

**THE STUDY OF COVID-19  
CASES FOR 2020 AND 2023 IN MALAYSIA**

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**Final Year Project Report Submitted  
in Partial Fulfilment of the Requirements for the  
Diploma in Geospatial Technology  
in the College of Built  
Environment Universiti  
Teknologi MARA**

**JULY 2024**

## **ABSTRACT**

### **The Study of Covid-19 Cases for 2020 and 2023 in Malaysia**

The 2019-20 coronavirus pandemic, ongoing and known as Covid-19, is caused by the severe acute respiratory syndrome coronavirus, called SARS-CoV-2. An ongoing outbreak is the result of the disease's rapid global expansion. Geographic Information System (GIS) technology has been crucial in supporting outbreak control attempts in the past few decades by helping to assess disease outbreaks, identify areas of transmission, and visualize spatial and temporal analyses. This project's aim is to determine hotspot area for Covid-19 cases for years 2020 and 2023 by using ArcGIS PRO software and to create a dashboard visualization using new cases and recovered cases data for each state in Malaysia. Space-time Cube is the tool that was used in this study to shows how phenomena change over time within geographic space. Each cube in Space-time cube represents a slice of time and hotspot area also can be determined based on colour concentration in the shape of a cube bin. Dashboard visualization has been created to visualize the result to make it more readable and understandable. Furthermore, it makes it easier to see the data individually according to the type of Covid-19 cases.

**Keywords:** Covid-19, space-time cube, disease, hotspot, ArcGIS PRO

## **ACKNOWLEDGMENTS**

I would like to thank my supervisor, Madam Azlizan Adila binti Mohamad, for her guidance and crucial assistance throughout the completion of our final year project. Her knowledge and encouragement were invaluable in assisting us to overcome obstacles and attain our goals. We really appreciate the time and effort she invested in this project. Furthermore, I would like to convey my heartfelt gratitude to my project partner for her assistance and encouragement throughout our final year project. Her inventiveness, energy, and hard work made a big contribution to our project's success. I appreciate the endless hours we spend brainstorming, problem solving, and pushing each other. Working together not only enhanced my talents, but it was also a fun and memorable experience. In addition, not forgetting our parents who never stop wishing us success in whatever challenges we face and their unwavering encouragement throughout our academic journey. Their love, guidance, and sacrifice have been the foundation of our success. Thank you for being our biggest supporter and always being there for us. Finally, I would like to thank our supervisor once again for believing in us and for her unwavering support. Thank you to the most important one, my partner, for being an awesome partner.

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# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 Background of Study**

The 2019-20 coronavirus pandemic, known as Covid-19, is an ongoing outbreak caused by the severe acute respiratory syndrome coronavirus (SARS-CoV-2). It was first identified in Wuhan, China, in December 2019 and was declared a public health emergency of international concern on January 30, 2020, by the World Health Organization (WHO, 2020a, WHO, 2020b). Over 1.8 million Covid-19 cases have been reported across 210 countries and regions, leading to more than 110,000 deaths. The pandemic has led to significant global socioeconomic disruptions, including the postponement and cancellation of sports, religious, political, and cultural events. (Sarwar et al., 2020).

Coronavirus disease 2019 (Covid-19) is caused by the SARS-CoV-2 virus. An ongoing outbreak is the result of the disease's rapid global expansion. Then, fever, exhaustion, cough, breathing difficulties, loss of taste are among the common symptoms of Covid-19. There's a greater chance of severe symptoms in older individuals. After infection, organ damage has been reported, and some persons continue to experience various consequences months or years later.