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## BACKGROUND

Many universities, including the University of Northampton, are trying to computerise the grading process. For example, students now need to submit their assignments online. However, many of the systems do not evaluate and provide feedback to the students. For programming related modules, it is envisaged that a system that can carry out automated marking and provide instantaneous feedback would enhance the learning, engagement and experience. This is because, every week, the lecturers only have limited time to guide large number of students with the weekly exercises. Often, many computing students do not get all the feedback they need, and this has led to students not doing sufficient number of weekly exercises.

## AIMS AND OBJECTIVES

The research aims to explore the perceptions of computing students regarding the use of an automated marking tool. Additionally, the research also evaluates the performance of an automated marking tool, The Marker's Apprentice\* (TMA). Ultimately, the researchers hope that TMA will be able to enhance student learning, engagement and experience.

Objectives:

- Distribute questionnaires to the students to get student perceptions about automated marking.
- Test TMA on a small group of students.
- Identify the limitations of TMA.

\* Originally developed by University of Nottingham

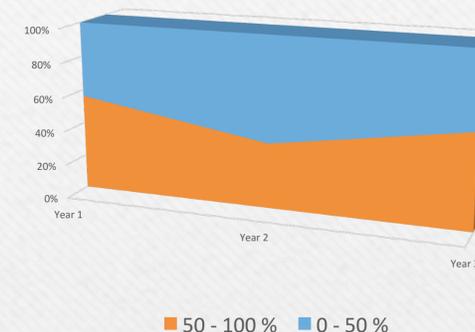
## QUESTIONNAIRE RESPONSES

167 computing undergraduate students completed the questionnaire. Some interesting findings are illustrated below.

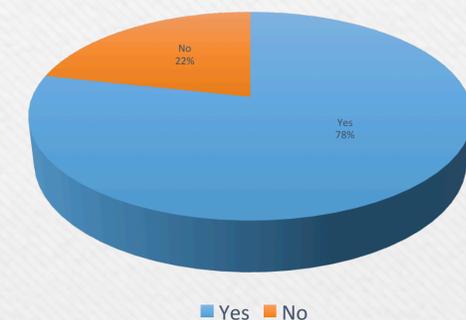
**If weekly exercises were to be graded, before your final submission, would you like to have an automated tool that will analyse the quality of your programming code and provide you with constructive feedback?**



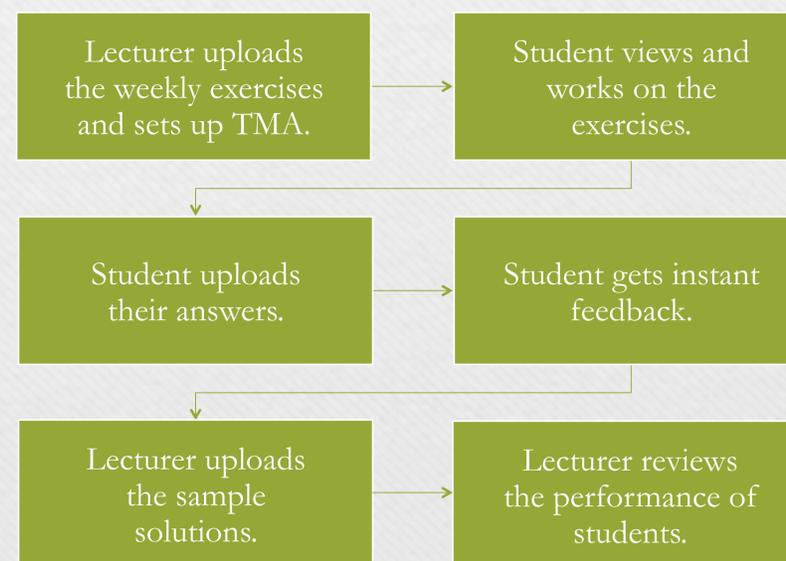
**On average, how many lab exercises do you complete each week?**



**If you can get instant feedback from an automated marking tool, would you complete more lab exercises?**



## WORKFLOW



## CONCLUSIONS

Following the questionnaire survey, the researchers can conclude that the majority of the computing undergraduate students would like to have an automated marking tool and also that the students believe that automated feedback would enable them to complete more weekly exercises.

The researchers have identified some limitations of the current system. Following enhancements are recommended.

- Improve the feedback that is provided to the students.
- Enhance the Graphical User Interface (GUI).
- Extend the system so that it can be used in other modules and subject areas.