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Software testing with an operational profile: OP definition

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This article is devoted to the survey, analysis, and classification of operational profiles (OP) that characterize the type and frequency of software inputs and are used in software testing techniques. The survey follows a mixed method based on systematic maps and qualitative analysis. This article is articulated around a main dimension, that is, OP classes, which are a characterization of the OP model and the basis for generating test cases. The classes are organized as a taxonomy composed of common OP features (e.g., profiles, structure, and scenarios), software boundaries (which define the scope of the OP), OP dependencies (such as those of the code or in the field of interest), and OP development (which specifies when and how an OP is developed). To facilitate understanding of the relationships between OP classes and their elements, a meta-model was developed that can be used to support OP standardization. Many open research questions related to OP definition and development are identified based on the survey and classification.

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