

Modern IDEs such as Eclipse offer static views of the source code, but such views ignore information about the runtime behavior of software systems. Since typical object-oriented systems make heavy use of polymorphism and dynamic binding, static views will miss key information about the runtime architecture. In this paper, we present an approach to gather and integrate dynamic information in the Eclipse IDE with the goal of better supporting typical software maintenance activities. By means of a controlled experiment with 30 professional developers, we show that for typical software maintenance tasks, integrating dynamic information into the Eclipse IDE yields a significant 17.5 percent decrease of time spent while significantly increasing the correctness of the solutions by 33.5 percent. We also provide a comprehensive performance evaluation of our approach

