Bugs Framework (BF): Vulnerability Model

Defect Type Weakness Type$_1$ Error Type $_1$

Bug $\rightarrow$ Operation $_1$ $\rightarrow$ Error $_1$

$(Bug, Operation_1, Error_1) \leftarrow lookup()$

$Fault_1 .Type \leftarrow Error_1 .Type$

Fault Type $_2$ Weakness Type $_2$ Error Type $_2$

Fault $_1$ $\rightarrow$ Operation $_2$ $\rightarrow$ Error $_2$

$(Fault_1, Operation_2, Error_2) \leftarrow lookup()$

$Fault_2 .Type \leftarrow Error_2 .Type$

...

...

Fault Type $_{N-1}$ Weakness Type $_N$ Exploitation Type $_j$

Fault $_{N-1}$ $\rightarrow$ Operation $_N$ $\rightarrow$ Final Error

Failure

Bug   Operation   Error/Fault   Final Error   Failure

$\rightarrow \hookrightarrow$ Causation $\leftarrow$ Causation/Propagation   lookup() − Causation
Syntax Rules   Semantic Rule   Semantic Function   BF, I. Bojanova, 2014 - 2023