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	icholarship Skills				
Floating Figures					
<pre>\section{Wea \begin{figur \hspace*{lin \begin{tabul & Today & A & 356 & B & 851 & \end{tabular \caption{Tem \label{mars} \end{figure} In Figure \r</pre>	<pre>ther on Mars} e} e} ar}{ll c c c } \hline Yesterday & Tomorrow \\ \hline \hline 22 & 18 \\ \hline 456 & 129 \\ \hline } perature in degrees K, at sites A and B on Mars.} \hrule ef{mars} we report the temperature at A and B.</pre>				
	Today Yesterday Tomorrow A 356 22 18 B 851 456 129 Figure 1: Temperature in degrees K, at sites A and B on Mars. 1 Weather on Mars E Temperature in degrees to a box Description				
	1 Weather on Mars				























	Scholarship Skills					
		Book				
@E	<pre>@Book{Scott92,</pre>					
	author =	"Marla Scott",				
	title =	"Effective				
		<pre>Programming in {C}",</pre>				
	year =	"1992",				
	publisher	= "Addison-Wesley"				
}						
	Lecture 3a	Andrew Black David Majer =				
	Lecture sa	Andrew Black, David Maler -				

Schol	arship Skills
	Journal Article
@Article{Cham	bers95,
author =	"Craig Chambers and Gary T. Leavens",
title =	"Typechecking and Modules for Multimethods",
journal =	"ACM Transactions on
-	Programming Languages and Systems",
volume =	"17",
number =	"6",
pages =	"805843",
month =	nov,
year =	"1995"
}	
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$\psi_{\Gamma_E X}$	Bib C Tags Templates		1 Unx B Pros 4 of 15 Scole 127 1 87 A
435	Second, to help programmers recover successfully from violated preconditions,	6	Previous Next LaTeX BibTeX Drawer Go to page Magnification Mc
436	programmers need expressive, distinguishable, and understandable feedback that		
438	this is the focus of the remainder of this article.		
439			IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. X, NO. T, MONTH YEAR
440	An Alternative to Textual Error		
441	Messages}\label{sec:basicRefAnnsDescription}		return statement to the
442			arrow (Figure 4, midd
443	we have built a plugin for the Eclipse environment that addresses the problems with	n	Wheel tront = bike.getFrontWheel();
444	The plugin is called Refactoring Appotations, and can be downloaded from		Wheel rear = bike.getRearWheel(]; ure 4 hoftom) In car
	\url{http://multiview.cs.pdx.edu/refactoring/refactoring_annotations}.		arrows, indicating the l
445	In general, Refactoring Annotations can be thought of	10	boolean trued =isWheelTrue(tron); When code violates
446	as graphical error messages;		<pre> trued = trued && isWheelTrue(rear); tions are intended to g </pre>
447	specifically, the current plugin displays violated preconditions for the		to correct the violation
440	\refactName{Extract Method} refactoring.		of reduce the selection Other solutions include
449			break and continue
450	\begin{figure}		refactoring.
451	\centering		Fig. 3. Refactoring Annotations overlaid on program Refactoring Annotat
452	\includegraphics[scale=\figureScale]{annsOk}		text. The programmer has selected two lines (between amount of code to be the dotted lines) to extract Befactoring Appotations of tens or hundreds of
453	Refactoring Annotations overlaid on program text.		show how the variables will be used: front and rear passed in or returned.
454	extract		will be parameters, as indicated by the arrows into the values are colored. In t
456	Refactoring Annotations show how the variables will be used:		code to be extracted, and trued will be returned, as assigns to many variab
457	\texttt{front} and \texttt{rear} will be parameters, as indicated by the		indicated by the arrow out of the code to be extracted. complex. However, w
458	arrows into the code to be extracted, and		the extracted method
459	\texttt{trued} will be returned, as indicated by the arrow out of the code		complex Refactoring A
460	to be extracted.\label{fig:annsOk}}		EXTRACT METHOD P
461	\end{ligure}		Bike condBike = getRoadBike(); has commented, Refact
463			<pre> vBike mountainBike = getMtnBike(); complexity metric. Refactoring Annotat </pre>
464	The programmer starts using the Refactoring Annotations tool by selecting some		grammer in resolving
	program text.		First, because Refactor
465	Refactoring Annotations overlay the program text to express control- and data-flow	v	loadOnCar (roadBike, mountainBike); ple precondition violat
466	Information about the programmer's selection.		give the programmer and
468	is highlighted, as shown in Figure~\ref{fig:annsOk}.		boolean curbHop (int turbHeight) (correcting a condition
469	Across the top of the selection, an arrow points to the first use of a variable		int hopHeight = liftFrontWheel(); ple assignments. Likey
470	whose value		likely to be easier than
471	that will have to be passed as an argument into the extracted method.		and (hopHeight < curbHeight) (Refactoring Annotation
472	Across the bottom, an arrow points from the last assignment of a variable		Refectoring Appoint
474	will have to be returned		visualizations. Our co
475	L-values have black boxes around them, while r-values do not.	4	similar to Control Stru
476	An arrow to the left of the selection indicates that control flows from	Ŧ	[liftRearWheel(); Control Structure Diag
			20 nend on the programm



