Universities offer a wide selection of courses to students studying in different fields; however, this has generated various unintended problems such as students struggling, dropping, or failing. Universities also own large amounts of historical data about students containing rich knowledge that can be used to facilitate a broad range of educational research and analytics to enhance student performance. Knowledge discovery in databases (KDD) is the process of finding comprehensible patterns that can be interpreted as useful or interesting knowledge. One component in this process is Data Mining which is the application of machine learning algorithms for extracting patterns from data. In this context, data mining techniques are used to answer educational research questions that highlight students’ success in higher education. Several challenges are facing higher education, one of which is finding the most effective sequence of modules for students for each semester. This finding may help students to improve their performance. In this research, we investigate dependency between set of courses chosen by students at each level and their performance using a classification technique in order to build a performance prediction model, which is based on previous students’ academic records.
The finding of the study furnishes useful information to advisors in educational institution and valuable knowledge to feed analytics based systems and learning recommender systems to assist students selecting future modules to obtain optimum pathways courses.

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