programmatic DPL	185
First Low-Carbon Energy Programmatic DPL	185
AP SAL II	187

MOZORAM ROADS Project has been the project that has been quickest in approval which was 71 days.

Conclusion

This analysis of World Bank loans to India reveals significant patterns in borrowing, repayment, and project timelines. Understanding these factors can enhance the effectiveness of future financial engagements with the World Bank and improve project outcomes.



Thank you very much!