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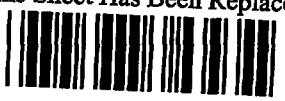

SYSTEM AND METHOD FOR GENERATING IDENTIFIERS FOR UNIQUELY IDENTIFYING OBJECT TYPES FOR OBJECTS USED IN PROCESSING OF OBJECT-ORIENTED PROGRAMS AND THE LIKE

ABSTRACT OF THE DISCLOSURE

A fingerprint generating system generates a fingerprint value for an object in an object-oriented programming arrangement. The object comprises a digital information stream and the fingerprint generating system generates a fixed-length fingerprint value from the digital information stream. The fingerprint generating system receives the digital information stream comprising the object and processes the digital information stream in accordance with a selected hash value generating algorithm to generate a hash value which comprises the fingerprint value. The hash value generating algorithm is selected from a class of hash value generating algorithms characterized in that:

i. in response to said input digital information stream, a digital hash value having a predetermined number of digital bits will be generated as an output;

ii. the digital hash value will be a function of the digital information stream, so that

(a) given two input streams that are identical, identical digital hash values will be generated; but

(b) given two input streams that are not identical, it is extremely unlikely that identical digital hash values will be generated; and

iii. when the object, as a "referencing object," includes a reference to another object, as a referenced object, the input digital information stream of the referencing object can include a fingerprint which had been previously generated for the referenced object, rather than a digital information stream for referenced object itself,

the digital hash value generated according to the selected hash value generating algorithm comprising the fingerprint generated by said fingerprint generating system.