

# ProTuS - Interactive Learning Analytics Tool

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**ABSTRACT:** ProTuS is personalized and interactive e-learning tool that provides different visualization reports to support learning process. It offers several, mostly programming courses and it is currently used and evaluated at the Norwegian University of Science and Technology for 1<sup>st</sup> year's Web technologies course.

**Keywords:** e-learning, programming courses, visualized reports

## 1 PROGRAMMING TUTORING SYSTEM

ProTuS<sup>1</sup> is the programming tutoring system developed at the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway. It provides learners with personalized courses from various domain (Vesin, Ivanović, Klašnja-Milićević, & Budimac, 2011). Currently, ProTuS offers different presentation methods and adapts user interface using techniques of tag-based recommendation (Vesin, Ivanović, Budimac, & Pribela, 2008).

To support concepts of open learner model and learning analytics, several visualization reports are offered or planned for development in ProTuS. These reports present information about test results, learners' progress, personal and group activities, fulfillment of learning objectives, etc. Additional visualizations are planned to support learning analytics integration and aggregation of learning-related data across multiple sources.

ProTuS has been used and tested by 10 teaching assistants and 66 first year bachelor students from the *Web technologies* course at NTNU. The experiments showed that the system provided useful insights for further implementation of learning analytics component of ProTuS.

## REFERENCES

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<sup>1</sup> ProTuS home page: <https://protus.idi.ntnu.no/>, Demonstration video: <https://youtu.be/RQ-KoLFlwLg>