

# Abstract

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## **Predicting Number of New Students in a Course Enrollment: A Data Mining Approach**

finding patterns in sequences is a challenging problem with a great importance. in many domains such as medicine, finance, marketing, data are represented as sequences that can be used to predict certain behavior events. this can also be extended to the education domain for a number of potentially useful applications. this paper presents a predictive model with a high level of accuracy to predict the number of students who will register in a certain course in a next term. the proposed model views the student registration process as sequential patterns where the college offers courses the students can register some of these courses at each term. by using the stored data of past semesters along with the course-plan (course pre-requisites), regular expressions can be constructed to constraint the extracted sequential patterns of previously registered courses that will be used to predict the number of new students who will enroll in a course. to demonstrate the working of the model, a brief overview of a sequential pattern mining algorithm called tspirit (tree approach for sequential pattern mining with regular expression constraints) is first presented. then, a study of the complexity of tspirit is given to prove the efficiency of using it as a predictive model. finally, tspirit is applied to the student database of the arab academy for science technology (aast) to extract the sequential patterns. experimental results show the effectiveness of our approach as a predictive model.