

DATA-DRIVEN SOLUTION FOR SDG 9: INDUSTRY, INNOVATION, AND INFRASTRUCTURE

**Addressing Infrastructure Investment, Innovation, and
Internet Access Disparities in Africa**



Overview

This project aims to tackle critical issues in infrastructure investment, technological innovation, and internet access in East and Central Africa using a comprehensive data-driven solution.

alignment

This project aligns with SDG 9 by focusing on:

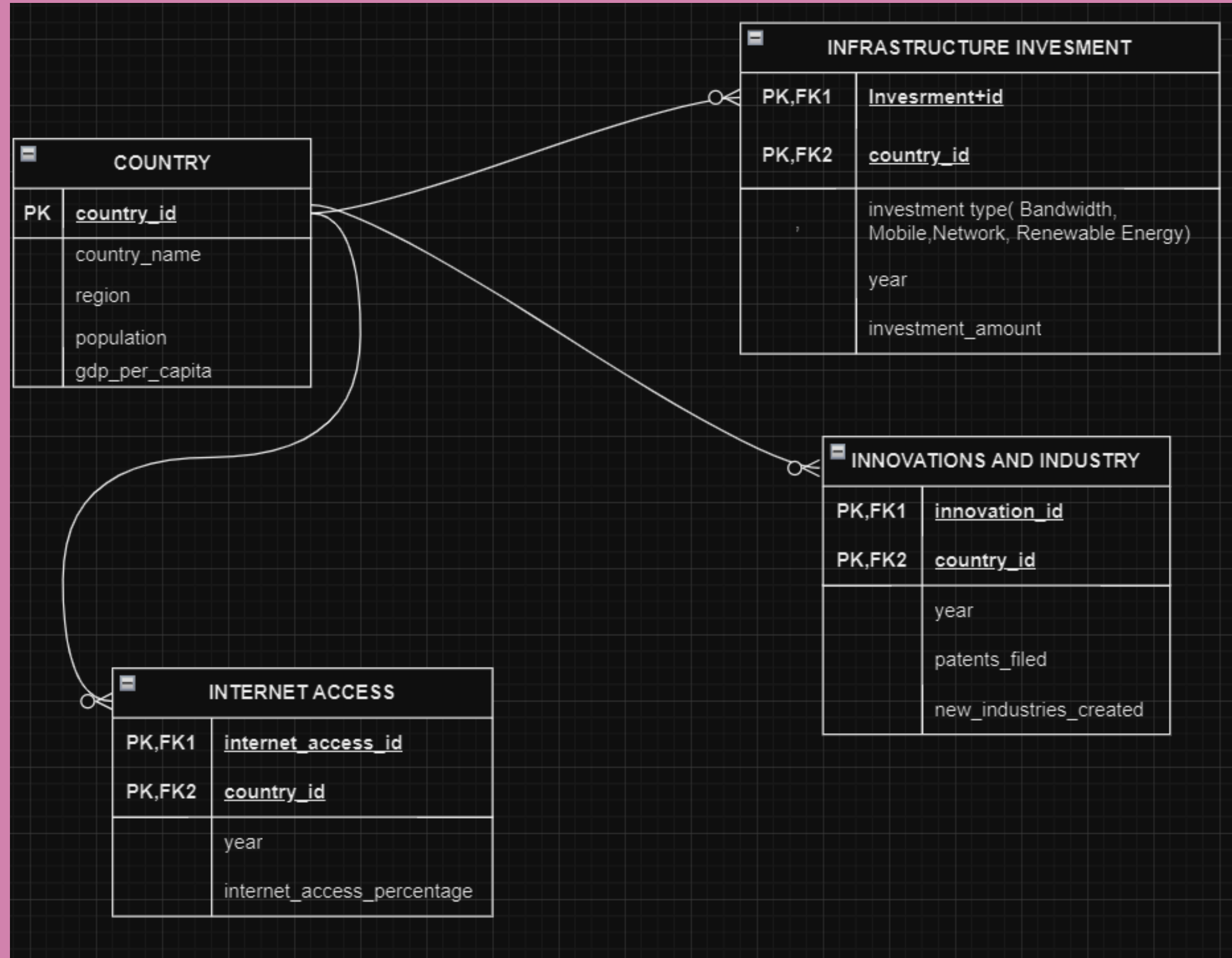
- Industry: Promoting sustainable industries and infrastructure.
- Innovation: Fostering technological progress and new industries.
- Infrastructure: Investing in critical infrastructure such as transport and renewable energy.
- Internet Access: Bridging the digital divide to ensure equal access to information.

problem statement

In many African countries, especially in East and Central Africa, there are significant disparities in infrastructure investment, technological innovation, and internet access. These disparities affect economic growth and development and exacerbate the digital divide, which limits access to information and opportunities for innovation and entrepreneurship. With over 4 billion people globally lacking internet access, predominantly in developing regions, bridging this digital divide and improving infrastructure are crucial for sustainable development



Entity Relational diagram for the SDG project





Sample Data

East Africa

Infrastructure Investment: Example records for Kenya, Uganda, Tanzania, Sudan, Ethiopia, Rwanda, Burundi.

Innovation and Industry: Example records for the same countries.

Internet Access: Example records for the same countries.

Central Africa

Infrastructure Investment: Example records for Cameroon, Congo, Gabon, Central African Republic, Chad, DRC.

Innovation and Industry: Example records for the same countries.

Internet Access: Example records for the same countries.

Data Retrieval and Analysis Queries

Average Internet Access by Region

```
SELECT c.region, AVG(ia.internet_access_percentage) AS avg_internet_access_percentage
FROM Country c
LEFT JOIN Internet_Access ia ON c.country_id = ia.country_id
GROUP BY c.region
ORDER BY avg_internet_access_percentage DESC;
```

Total Investment by Region

```
SELECT c.region, SUM(ii.investment_amount) AS total_investment
FROM Country c
LEFT JOIN Infrastructure_Investment ii ON c.country_id = ii.country_id
GROUP BY c.region
ORDER BY total_investment DESC;
```

Total Patents Filed by Region

```
SELECT c.region, SUM(ii.patents_filed) AS total_patents_filed
FROM Country c
LEFT JOIN Innovation_and_Industry ii ON c.country_id = ii.country_id
GROUP BY c.region
ORDER BY total_patents_filed DESC;
```

Infrastructure Investment Trends:

Highest Investment: Identify regions, like Southern Africa or East Africa, with the highest infrastructure investment amounts, particularly in broadband, mobile networks, and renewable energy.

Lowest Investment: Highlight regions with lower investment levels, showing areas that may need more attention and resources.

Innovation Metrics:

Most Patents Filed: Show regions like East Africa or Southern Africa with significant patent filings, indicating strong innovation activity.

New Industries Created: Highlight regions that have seen the creation of new industries, showcasing areas of growth and industrial development.

Internet Access Disparities:

Highest Internet Access: East Africa internet access percentages are higher, reflecting better connectivity.

Lowest Internet Access: Northern Africa has lower percentage of internet connectivity

SDG 9: Industry, Innovation, and Infrastructure

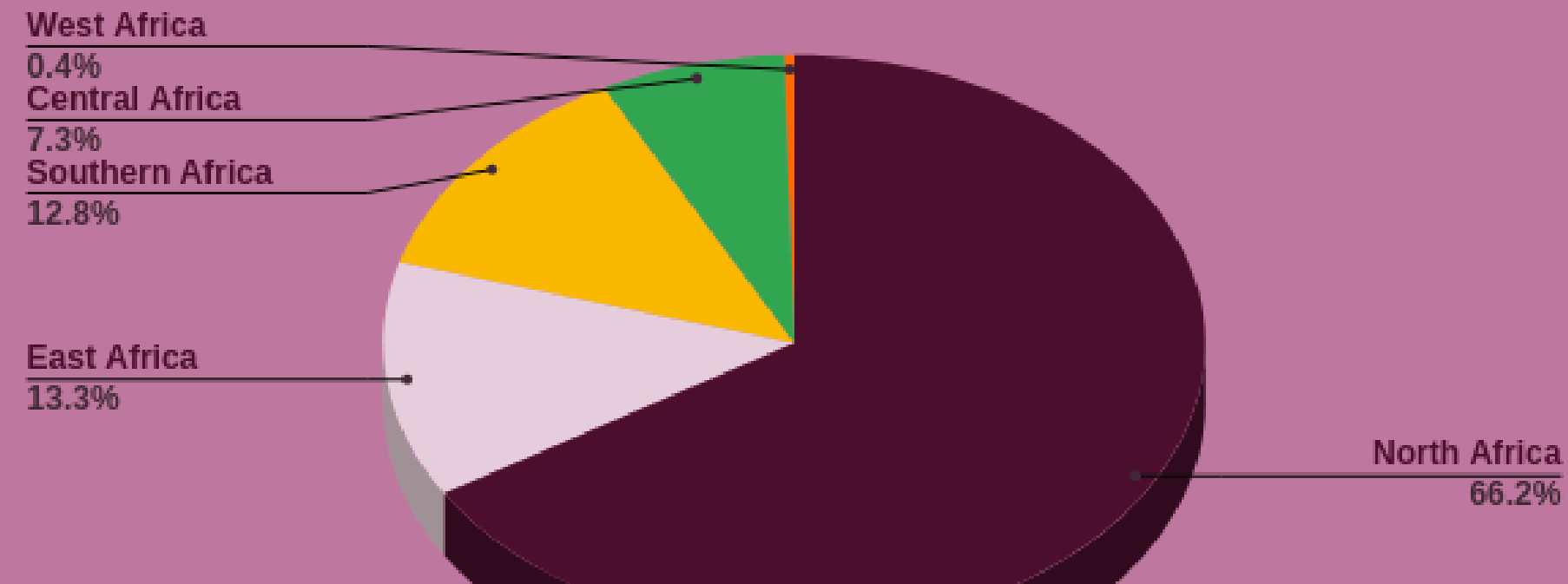
total_new_industries

region All

total_patents_filed All

investment_amount All

total_patents_filed



[dashboard](#)

[Total Patents Filed by Region](#)

[Total New Industries Created by Region](#)

[Total Investment by Region](#)

[Total Internet Access Percentage by Region](#)

[Investment by Country](#)

[Internet Access by Country](#)

How the Project Addresses the SDG Problem

Informed Decision-Making

The project offers data-driven insights that can guide targeted investments and policy-making, ensuring resources are allocated efficiently.

Resource Allocation

Helps prioritize funding and efforts in regions where the need is greatest, such as areas with low infrastructure investment or poor internet access.

Tracking Progress

Provides a tool to monitor progress towards SDG targets, particularly in reducing the digital divide and enhancing infrastructure and innovation across Africa.

Project Recap

The project addresses critical aspects of infrastructure investment, innovation, and internet access in Africa, aligning with the Sustainable Development Goal (SDG) of fostering sustainable industrialization and innovation.

The analysis highlights significant disparities across different regions, identifying all areas of strength and regions needing further support.