Digital Portfolio

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COVID - 19
Data Analysis

AGENDA

1.Problem Statement
2.Project Overview
3.End Users
4.Tools and Technologies
5.Portfolio designandLayout
6.Features and Functionality
7.Results and Screenshots
8.Conclusion
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PROBLEM STATEMENT

Collect and preprocessCOVID-19 data from reliablesources- Perform statistical analysisanddata visualization using tools like Python, Pandas, and Matplotlib- Identify top affected countries, districts, and demographics- Analyze transmission rates, recovery rates, and death rates- Predict future trends and saturation points using forecasting models- Visualize findings using interactive dashboards and reports

Tools and Technologies:- *Python:* Programming language for data analysis and visualization- *Pandas:* Library for data manipulation and analysis- *Matplotlib:* Library for data visualization- *Power BI:* Business intelligence tool for data visualization and reporting- *Hadoop:* Big data analytics tool for processing large datasets- *Hive:* Data warehousing tool for querying and analyzing data

PROJECT OVERVIEW

Expected Outcomes:-

• Insights into COVID-19Trends: Identify keytrends andpatternsinthe pandemic's progression-

• Data-Driven Decision-Making: provide insights and recommendations for policymakers and healthcare professionals-

- ***improved Healthcare Response:Inform healthcare response and resource allocation-***
- ***Predictive Modeling: Predict future trends and saturation points to facilitate proactive decision-making***

WHO ARE THE END USERS?

Primary End Users:

1.*Policymakers:* Government officials, health ministers, and other decision-makers who need data-driven insights to inform policy decisions.

2. *Healthcare Professionals:* Doctors, nurses, epidemiologists, and other healthcare workers who need accurate and timely data to provide effective care.

2.

3. *Public Health Officials:* Professionals responsible for tracking and controlling the spread of COVID-19, including epidemiologists and health department officials.

3.

TOOLS AND TECHNIQUES

WHO Mortality Database*: An annual compilation of mortality data by age, sex, and cause of death by country.- *World Health Survey Plus (WHS+)*: A multi-topic survey system for informed decision-making.- *Civil Registration and Vital Statistics (CRVS)*: Records births, deaths, and cause of death information.- *COVID-19 Question Bank*: A repository of survey questions used worldwide to collect COVID-19 data.- *DHIS2-based entomology and vector control tools*: For collecting and analyzing entomological data.Data Analysis and Visualization Tools- *Python libraries*: Pandas for data manipulation, Matplotlib and Plotly Express for visualization.- *Tableau and Microsoft Power BI*: Business intelligence tools for interactive dashboards.- *Flask and Folium*: For building web applications and geospatial visualizations.- *R programming language*: For statistical modeling and data visualization with ggplot2.

POTFOLIO DESIGN AND LAYOUT

CaseStudies-
COVID-19 Spread Analysis: Analysis of COVID-19 spread, including data visualization and i ns igh t s.
Predictive Modeling: Experience with predictive modeling, including forecasting COVID-19 trends.
Geospatial Analysis: Analysis of COVID-19 data by geographic location.

Technical Skills

Programming Languages: Python, R, SQl.
Data Analysis Tool: Pandas, Matplotlib, Plotly, Tableau, Power.
Data Sources: WHO, CDC, government datasets.

Project Showcase- *Project Overview*: Concise description of each project, including objectives, methodologies, and key findings- *Visualizations*: Interactive dashboards, maps, charts, and graphs demonstrating data visualization skills- *Insights and Recommendations*: Key insights and recommendations derived from analysis

FEATURES AND FUNCTIONALITY

Insightsand Recommendations-
Identifying Trends:Identifying trends andpatternsinCOVID-19 d ata.
Informing Decision-Making: Providing insights to inform decision-making and policy developmen.
Recommendations: Offering recommendations for public health interventions and resource allocationKey Features.
Data Integration: Integrating data from multiple sources.
Data Cleaning: Cleaning and preprocessing data for analysis
Model Development: Developing predictive models to forecast COVID-19 trends.
Collaboration: Collaborating with stakeholders to inform decision-making

RESULTS AND SCREENSHOTS

•COVID-19 data analysis screenshots showcase various visualizations used to understand the pandemic's impact. Hereare some examples:- *Line Charts*: Global confirmed cases over time, helping track the pandemic'sprogression- *Bar Graphs*: Comparison of COVID-19 cases between countries, highlighting those with the highest numbers- *Pie Charts*: Distribution of total cases, recoveries, and deaths worldwide, providing insights into the pandemic's overall impact

CONCLUSION

COVID-19 Data AnalysisCOVID-19 data analysis has been instrumental in understanding the pandemic's impact, tracking its spread, and informing public health decisions. Through data visualization and statistical modeling, researchers and policymakers have gained valuable insights into the pandemic's d y na mic s.