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UTILIZATION OF GOOGLE EARTH ENGINE (GEE) FOR LAND USE
AND LAND COVER MONITORING IN PERLIS

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Perlis faces challenges in land cover monitoring, hindering sustainable development. This study uses RS and GIS technologies to track changes in land use and land cover between 2018 and 2022, aiming to identify changes in development. To achieve its aim, the objective of this study is to identify the changes in the development of Perlis between years 2018 and 2022. This study uses the Google Earth Engine (GEE) programme to achieve its goal. In order to compare the changes in land use and land cover between years 2018 and 2022, a map will be created using a variety supervised classification which is Classification and Regression Tree (CART), Random Forest (RF) and Maximum Likelihood Classification (MLC) method. Despite the great accuracy of the classification findings, CART outperforms RF and MLC in the terms of accuracy which is 83.33% for both year in 2018 and 2022. The Sentinel-2 satellite image classifies land cover types and detects changes. GEE tools integrate and analyze spatial data, enabling targeted interventions to mitigate negative impacts, conserve natural resources, and promote sustainable development. The findings of the land use and land cover monitoring in Perlis reveal several significant trends and challenges.

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