

## Penerapan pengelompokan hirarki dan apriori berbobot untuk mengetahui aturan asosiasi kedatangan kembali peserta tes kesehatan = Applying hierarchical clustering and weighted apriori to investigate the examinees re coming association rules

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### Abstrak

#### [<b>ABSTRAK</b><br>

Pemeriksaan kesehatan secara umum merupakan bagian yang umum dari perawatan kesehatan di beberapa negara. Jumlah permintaan layanan kesehatan di Taiwan mengalami peningkatan selama sepuluh tahun terakhir. Kenaikan permintaan tersebut didorong oleh beberapa faktor, termasuk populasi yang semakin menua, dan peningkatan jumlah kasus penyakit kronis. Fluktuasi jumlah kedatangan peserta tes kesehatan yang tidak menentu, membuat rumah sakit sulit untuk memberikan pelayanan yang memuaskan. Rumah sakit perlu membuat strategi perencanaan, seperti manajemen kesehatan untuk menangani masalah tersebut dengan cara memprediksi kedatangan peserta uji kesehatan. Aplikasi data mining dalam perawatan kesehatan adalah pembuktian bahwa data mining dapat memberikan informasi yang sangat berguna untuk semua pihak yang terlibat dalam industri kesehatan, seperti meningkatkan kualitas pelayanan rumah sakit. Penelitian ini menggunakan pengelompokan dan aturan asosiasi untuk mengetahui pola dari data pemeriksaan penyakit cerebrovascular, dengan tujuan memprediksi kedatangan kembali peserta tes kesehatan. Algoritma Apriori pembobotan dapat mengetahui hubungan antar item menggunakan nilai support, confidence, dan bobot masing-masing item sebagai tingkat prioritas dari aturan asosiasi, karakteristik aturan asosiasi dapat diketahui, yang mana hasil tersebut dapat membantu rumah sakit dalam meningkatkan kualitas pelayanan. Pada dasarnya, data memiliki partisi yang berbeda satu sama lain, atas dasar tersebut maka dalam penelitian ini dilakukan pengelompokan sebelum dilakukan penggalian informasi menggunakan aturan asosiasi, dimana proses tersebut merupakan salah satu proses yang penting. Setiap kelompok diharapkan mengandung asosiasi tanpa kontaminasi dari bagian kelompok lain yang memiliki pola hubungan yang berbeda. Penelitian ini menggunakan metode pengelompokan hirarki yang dikenal dengan Ward's Agglomerative yang relatif sederhana untuk dipahami. Diimplementasikan, dan tidak perlu menentukan banyaknya jumlah kelompok pada awal proses.

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General health examinations are common elements of health care in some country. Taiwan demand for healthcare services has increased over the past decade. The increase has been driven by several factors, including an ageing population, and the increasing prevalence of chronic disease. The fluctuation number of examinees with unpredictable coming behavior makes hospital difficult to provide the satisfying service. Hospital needs to make strategic planning such as healthcare management to solve this problem by predicting examinee coming. Data mining applications in healthcare is the realization that data mining can generate information that very useful to all parties involved in the healthcare industry, such as improving the treatment quality of hospitals. This research used clustering and association rule task to know the pattern of cerebrovascular medical examination databases to predict examinees' re-coming. The Weighted-Apriori

algorithm finds out the relationships among item sets using support, confidence, and weight of each feature as the priority rank of the association rule, the characteristic of the rule can be generated, which help the hospital to improve the service quality. The data is performed on partitions that are essentially distinct from each other is the reason why clustering performs before association rule mining is one of essential process. Each cluster would be expected to contain associations without interference or contamination from other sub groupings that have different patterns of relationships. This research used hierarchical clustering method called Ward's agglomerative which relatively simple to understand, implement, and does not need to specify number of clusters in advance.;

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