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## (12) United States Patent

### Huang et al.

### (54) METHODS AND APPARATUS FOR A WEB APPLICATION PROCESSING SYSTEM

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- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 999 days.
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- (22) Filed: Aug. 4, 2000

### **Related U.S. Application Data**

- (60) Provisional application No. 60/156,872, filed on Sep. 30, 1999.
- (51) Int. Cl.<sup>7</sup> ..... G06F 9/44
- (52) U.S. Cl. ..... 717/115

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# (10) Patent No.: US 6,968,539 B1 (45) Date of Patent: Nov. 22, 2005

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Primary Examiner—Tuan Dam

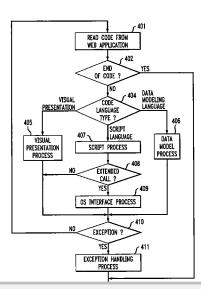
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### (57) ABSTRACT

A software system is provided to allow a computer to install and process web applications according to the invention. Such web applications are written as web pages that have access to the full range of operating system resources, including those not accessible through a web browser. Preferably, a web application is built using three types of languages used for constructing web pages, namely: (a) a visual presentation language; (2) a data modeling language; and (3) a scripting language for embedding logic. The software system preferably comprises a web application manager, an operating system interface module, a scripting language interpreter, and optionally a web browser and/or a data modeling language processor. Various other features such as data caching and security filtering are provided in accordance with such a system.

### 10 Claims, 12 Drawing Sheets



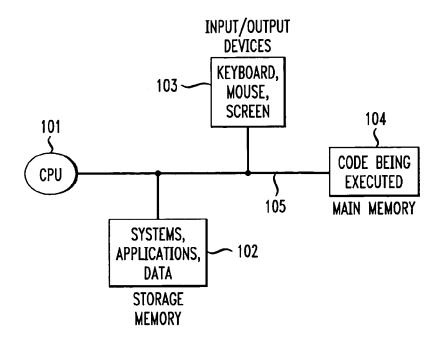
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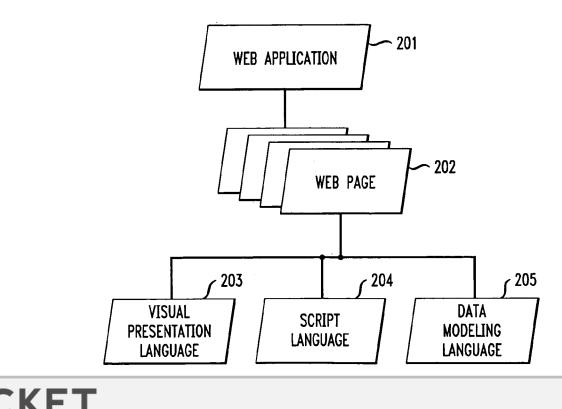
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FIG. 1

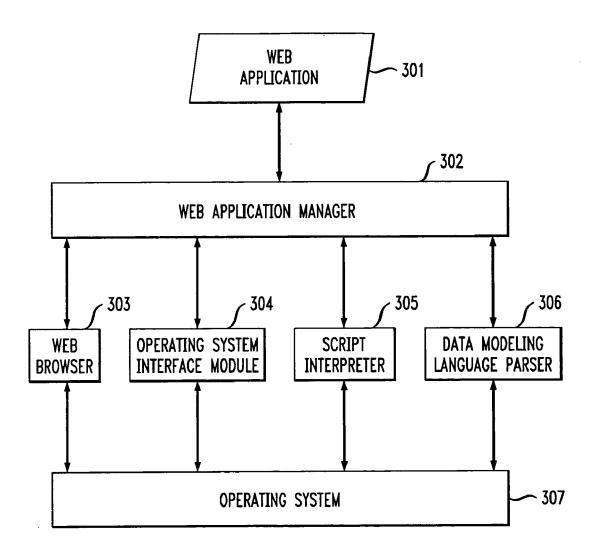


*FIG.* 2



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FIG. 3



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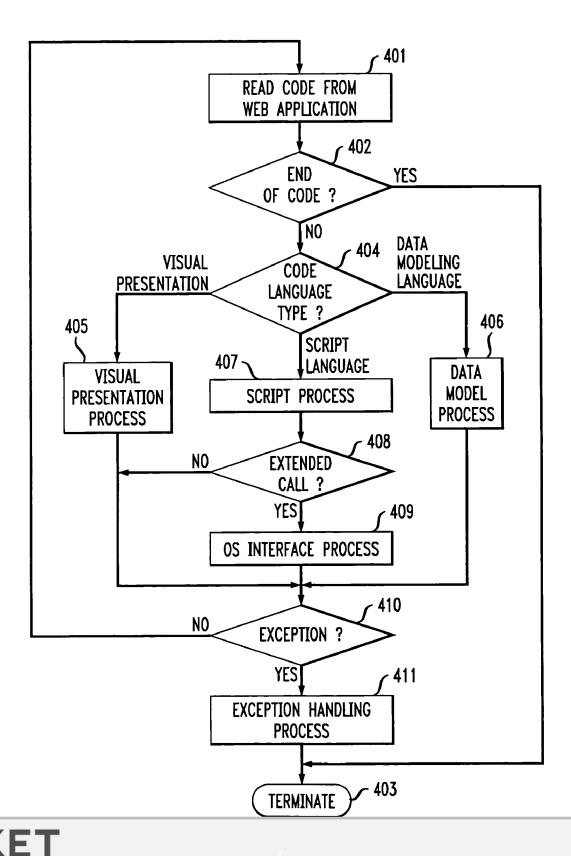
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FIG. 4



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*FIG.* 5

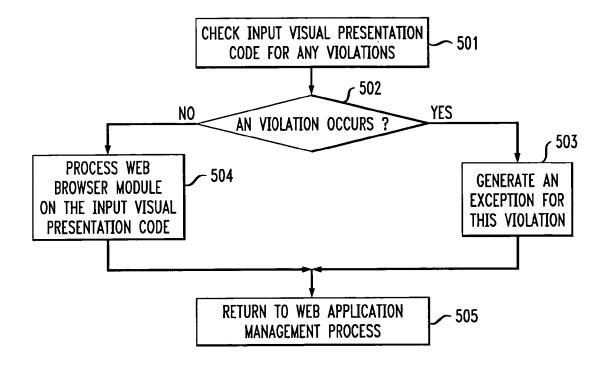
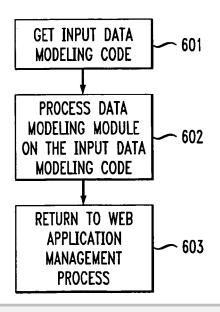


FIG. 6



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