# Mobile Analytics Database Summarization Using Rough Set

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*Abstract*— **The mobile device is a device that supports the mobility activities and more portable. However, mobile devices have the limited resources and storage capacity. This deficiency should be considered in order to maximize the functionality of this mobile device. Hence, this study provides a formulation in data management to support a process of storing data with large scale by using Rough Set approach to select the data with relevant and useful information. Additionally, the features are combining analytics method to complete analysis of the data storage processing, making users more easily understand how to read the analysis results. Testing is done by utilizing data from the Malaysia's Open Government Data about Air Pollutant Index (API) to determine the condition of the air pollution level to the health and safety of the population. The testing has successfully created a summary of the API data with the Rough Set approach to select significant data from the main database based on generated rule. The analysis results of the selected API data are stored as a mobile database and presented in the chart intended to make the data meaningful and easier to understand the analysis results of API conditions using the mobile device.**

Keywords — Mobile Analytics, Mobile Database Summarization, Rough Set, Air Pollutant Index

## I. INTRODUCTION

Mobile analytics is part of the feedback that involves measuring and analyzing data that has been generated by the mobile platform and has the nature of mobile sites and mobile applications [1]. Nowadays, mobile analytics technology is growing so quickly. These developments occurred as the development of mobile technology has many advantages that are easy to use and can be used wherever and whenever the user is located. The mobile device itself is designed to be more portable and supports mobility activities. Mobile devices have limitations in storage capacity and processing power. Therefore, these devices need a mechanism to select meaningful data without changing the contents of the database. It will synchronize a process between the main database and the mobile database.

Several studies have produced database summarization with various methods but cannot handle data on a large scale, only focus on transactional data, image data and still can be refined to get more meaningful, accurate, and efficient result [2][3][4][5]. This research is to develop a new framework which produces mobile database summarization with the Rough Set approach and will be combined with analytics method in the mobile device. Mobile analytics method supported by dashboard function to show the result of data processing in the form of the chart [6]. It can help to understand and optimize the report of data processing result [7].

In order to understand the amount of data to be processed that have different types and knowledge, it is necessary to get a detailed understanding of mobile analytics database with a Rough Set approach. This paper will introduce the basic knowledge of mobile analytics, the current researches, and the proposed method to handle the issues in a specific perspective. This paper also will describe the background of study and