COVID-19 IN INDIA DASHBOARD ANALYSIS USING TABLEAU

A Micro Project Report

Submitted by

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Bonafide record of the work done by GANGULA SIVASANKARAVARAPRASAD - 99220040264 in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Specialization of the Computer Science and Engineering, during the Academic Year Even Semester (2023-24)

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Abstract

The global challenge posed by the Covid -19 pandemic has prompted nations, including India, to implement innovative strategies for monitoring and respondingto this unprecedented public health crisis. In response, a comprehensive dashboard analysis has been developed to consolidate critical data from across the country. The dashboard's initial focus on a geographically visualized map, depicting total deaths by state, provides a quick and insightful assessment of the pandemic's impact. It also sheds light on demographic nuances, revealing the disproportionate impact on the 20 -29 and 30 -39 age groups. Additionally, the dashboard addresses testing infrastructure by showcasing the number of ICMR testing labs in various states, emphasizing the importance of early detection and containment efforts.

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Chapter 1

Introduction

1.1 Background

The Covid-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has had a profound impact globally since its emergence. With its rapid spread, nations worldwide have faced unprecedented challenges in containing and managing the outbreak. India, as one of the most populous countries, has been significantly affected by the virus, prompting the need for a robust and data-driven approach to understand, monitor, and respond to the evolving situation.

1.2 Objective of the dash board

The primary objective of the Covid-19 dashboard for India is to establish a centralized and accessible platform that offers real-time insights into the evolving dynamics of the pandemic. This dashboard aims to provide a comprehensive overview of key metrics, including confirmed cases, recoveries, deaths, vaccination progress, demographic distribution, and testing details. By collating and presenting this information in an intuitive and visually engaging manner, the dashboard facilitates data-driven decision-making for various stakeholders, including government authorities, healthcare professionals, researchers, and the general public.

1.2.1 Purpose

- It acts as an information hub, providing real-time updates on key pandemic metrics such as confirmed cases and vaccinations, fostering transparency and awareness
- The dashboard assists policymakers and healthcare professionals by offering data-driven insights for strategic decision-making and resource allocation.

1.2.2 Scope

Figure 1.1: Dashboard of Covid-19

The Covid-19 dashboard's scope encompasses a comprehensive coverage of key pandemic metrics, including confirmed cases, recoveries, deaths, vaccination progress, demographic distribution, and testing details. It extends its reach to different states, facilitating a detailed regional analysis to capture variations in the virus spread and response strategies. Ensuring user accessibility for diverse stakeholders, the dashboard features a user-friendly interface and intuitive visualizations to promote widespread understanding. With a commitment to real-time updates, it dynamically presents the latest data to maintain accuracy and relevance, aiding prompt decision-making. Furthermore, the dashboard's scope extends beyond the immediate crisis, contributing insights for future preparedness and ongoing research in public health.

Chapter 2

Covid-19 situation in India

2.1 Overview of covid-19 cases

The overview of Covid-19 cases provides a snapshot of the pandemic's impact, encompassing confirmed cases, recoveries, and deaths. This section delves into the overall trends, highlighting the scale and progression of the virus across India. By offering a comprehensive picture of the current state of the pandemic, this segment serves as the foundation for subsequent analyses and insights into the dynamics of the outbreak. The data presented here forms the basis for understanding the magnitude of the challenge and guides further exploration into regional variations, demographic patterns, and the effectiveness of public health interventions.

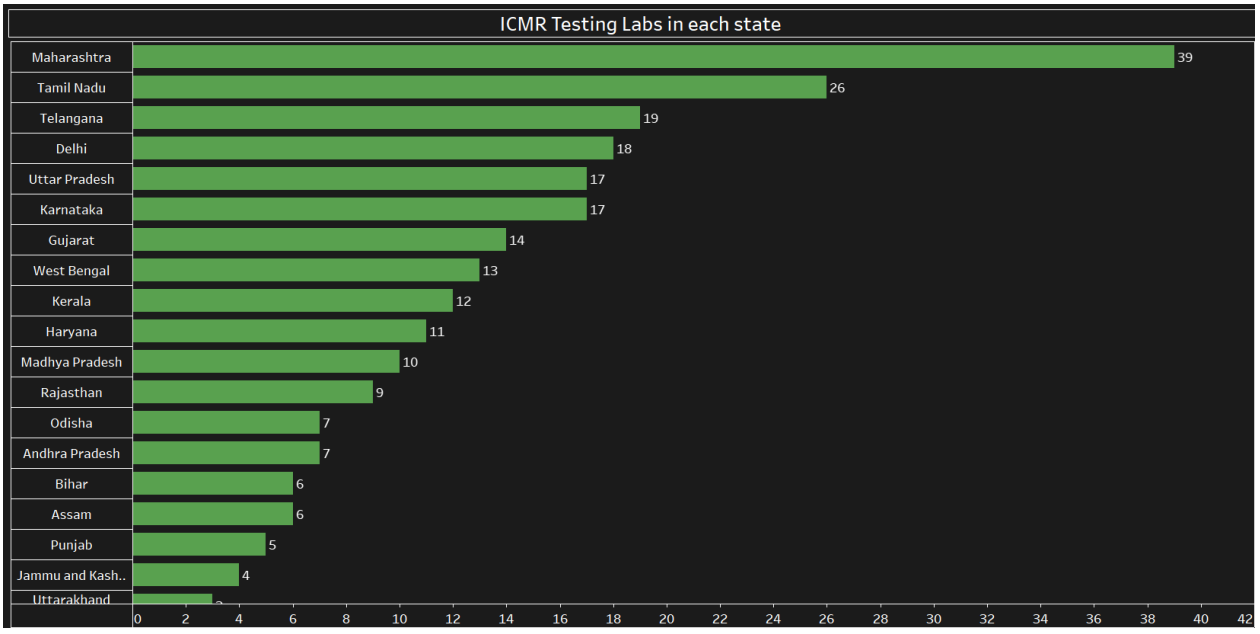

Figure 2.1: ICMR Testing Labs in each State

2.1.1 Confirmed Cases, Recoveries, and Deaths

Examining the landscape of confirmed Covid-19 cases, recoveries, and deaths provides a nuanced understanding of the pandemic's trajectory in India. The confirmed cases highlight the scale of infections, while the recoveries indicate the resilience of healthcare efforts. Simultaneously, analyzing the mortality figures sheds light on the severity and impact of the virus. This section offers a detailed exploration of these key metrics, uncovering patterns and trends crucial for informed decision-making. By delving into the nuances of each category, it aims to contribute insights into the effectiveness of containment measures, healthcare infrastructure, and the overall resilience of the nation in the face of the ongoing health crisis.

2.1.2 State-wise Breakdown

A state-wise breakdown of Covid-19 cases delves into the regional impact, providing insights into the uneven distribution of the virus across India. This analysis offers a detailed examination of confirmed cases, recoveries, and deaths in each state, facilitating a nuanced understanding of the varying challenges and successes in different geographical areas. By highlighting disparities, this section aims to inform targeted interventions, resource allocation, and strategic planning at the regional level. The state-wise breakdown serves as a critical component for tailoring public health responses, ensuring a more precise and effective approach to managing the pandemic across diverse states and territories.

2.2 Demographic Analysis

- Analyzing Covid-19 cases across age groups provides insights into vulnerability and informs targeted strategies for specific demographics, such as the elderly or younger populations.
- Examining the distribution of cases by gender helps identify any gender-specific patterns, allowing for a more nuanced understanding of the virus's impact on different segments of the population.
- The demographic analysis contributes to the development of strategic interventions, enabling tailored public health measures, vaccination prioritization, and resources allocation based on the unique characteristics of various demographic groups.

2.2.1 Age Group Distribution

Examining the age group distribution of Covid-19 cases reveals nuanced patterns in susceptibility and severity. The data highlights the varying impact of the virus across different age brackets, ranging from adolescents to the elderly. Understanding the distribution assists in identifying age-specific vulnerabilities and tailoring public health measures accordingly. This analysis is crucial for prioritizing vaccination efforts, implementing targeted interventions for at-risk age groups, and allocating resources efficiently. By dissecting the age-related dynamics of the pandemic, this section contributes essential insights for developing age-specific strategies aimed at mitigating the impact of Covid-19 on diverse age demographics.

2.2.2 Gender Distribution

An exploration of gender distribution in Covid-19 cases provides valuable insights into how the virus affects different segments of the population. Analyzing the prevalence among males and females helps identify any gender-specific patterns, contributing to a more nuanced understanding of transmission dynamics. This section aims to uncover potential disparities in infection rates, severity, and outcomes, guiding targeted public health interventions. Understanding gender distribution assists in tailoring communication strategies, vaccination campaigns, and healthcare resources to address the unique needs of both genders. By delving into gender-specific impacts, this analysis enhances the overall effectiveness of public health responses to the pandemic.

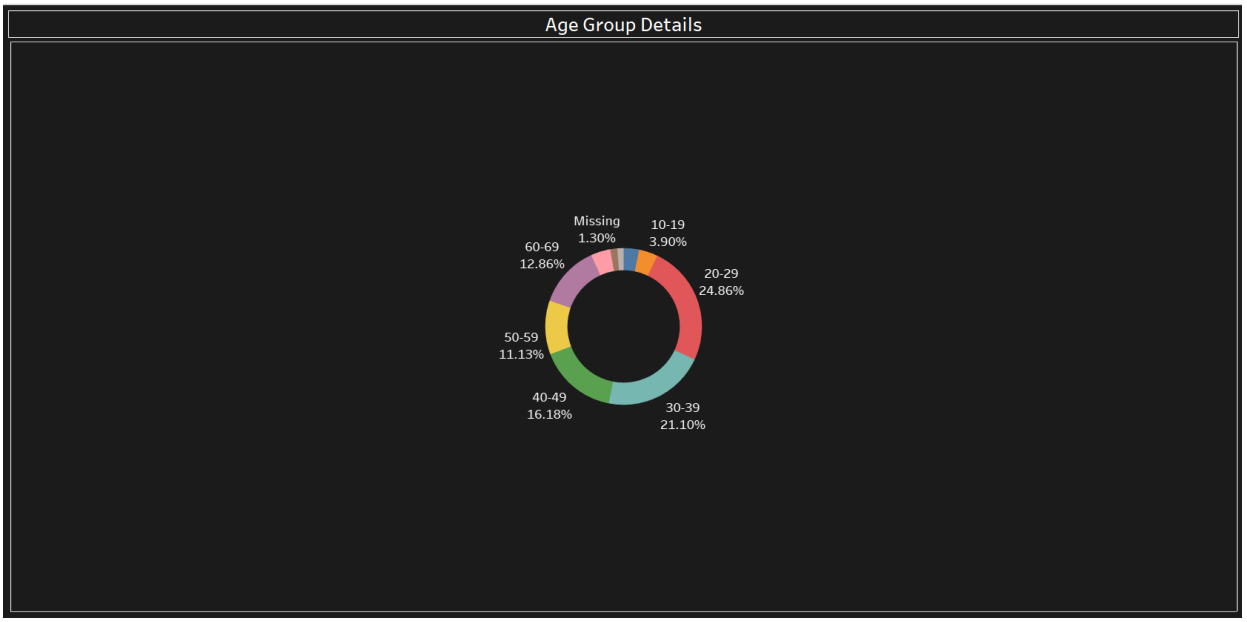

Figure 2.2: Age Group Details

2.3 Vaccination Details

The vaccination details section focuses on providing a comprehensive overview of the Covid-19 vaccination efforts in India. It includes critical information such as the total number of doses administered, the breakdown between first and second doses, and a detailed analysis of the vaccines used, including Covishield, Covaxin, and Sputnik V. This segment aims to highlight the progress, coverage, and distribution of vaccinations across the population, contributing crucial insights for assessing the effectiveness of the immunization campaign. The data presented in this section serves as a foundation for evaluating the impact of vaccination on mitigating the spread of the virus, reducing severe cases, and guiding future vaccination strategies.

2.3.1 Doses Administered

This section provides a detailed account of the Covid-19 vaccine administration, focusing on the total number of doses given. It encompasses both the first and second doses, offering insights into the scale and progress of the vaccination campaign across India. By analyzing the cumulative number of doses administered, this segment aims to assess the coverage and effectiveness of the immunization efforts. The data presented here forms a crucial foundation for evaluating the nation's vaccination strategy, identifying areas of success, and pinpointing regions that may require increased focus to ensure widespread protection against the virus.

Chapter 3

Testing and Analysis

3.1 State-wise Testing Details

This section delves into the state-wise testing details, providing a comprehensive analysis of Covid-19 testing activities across different regions in India. It includes a breakdown of positive and negative cases, along with total samples tested in each state. By presenting this information,the analysis aims to shed light on testing efficiency, regional variations in infection rates, and the overall testing strategy implemented. The data presented here plays a critical role in understanding the extent of testing coverage, identifying potential hotspots

3.1.1 State-wise Testing Details: Overall States

This section provides a comprehensive overview of Covid-19 testing details acrossvarious states in India. It includes a breakdown of positive and negative cases, along with the total samples tested in each state. The analysis sheds light on testing efficiency, regional variations in infection rates, and the overall testing strategy implemented nationwide. This data is instrumental in understanding the extent oftesting coverage, identifying potential hotspots, and guiding targeted public health measures to curb the spread of the virus at the state level.

3.1.2 Comparison of Covid-19 Cases

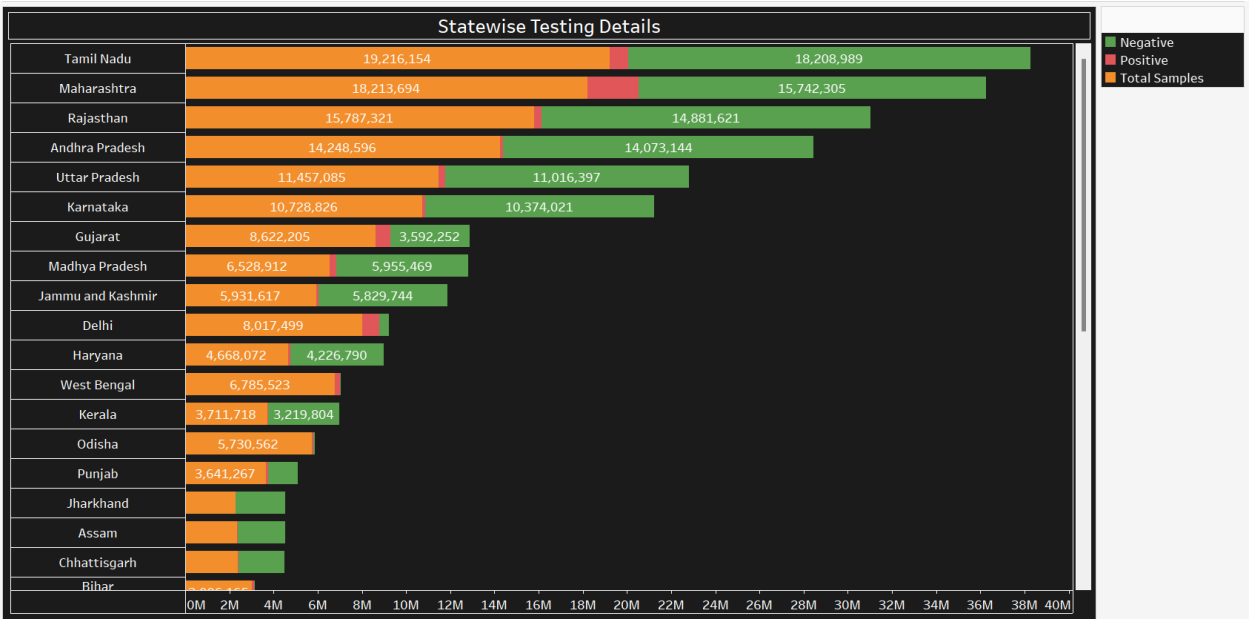

Figure 3.1: Statewise Testing Details

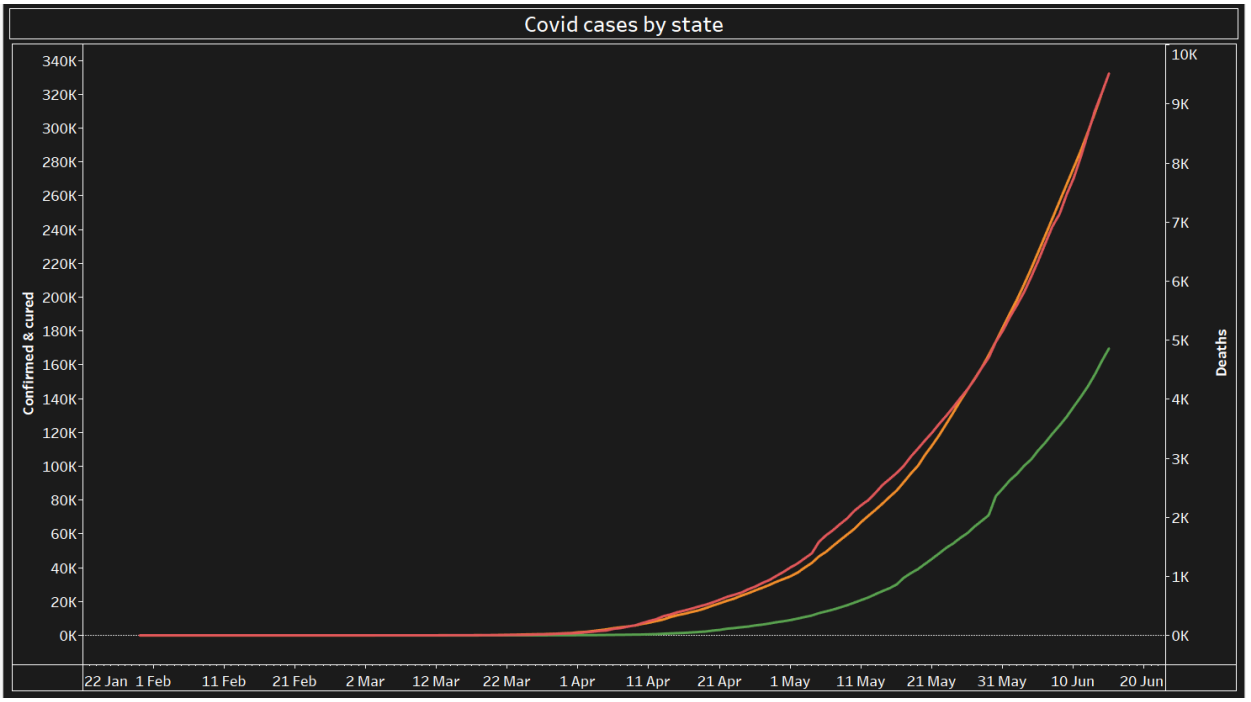

Figure 3.2: Covid cases by State

3.2 ICMR Testing Labs: Overall States

This section details the distribution of Indian Council of Medical Research (ICMR) testing laboratories across various states, including Bihar, Assam, Punjab, and Jammu and Kashmir. It highlights the number of testing labs established in each state, emphasizing the regional capacity for conducting Covid-19 tests. This information is crucial for assessing the infrastructure and resources dedicated to testing, ensuring a widespread and effective approach to diagnostics. Understanding the distribution of ICMR testing labs contributes to evaluating the overall testing capabilities and readiness of states in responding to the ongoing Covid-19 pandemic.

Chapter 4

Conclusion and Future work

4.1 Summary of Findings

This section succinctly encapsulates the major discoveries and insights extracted from the comprehensive analysis presented in the report. It serves as a condensed reference, highlighting significant trends, patterns, and implications observed in the Covid-19 data. The summary of findings aims to distill complex information into key takeaways, providing a quick and accessible overview for stakeholders to grasp the salient points of the dashboard's analysis.

4.2 Implications for Public Health

This section delves into the practical implications drawn from the data analysis for public health strategies. It outlines actionable insights and recommendations based on the observed trends, emphasizing their significance in shaping effective public health responses. By translating the findings into tangible implications, this section aims to guide policymakers, healthcare professionals, and relevant authorities in implementing targeted interventions, resource allocation, and preventive measures to mitigate the impact of Covid-19 on public health in India.

Chapter 5

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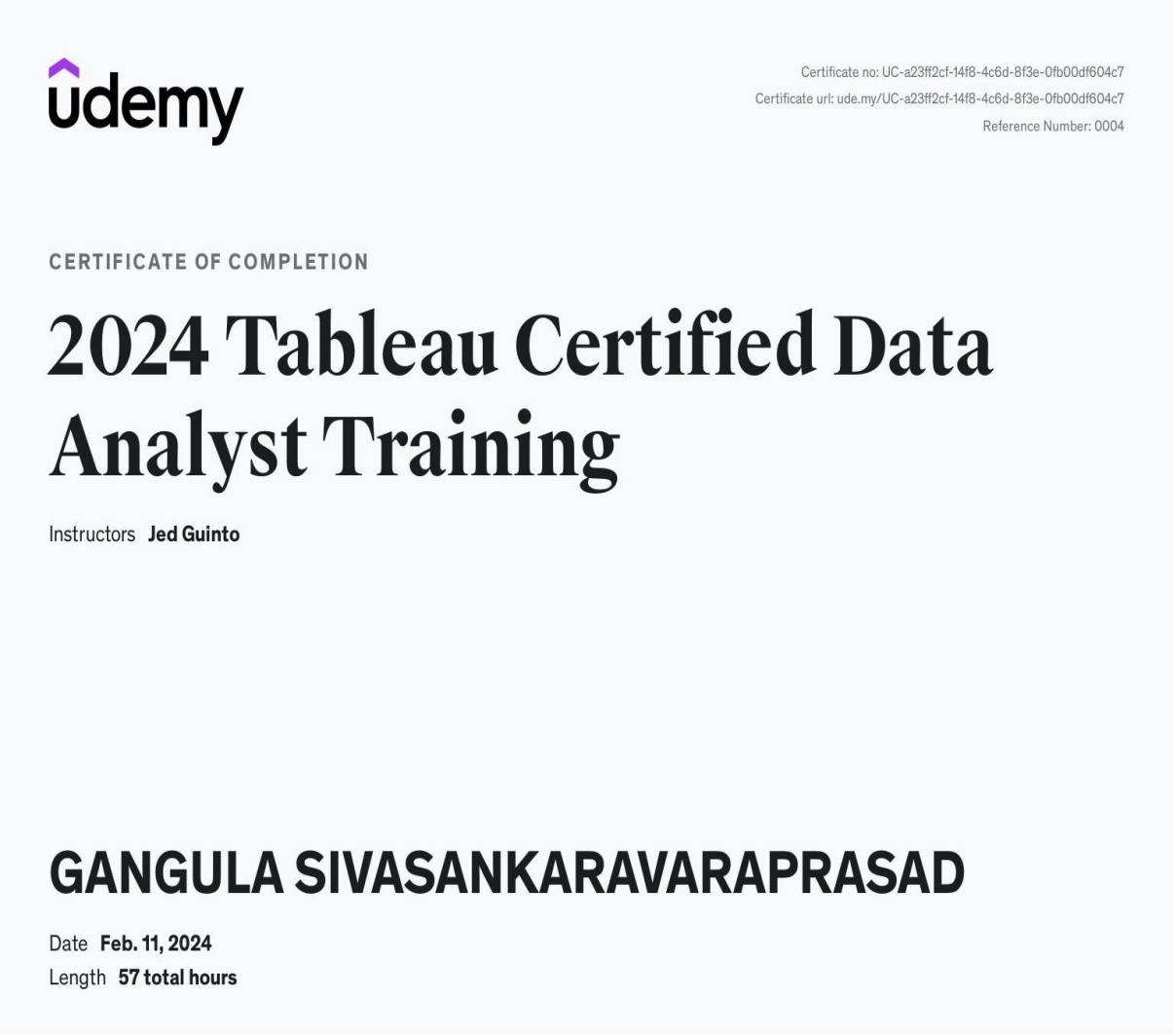
Chapter 6

Certification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Reference Number: 0004

CERTIFICATE OF COMPLETION

2024 Tableau Certified Data Analyst Training

Instructors **Jed Guinto**

GANGULA SIVASANKARAVARAPRASAD

Date **Feb. 11, 2024**
Length **57 total hours**

Figure 6.1: Certification details