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[Continued on next page]

(54) Title: OPTIMIZED EXECUTION OF DYNAMIC LANGUAGES

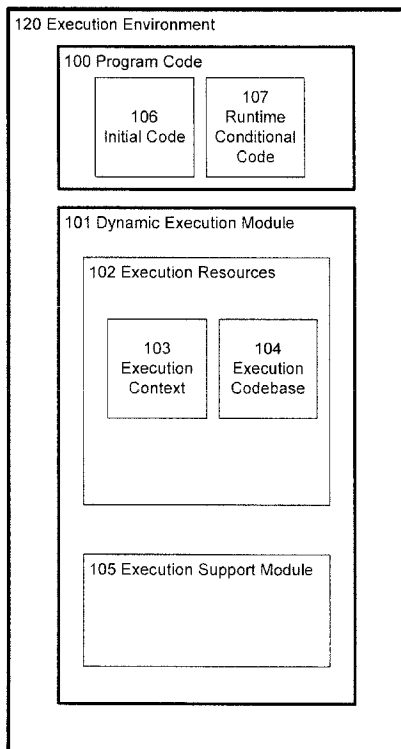


FIG. 1

(57) Abstract: Program code in a dynamic language is executed through a dynamic execution module that includes an execution context and an execution codebase. The instructions of the program code are translated into machine code that is stored in the execution codebase, and the execution context tracks the runtime state and persistent state of the program through executions and across executions. Using the execution codebase and the execution context the dynamic execution module minimizes duplicative machine code generation, while preserving the dynamic aspects of the program.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 15/16, 9/45 (2013.01)

USPC - 709/217, 220

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) Classification(s): G06F 15/16, 9/45, 9/445 (2013.01)

USPC Classification(s): 709/217, 220, 226; 395/700

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C,B, DE-A, DE-T, DE-U, GB-A, FR-A); DialogPro (Derwent, INSPEC, NTIS, PASCAL, Current Contents Search, Dissertation Abstracts Online, Inside Conferences); IEEE; Google/Google Scholar: dynamic, code, language, execute, initial code, conditional code, runtime

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 5,530,964 A (ALPERT, A et al.) June 25, 1996: abstract; column 3, lines 44-48; column 5, lines 16-18; column 6, lines 1-5; column 10, lines 23-25; column 13, lines 4-8; column 15, lines 1-3	1, 3, 10, 12, 19 ----- 2, 4-9, 11, 13-18, 20
Y	US 8,095,507 B2 (WU, J et al.) January 10, 2012: abstract; figure 6E; column 10, lines 46-50; column 16, lines 27-37	2, 8, 11, 17
Y	US 7,389,317 B2 (GUTTAG, K et al.) June 17, 2008: abstract; column 18, lines 55-62; column 26, lines 19-33; column 113, lines 34-40; column 139, 8-11	4-7, 13-16
Y	US 2011/0179347 A1 (PROCTOR, I et al.) July 21, 2011: abstract; paragraph [0085]	9, 18, 20

Further documents are listed in the continuation of Box C.

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"&" document member of the same patent family

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