

## ABSTRACT

Learning to program is difficult. The skill requires one to model a real problem in abstract form and expressing it in a logical structure and detail programming language. Teaching programming to students is also a challenging task to instructors. In Universiti Utara Malaysia, introductory programming course is a compulsory for various program such as Bachelor in Information Technology, Bachelor in Multimedia, Bachelor in Decision Science and Bachelor in Education specializing in Information Technology. The unique characteristic of the students taking this course is that they may come from either the science or non-science background. This is in contrast with previous studies related to predicting student's potential in first programming course that usually involved computer science undergraduate students.

The current student's achievement in programming courses is not very encouraging and this could add with the current problem of high unemployment statistics of IT graduates who are lacking in the technical and communication skill besides business knowledge. This study is an initial step in identifying the possible factors that influence a student's success in programming. This knowledge will assist teaching instructor in designing the appropriate pedagogical approach that is suitable for the students that we anticipate not be able to perform well. Respondents for this study were selected using systematic sampling based on list of students who has taken introductory programming given by Academic Affairs Department. The instruments were distributed to the respondents.

As for the data analysis, data mining process is used to help identify the possible factors based on the data selected. Classification technique is used to obtain the predictive model and clustering technique for the descriptive model. SAS Enterprise Miner was used to assist in the data analysis.

Based on the findings, mathematical and aptitude test score is a strong explanatory variable for student's success in programming. In terms of personality, Investigative is a dominant type among students who are good in programming. Teaching instructor need to use alternative approach fro other students in order to improve their understanding and skill in the subject.