Models of Software Development Environments

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Abstract

We present a general model of software development environments that consists of three components: structures, mechanisms and policies. The advantage of this model is that it distinguishes intuitively those aspects of an environment that are useful in comparing and contrasting software development environments. Our initial application of the model is to characterize four classes of environments by means of a sociological metaphor based on scale: the individual, the family, the city and the state models. The utility of the IFCS taxonomy is that it delineates the important classes of interactions among software developers and exposes the ways in which current software development environments inadequately support the development of large systems. We demonstrate the generality of our model by also applying it to a previously published taxonomy that categorizes environments according to how they relate to four historical trends: language-centered, structure-oriented, toolkit and method-based environments.

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