Java Bytecode Specification and Verification

ABSTRACT

We propose a framework for establishing the correctness of Java (-231.5428 -50..4 Td uon)Tj 0.07173 0 Td trustend

Java
Weakest Precondition Calculus

JML source identi ers are linked with their identi ers on bytecode level, namely with the corresponding indexes either from the constant pool or the array of

5. **WEAKEST**

$$
\begin{aligned}
&\mathbf{wp}(\texttt{invoke}\ \texttt{m};\ ;\ ^{exc}) = \\
&\quad {}^{pre}(\texttt{m}) \wedge \\
&\qquad \forall_{j=1::s} \mathbf{e}_j : \quad {}^{post}(\texttt{m})\ \begin{matrix}[\texttt{lv[i]} \quad \texttt{st(c+i-nArg(m))}]_{i=0}^{nArg(m)} \\ [\mathbf{n}\texttt{result} \quad \texttt{fresh\_var}]\end{matrix} \\
&\qquad\qquad) \\
&\qquad\qquad\quad \begin{matrix}[\texttt{c} \quad \texttt{c} \quad \texttt{nArg}(\texttt{m})] \\ [\texttt{st(c)} \quad \texttt{fresh\_var}]\end{matrix} \\
&\wedge^{k}
\end{aligned}
$$

Hypothesis on bytecode:	Hypothesis on source level: