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## USING MELLIVORA TO GAMIFY ASSESSMENT

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### Abstract

Mellivora is web-based software designed for hackathons. The software uses a “capture the flag” approach that allows setting a variety of tasks that can be divided into levels. Tasks in one level can be locked until a specific gateway task in the previous level has been completed. Our work has adapted Mellivora for use as an in-class assessment tool. Students in one or more supervised locations access Mellivora via the web on secure computers. Students progress through the tasks much like a competitive hackathon, but their score in the competition is used as the result of a summative assessment. Our approach has several advantages. First, it allows the same assessment to be used at different locations simultaneously. Second, for tasks requiring computers, the assessment will be more authentic than a pen-and-paper test since students can be given access to appropriate computing resources. Third, the gamification involved will affect student attitude towards the assessment. Finally, the system has the capability of automatically assessing student answers, which may reduce the marking workload. We evaluated our approach using a hackathon, with feedback used to improve software usability. We then ran a formal trial in an assessment for a cyber security unit, with very positive results. We intend to apply our software to a range of units as well as making it available to other parties.

**Keywords:** Computer-based Assessment, Hackathon, Mellivora.

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