

# Tutorial Descripton for the 12<sup>th</sup> International Conference on Advances in Databases, Knowledge, and Applications – DBKDA, Lisbon September 27 – October 1, 2020

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## Title: Codegeneration for Database Developers

### Organizers:

Prof. Dr. Andreas Schmidt<sup>1,2</sup>, Dr. Steffen G. Scholz<sup>1</sup>

(1) Institute for Automation and Applied Informatics

Karlsruhe Institute of Technology

Karlsruhe, Germany

email: { andreas.schmidt | steffen.scholz }@kit.edu

(2) Department of Computer Science and Business Information Systems

University of Applied Sciences

Karlsruhe, Germany

email: andreas.schmidt@hs-karlsruhe.de

Primary email contact: [andreas.schmidt@kit.edu](mailto:andreas.schmidt@kit.edu)

### Tutorial description:

Regular Expressions (RE) are a powerful tool for searching complex patterns in text. In this tutorial, RE will be used to create lightweight software generators in the context of database programming and development. Starting with simple generators such as code mungers and inline code expanders, a number of different generator technologies will be presented and their use will be demonstrated by practical examples. In addition, it will be shown that RE can also be used to formulate powerful substitution rules, which is a valuable aid especially when transforming and preparing extensive data sets.

### Target Audience:

Level: Intermediate - Participants should be familiar with software development.

### Learning objectives:

The aim of the tutorial is to familiarize the participants with the performance of scripting languages in interaction with regular expressions and shell commands and to recognize their possible applications in the software development process. After the tutorial the participants will be able to recognize automation potential in their software development process and develop their own generators, e.g. based on regular expressions.

### Short Bio:

**Prof. Dr. Andreas Schmidt** is a professor at the Department of Computer Science and Business Information Systems of the Karlsruhe University of Applied Sciences (Germany). He is lecturing in the fields of database information systems, data analytics and model-driven software development. Additionally, he is a senior research fellow in computer science at the Institute for Applied Computer

Science of the Karlsruhe Institute of Technology (KIT). His research focuses on database technology, knowledge extraction from unstructured data/text, Big Data, and generative programming. Andreas Schmidt was awarded his diploma in computer science by the University of Karlsruhe in 1995 and his PhD in mechanical engineering in 2000. Dr. Schmidt has numerous publications in the field of database technology and information extraction. He regularly gives tutorials on international conferences in the field of Big Data related topics and model driven software development. Prof. Schmidt followed sabbatical invitations from renowned institutions like the Systems-Group at ETH-Zurich in Switzerland, the Database Group at the Max-Planck-Institute for Informatics in Saarbrücken/Germany and the Data-Management-Lab at the University of Darmstadt.

**Dipl.-Ing Dr. Steffen G. Scholz** has more than 18 years of R&D experience in the field of polymer micro & nano replication with a special focus on injection moulding and relevant tool-making technologies. He is an expert in process optimization and algorithm design and development for micro replication processes. He studied mechanical engineering with special focus on plastic processing and micro injection moulding and obtained his degree as from the University of Aachen (RWTH). He obtained his PhD from Cardiff University in the field of process monitoring and optimization in micro injection moulding and led a team in micro tool making and micro replication at Cardiff University. Dr. Scholz joined KIT in 2012, where he is now leading the group for process optimization, information management and applications (PIA).